



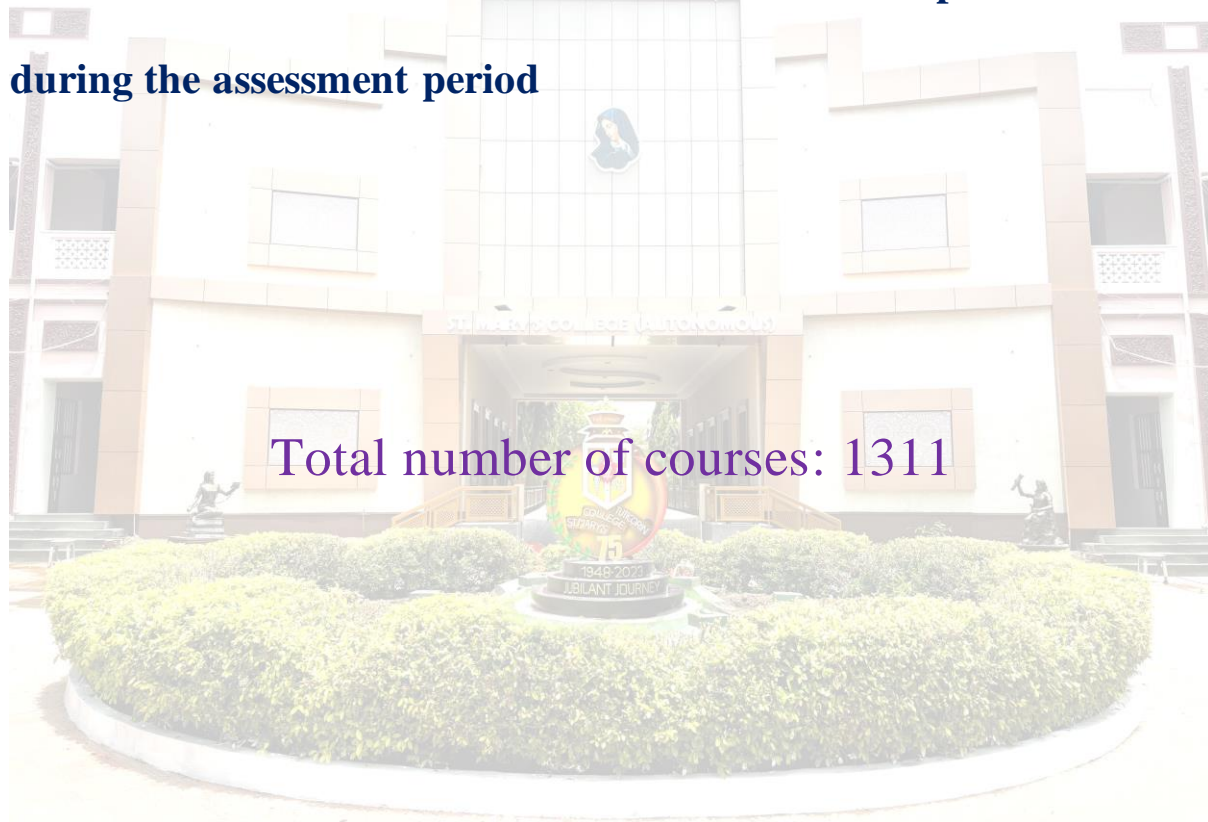
**St. Mary's College (Autonomous)**  
Reaccredited with 'A+' Grade by NAAC (Cycle IV)  
Thoothukudi



**Criterion: I – Curricular Aspects**  
**1.1 – Curriculum Design and Development**  
**Year: 2018-2023**



### **1.1.1 Courses relevant to the Global developmental needs during the assessment period**



**Total number of courses: 1311**

*Lina Rose*

**Principal**

**St. Mary's College (Autonomous)**  
**Thoothukudi-628 001.**

**Programme: BBA**

Semester I			
Core I – Foundations of Business			
Code:18UBAC11	Hrs/Week:5	Hrs/Sem.:75	Credits:4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the meaning, nature and purpose of business.	1	Un
CO-2	compare business, profession and employment.	1,3,5	Un
CO-3	understand the different forms of business.	1,3,5	Un
CO-4	apply the principles of sole trading and Partnership.	1,4,5	Ap
CO-5	evaluate the functions performed by Government Institutions.	1,2,3	Ev
CO-6	understand the concept of Private and Public sector Institutions.	1	Un
CO-7	analyse the difference between Private and Public corporations.	1,3	An
CO-8	expose the role of Government in business environment.	2,3	Ap

Semester I			
Core II - Financial Accounting			
Code:18UBAC12	Hrs/Week:5	Hrs/Sem.:75	Credits:4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	apply appropriate judgment derived from the knowledge of accounting theory.	1	Un
CO-2	gain knowledge in the preparation of books of accounts.	6	Cr
CO-3	have an effective understanding of analysis of depreciation.	1, 9	An
CO-4	apply the knowledge to prepare the final accounts of sole trader.	9	Cr, Ap
CO-5	evaluate the financial position of a company at the end of every year.	2, 4	Ev
CO-6	employ critical thinking and skills to analyze financial data.	9	Re
CO-7	prepare subsidiary books of accounts.	1, 9	Ap, Ev
CO-8	prepare financial statements in accordance with generally accepted accounting principles.(GAAP)	1, 8, 9	Cr, Ev & Ap

Semester-I			
Allied-II IT for Managers			
Code:18UBAA12	Hrs/Week:3	Hrs/Sem.: 45	Credit:3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the history and basic concepts of computers	1	Un
CO-2	know about the input devices of a computer	1,5	Un
CO-3	know about the output devices of a computer	1,5	Un
CO-4	create word documents with formatting features	3,5	Cr
CO-5	apply spell and grammar check in MS Office	4	Ev
CO-6	know about MS Excel in detail for calculations	5	Cr
CO-7	know about MS Power point for presenting company data	5	An
CO-8	create multimedia presentation	1,5	Cr



SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

Semester II			
Core – III Principles of Management			
Code:18UBAC21	Hrs/Week:5	Hrs/Semester:75	Credits:4

**Course Outcome :**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic principles, nature and levels of management.	1,4	Un
CO-2	understand the scientific approaches of management	4	Un
CO-3	know the importance of planning its procedures and limitations.	1	Cr
CO-4	analyze organizational structure and span of control.	2,3,5	An
CO-5	understand the steps in staffing.	1,8	Un
CO-6	identify the difference between power and authority.	7	Re
CO-7	evaluate the effectiveness of directing and coordinating.	5	Ev
CO-8	understand the techniques and importance of controlling.	1,2	Un

Semester II			
Core IV - Business Mathematics			
Code:18UBAC22	Hrs/Week:5	Hrs/Semester: 75	Credits:4

**Course Outcome :**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the knowledge of using number system and techniques.	6	Un
CO-2	prepare various formation of matrices	1, 8	Cr
CO-3	gain a thorough knowledge on calculation of interest and ratios followed in the field of banking.	1,5	Ap, Re
CO-4	apply the mathematical techniques and skills to face aptitude exams.	4, 8	Ap, Ev
CO-5	understand the fluctuations of demand and supply in the market environment.	2, 3, 5	Un, Ap
CO-6	analyze the equilibrium point of the business.	7	Re, An,Ap
CO-7	exhibit ability to operate electronic calculators	9	Un, Ap
CO-8	create, use and analyze graphical representations of mathematical relationships.	1, 8, 9	Cr, Ap,An

**Semester-II****Allied III- Business Correspondence****Code:18UBAA21****Hrs/Week:3****Hrs/Sem.: 45****Credits: 3****Course Outcome :**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the meaning and definition of business correspondence.	1	Un
CO-2	understand the need and uses of business letters in business fields.	2	Un
CO-3	create the students to write business letters.	6	Ap
CO-4	know to fill bank, insurance and agency forms.	6	Cr
CO-5	understand the importance of short and long reports.	6	Un
CO-6	understand about interdepartmental communication.	8	An
CO-7	know the need of business correspondence.	4	Ap
CO-8	know the techniques of business correspondence.	4,6	Ap



**SEMESTER III****CORE V - INDUSTRIAL LAW****Code: 18UBAC31****Hrs/Week : 6****Hrs/Sem : 90****Credits: 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	understand the concept of industrial relations and trade unions	1	Un
CO- 2	describe the industrial disputes & peace	6	An
CO- 3	learn about the strikes and prevention of lockouts	1	Un
CO- 4	understand the labour welfare concepts with statutory & voluntary welfare measures	1,3	Un
CO- 5	know the causes of accidents, safety provisions and occupational hazards, diseases.	3,6	An
CO- 6	investigate solutions to industrial relations problems based on research and assessment of current practices.	4	Ap
CO- 7	inculcate the legislative provisions for child, women and contract labour	3	An
CO- 8	learn the code of conduct	3	Un

Semester III			
Core VI - Business Statistics			
Code:18UBAC32	Hrs/Week:6	Hrs/Sem:90	Credits:4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the meaning, nature and methods of statistics.	1	Un
CO-2	identify population, sample parameter and sampling frame.	6	An
CO-3	determine the sample as a voluntary response sample or a convenience sample.	1,6	An
CO-4	determine the approximate location of the median and quartiles.	6	An
CO-5	describe the characteristics of the correlation coefficient.	4,6	Ap
CO-6	state the assumptions of inference about the regression model.	1	An,Cr
CO-7	measure the degree of economic changes overtime.	3	An,Ap
CO-8	measure the combined fluctuations in a group related variables.	1,3	Cr

**Semester III****Core VII- Organisational Behaviour –I**

<b>Code :18UBAC33</b>	<b>Hrs/Week :6</b>	<b>Hrs/Sem :90</b>	<b>Credits :4</b>
-----------------------	--------------------	--------------------	-------------------

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the importance of organisational behavior and its various approaches.	1	Un
CO -2	learn the role that an individual personality plays in job performance.	4	Un
CO-3	deliver the concepts and principles of perception and learning.	1,3,5	Ap
CO-4	elaborate various motivational theories and its importance.	1,4,5	Un,Ap
CO-5	identify the various leadership styles and skills required for working in groups and organisational climate	1,7,5	An, Ap
CO-6	inculcate the knowledge of Indian leadership styles.	7	Ap
CO-7	gain a brief knowledge on global leaders.	2,5	Un
CO-8	elaborate the perception process	2	Un,Re

**SEMESTER III****Allied V – Women Entrepreneurship**

<b>Code : 18UBAA31</b>	<b>Hrs/Week: 3</b>	<b>Hrs/Sem: 45</b>	<b>Credits: 3</b>
------------------------	--------------------	--------------------	-------------------

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the nature of entrepreneurs.	4	Un
CO-2	understand about women entrepreneurs.	7	Un
CO-3	identify personal attributes that enable the best use of entrepreneurial business idea.	7	Re
CO-4	know about the schemes for women entrepreneurs.	4	An
CO-5	understand project formulation.	3	Un
CO -6	describe project report.	1	Ap
CO- 7	know about the entrepreneurial training.	8	Un
CO- 8	know about the byelaws in business.	4	Un



**Semester III****Core SB – Principles of Marketing****Code :18UBAS31****Hrs/Week :4****Hrs/Sem :60****Credits :4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic principles, concepts, functions and classification of marketing	1,4	Un,Re
CO -2	deliver the importance of social marketing.	3	Un,Re
CO-3	gain sound information on product and pricing strategies.	1	Un,An
CO-4	understand and analyse the product innovation, mix and life cycle.	2,4	Un,An
CO-5	understand and evaluate sales promotion and personal selling its advantages, limitations, purpose and kinds.	1,6	Un,Ev
CO-6	know the various features, benefit, and objections of advertising.	2, 1	Un,Ev
CO-7	gain knowledge on the kinds and functions of advertising.	2,3	Un,Re
CO-8	know about the selection of advertising media.	8	Un,Cr

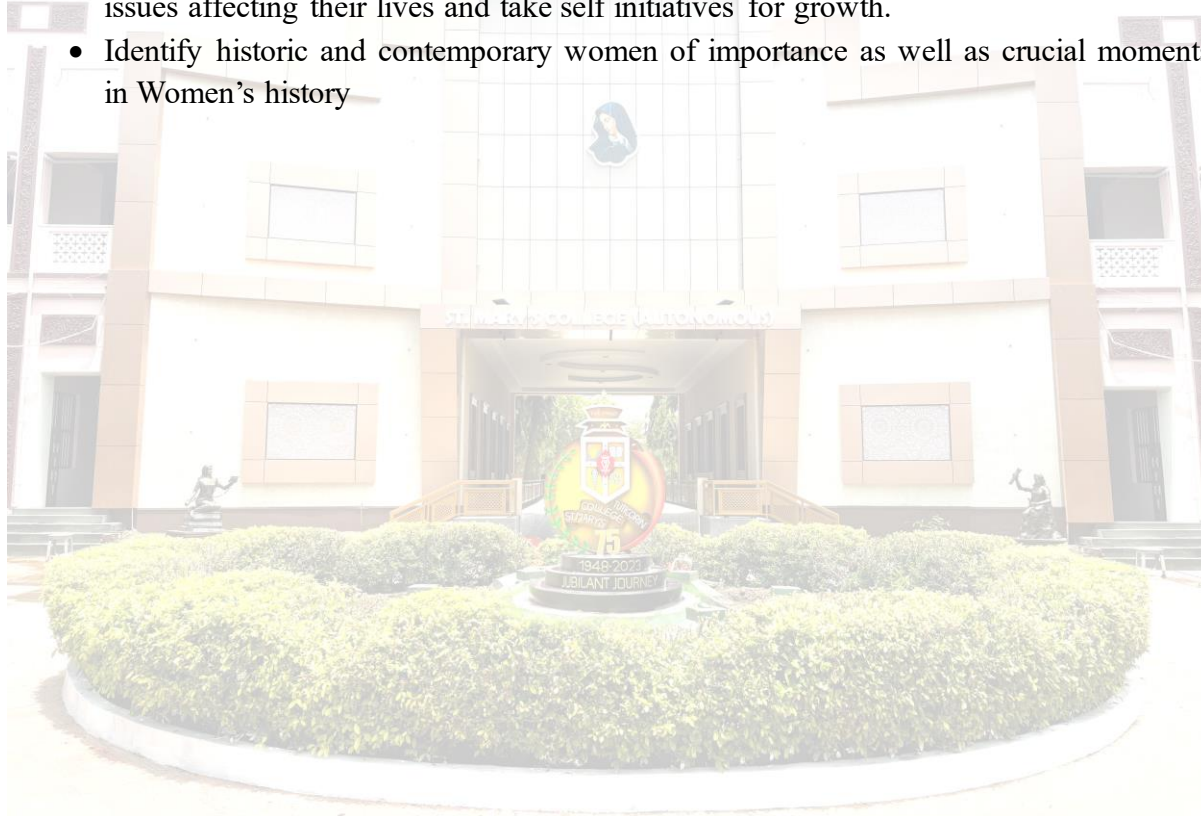
### Semester – III

#### Women's Synergy

<b>Code : 18UAWS31</b>	<b>Hrs/ Week : 2</b>	<b>Hrs/Sem:30</b>	<b>Credits : 2</b>
------------------------	----------------------	-------------------	--------------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER IV****CORE VIII – BUSINESS LAW****CODE: 18UBAC41****Hrs/week: 6****Hrs/sem: 90****Credits: 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basics of Indian contract act governing business	1	Un
CO-2	know about offer, acceptance, revocation and consideration.	3	Un
CO-3	understand the performance of contract and discharge of contract.	3,4	Un
CO-4	describe the ethics and law in business.	3	Un
CO-5	understand the concept of indemnity and guarantee	3	Un
CO-6	know about bailment, pledge and contract of agency	3,4	Ap
CO-7	understand the concept of sale of goods act	8	Un
CO -8	know about delivery of goods	8	Re

Semester IV			
Core IX – Cost Accounting			
Code:18UBAC42	Hrs/Week:6	Hrs/Sem:90	Credits:4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply cost accounting methods , evaluate and apply it in business performance.	2	Ap
CO-2	find out the stock level of the business concern.	5	Re
CO-3	find the method of sharing gains in productivity with workers by rewarding them financially.	5	An,Re
CO-4	compare the revenue of each department with their total cost.	8	Ap,Ev
CO-5	compare the actual cost with estimated cost.	1	An
CO-6	guide the management on the utilisation of resources.	3	Ap,An
CO-7	compute profit of an incomplete contract, cost of contract and work certified.	7	An,Ev
CO-8	understand the knowledge of material and labour cost.	1	Un



**Semester IV****Core X – Organisational Behaviour –II****Code :18UBAC43****Hrs/Week :6****Hrs/Sem :90****Credits :4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the formation of groups and develop effective decision-making frameworks	1	Un
CO -2	know the effectiveness of team work and its impact.	5	Ap
CO-3	know the sound information on power and politics in organisation.	4	Un
CO-4	apply problem solving and critical thinking abilities to initiate, manage and implement changes in organisation.	6	Ap
CO-5	gain knowledge on organisational change and development.	2,4	Un, Ap
CO-6	understand the organisational culture.	3	Un
CO-7	know about organisational effectiveness.	3,5	Re
CO-8	apply knowledge on conflicts management and dispute settlement.	6	Re,Cr

Semester V			
Core XIII – Management Accounting			
<b>Code:18UBAC53</b>	<b>Hrs/Week:6</b>	<b>Hrs/Sem:90</b>	<b>Credits:4</b>

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic concepts of management accounting.	7	Un,Re
CO-2	prepare the financial statement analysis.	8	An
CO-3	understand the long term debt and liquidity level of assets through debt equity and liquidity ratios.	5,7	Cr,Ev
CO-4	calculate the turnover of stock debtors and creditors.	8	Ap
CO-5	prepare fund flow and cash flow statement.	4	Ap,Re
CO-6	know the appropriate position of cash flows and out flows.	8	Cr,Ev
CO-7	understand the basic concepts of break even analysis.	1	Ev
CO-8	calculate the variances of material and labour.	1	Cr



**SEMESTER V****Core Integral – I Research Methodology**

<b>CODE: 18UBAI51</b>	<b>Hrs/week: 5</b>	<b>Hrs/sem: 75</b>	<b>Credits: 4</b>
-----------------------	--------------------	--------------------	-------------------

**Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the objectives of research, types of research and criteria of good research.	1	Un
CO-2	know the research problem and research design.	2	Un,Re
CO-3	gain knowledge of sampling design and methods of data collection.	5	Un,Cr
CO-4	construct the questionnaires and interview schedule.	2	Un,Cr
CO-5	gain insights in the interpretation of data and report writing.	4	Re,Cr
CO - 6	conduct pre-test for doing research.	1,4	Re
CO - 7	understand and undertake pilot study	3	Cr,Ev
CO - 8	write research report.	6	Cr,Ev

Semester V			
Core Integral II – Case Study			
Code:18UBAI52	Hrs/Week:5	Hrs/Sem:75	Credits:4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the overall situations as well as to analyse the company's strategy.	8	Ev
CO-2	know the process key information needed for decision making.	5,7	An
CO-3	identify the company's strength and weakness.	6	An,Ev
CO-4	know the strategically and applied critical thinking.	1	Re
CO-5	understand the decision making techniques.	5,7	An,Ap
CO-6	identity the alternatives in research.	1	Ev
CO-7	understand and evaluate the opinion of others.	1	Un,Ev
CO-8	analyse the criticism in organisation.	4	Ap



## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

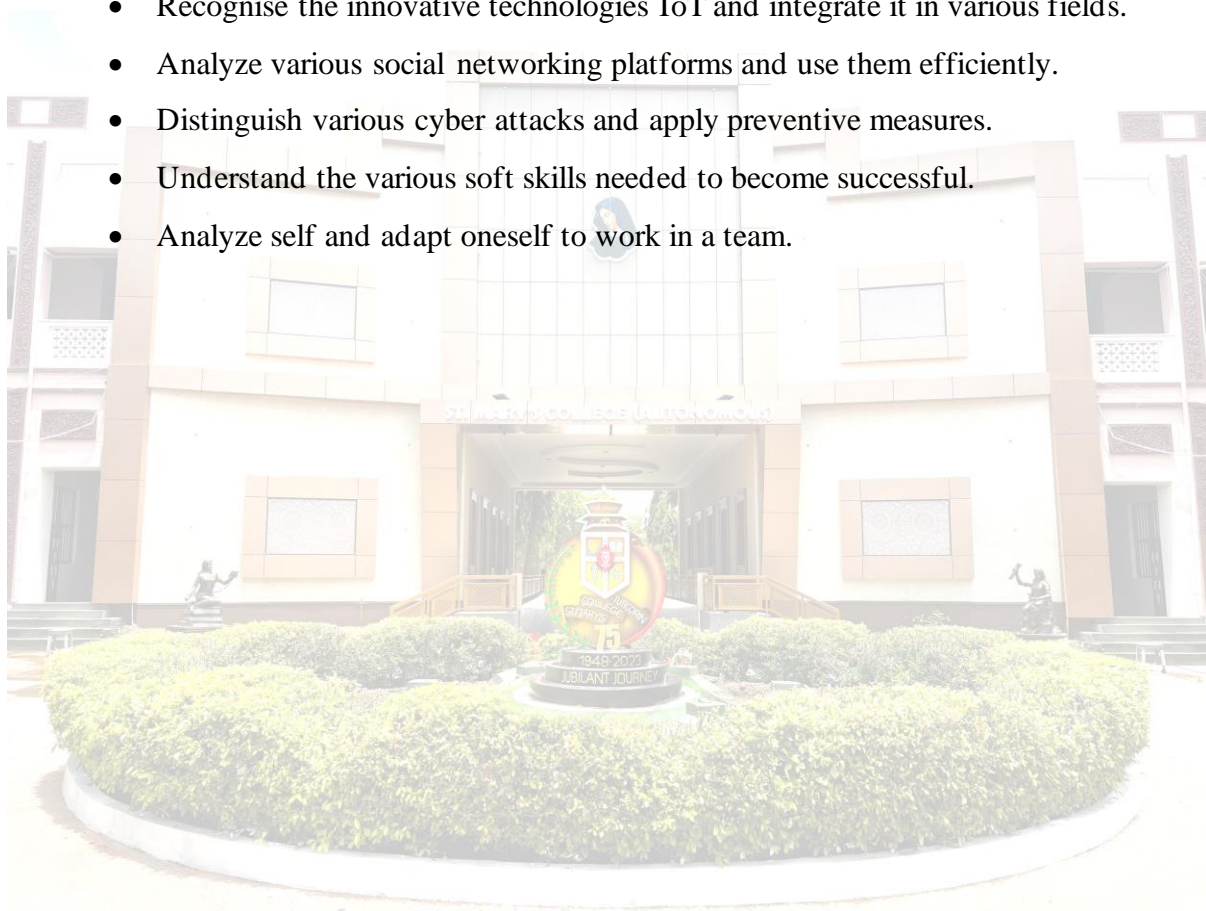
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



**Semester VI****Core XV - Production Management****Code:18UBAC62****Hrs/Week:6****Hrs/Sem:90****Credits:4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand production system.	1	Un
CO-2	analyse the factors relating to plant layout and plant locations.	8	Ev
CO-3	understand the concepts of work study and motion study.	8	Un
CO-4	analyse the production planning and control.	4	An
CO-5	understand the process of routing and scheduling.	1,3	Un
CO-6	understand the objectives of quality control.	3,6	Un
CO-7	gain knowledge on the basic concepts of quality certification.	5,7	Un
CO-8	understand the objectives and importance of material management.	1,3	Un

**Semester VI****Core XVI – Financial Management****Code:18UBAC63****Hrs/Week:6****Hrs/Sem:90****Credits:4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	enhance the practical and applied aspects of capital	1	Un,Ap
CO-2	calculate the credit period of the business	8	Ap
CO-3	find out the short term and long term solvency of a business.	8	An
CO-4	ensure a proper system of communication at all levels of management.	5,7	Cr
CO-5	utilize the capital more economically	1,3	Un,Ap
CO-6	check and evaluate actual results.	6	Ev
CO-7	prepare both operating and financial budget.	3,6	Cr,Ap
CO-8	analyse the relationship between the cost volume and profit	6	An

**Semester VI****Core Integral III - Banking Practices****Code : 18UBA161****Hrs/Week : 5****Hrs/Sem : 75****Credit : 4****Course Outcome:**

CO. NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand about the banker and customer	1,3	Un
CO-2	know about the types of deposits	4,6	Un
CO-3	identify loans and advances	1,2,7	Re
CO-4	understand the different approaches to technological change.	2	Un
CO-5	understand the different modes of charging security.	5	Un
CO-6	understand the basic concepts of electronic banking.	1,5	Un
CO-7	understand and analyse the types of e-banking services.	1,5	Un
CO-8	gain knowledge on benefits and constraints of banking	2,5	Ap



**Semester VI****Core Integral –IV Entrepreneurial Development Programme**

<b>Code : 18UBAI62</b>	<b>Hrs/Week: 7</b>	<b>Hrs / Sem : 105</b>	<b>Credits : 4</b>
------------------------	--------------------	------------------------	--------------------

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	know the basic concept of entrepreneur & their roles.	1	Un
CO-2	understand the importance of entrepreneurship to the society	1,3	Un
CO-3	gain the information on women entrepreneurship and their barriers faced.	4	Re
CO-4	gain knowledge on agencies dealing with entrepreneurs.	2,3	Un
CO-5	understand the roles of small scale industries in economic development.	1,2	Ev
CO-6	analyse tax concessions to small industries in rural and backward areas.	4	An
CO-7	understand project identification and prepare project report.	8	Un
CO-8	know and apply the entrepreneurial development programme.	1,4	Ap

Semester I			
Core – I		Principles of Management	
Course Code:21UBAC11	Hrs/Week:5	Hrs/Semester: 75	Credits:5

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic principles, nature and levels of management.	1,4	Un
CO-2	understand the scientific approaches of management	4	Un
CO-3	know the importance of planning, its procedures and limitations.	1	Cr
CO-4	analyze the organizational structure and span of control with power and authority.	2,3,5	An
CO-5	understand the steps in staffing and directing and controlling.	1,8	Un
CO-6	identify the difference between power and authority.	7	Re

Semester I			
Core II		Accounting for Managers	
Course Code:21UBAC12	Hrs/Week:5	Hrs/Sem.:75	Credits:4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	apply cost accounting methods, and gain knowledge in preparation of books of accounts.	2,6	Ap,Cr
CO-2	have an effective understanding of analysis of depreciation and to apply the knowledge to prepare the final accounts of sole trader	1, 9	Cr, Ap,An
CO-3	understand the knowledge of material and labour cost.	1	Un
CO-4	employ critical thinking and skills to analyze financial data.	9	Re
CO-5	prepare cash and fund flow statement of accounts.	1, 9	Ap, Ev
CO-6	find the method of sharing gains in productivity with workers by rewarding them financially	5	An, Re

## SEMESTER I

### Part IV Professional English for Management - I

Course Code:21UBAPE1	Hrs/Week: 2	Hrs/Sem: 30	Credits :2
----------------------	-------------	-------------	------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	recognize their own ability to improve their own competence in using the language.	1,4	Un
CO – 2	understand the importance of reading for life	3	Un
CO – 3	read independently unfamiliar texts and understand the importance of writing in academic life	1,2,4,5	Un
CO – 4	write simple sentences without committing error of spelling or grammar	1,8	Ap
CO - 5	demonstrate reading and writing skills and to develop critical thinking skills	2,4,8	Ap,Cr
CO - 6	know the difference between brainstorming and brainwriting	1,8	Un,Ap





## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

Semester II			
Core III		Organisational Behaviour	
CourseCode :21UBAC21	Hrs/Week :5	Hrs/Sem :60	Credits :4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the importance of organisational behavior and its various approaches.	1	Un
CO -2	learn the role of each individuals in job performance.	4	Un
CO-3	deliver the concepts and principles of perception and learning.	1,3,5	Ap
CO-4	elaborate various motivational theories and importance of group behaviour and team building.	1,4,5,7	Un,Ap
CO-5	identify the various leadership styles and skills required for working in groups and organisational climate and to study the conflicts and culture	1,7,5	An, Ap
CO-6	inculcate the knowledge on group behavior and team building	7	Ap

Semester II			
Core IV		Business Statistics	
Course Code:21UBAC22	Hrs/Week:5	Hrs/Sem:75	Credits:4

**Course Outcome:**

CO.No.	Upon completion of this course- students will be able to	PSO addressed	CL
CO-1	understand the meaning- nature and methods of statistics.	1	Un
CO-2	identify population- sample parameter and sampling frame.	6	An
CO-3	determine the sample as a voluntary response sample or a convenience sample.	1-6	An
CO-4	determine the approximate location of the median and quartiles.	6	An
CO-5	state the assumptions of inference about the regression model.	1	An,Cr
CO-6	measure the degree of economic changes overtime and combined fluctuations in a group related variables..	1,3	An, Ap, Cr



## SEMESTER II

### Part IV Professional English for Commerce & Management - II

CourseCode:21UBAPE2	Hrs/Week: 2	Hrs/Sem: 30	Credits :2
---------------------	-------------	-------------	------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	understand the emailing concept in business	2	Un
CO – 2	know the different modes of online communication	1,2	Un
CO – 3	draft letters pertaining to business activities	4,6	Ap,Cr
CO – 4	demonstrate speaking skills and presentation skills	3,6,8	Ap,Cr
CO – 5	prepare power point presentations	1,8	Ap,Cr
CO - 6	use language for speaking with confidence in an intelligible and acceptable manner	1,2,8	Un ,Ap





**SEMESTER III****Core V****Business Economics****Course Code : 21UBAC31****Hrs/Week : 6****Hrs/Sem : 90****Credits : 4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of economics	1,3,5	Un
CO-2	learn about the concept of production and cost function	5	Un
CO-3	an awareness of market structure and competition	8	Ap
CO-4	evaluate the elements of money and inflation and national income	1,2,3	Ev
CO-5	exhibit ability to perfect competition	9	Un, Ap
CO-6	gain a knowledge of fundamentals of economics	1,5	Ap



SEMESTER III			
Allied III	Banking Practices		
Course Code:21UBAA31	Hrs/Week: 4	Hrs/Sem: 60	Credits :4

**Course Outcome:**

CO. NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	understand about the banker and customer	1, 3	Un
CO - 2	know about the types of deposits	4, 6	Un
CO - 3	identify loans and advances	1, 2 , 7	Re
CO - 4	understand the different approaches to technological change and to study the electronic banking.	2, 5	Un, Cr
CO - 5	understand the different modes of charging security and to study the benefits and constraints of banking.	2, 5	Un, Ap
CO - 6	understand the basic concepts of electronic banking.	1, 5	Un

**SEMESTER III****NME I****Introduction to Management****Course Code:21UBAN31****Hrs/Week:2****Hrs/Semester:30****Credits:2****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>C L</b>
CO-1	understand the meaning, nature and basic concepts of management.	1	Un
CO-2	understand the evolution of management	2	Un
CO-3	describe the diversity of management	4, 6	An
CO-4	understand the classical management theories of management and its functions	1,2, 4, 7	Un, Ap
CO-5	understand the behavioural and modern management theory and to study the qualities of managers	1,2, 4, 7	Un, An, Ap
CO-6	understand the functions performed by management	1,4,7	Ap

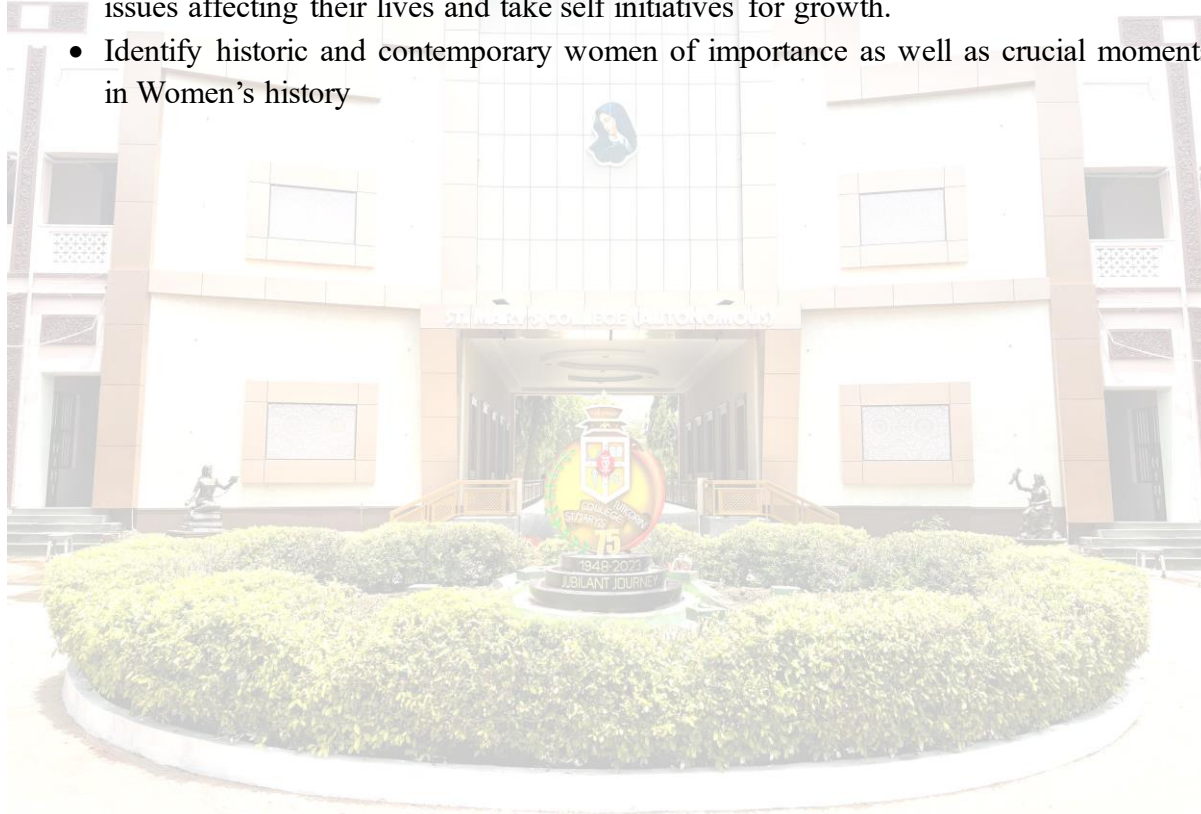
### Semester – III

#### Women's Synergy

Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





## SEMESTER IV

### Core – VI                      Quantitative Techniques for Managers

<b>Course Code:21UBAC41</b>	<b>Hrs/Week:6</b>	<b>Hrs/Semester: 90</b>	<b>Credits:4</b>
-----------------------------	-------------------	-------------------------	------------------

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the meaning, nature and methods of data collection.	1	Un
CO-2	determine the approximate location of transportations problems.	6	An
CO-3	determine the graphical solutions to maximize the problem	4, 6	Ap
CO-4	determine the models in operation research	1, 6	An
CO-5	determine the applications operation research	6	An
CO-6	know about the techniques in probability	4, 6	Ap



Semester IV			
Allied IV	International Business		
Code : 21UBAA41	Hrs/Week: 4	Hrs/Sem:60	Credit : 4

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	communicate the nature theories and competitive advantages of international business.	3, 4	Un
CO-2	describing the modes of entering into international business-licensing, franchising, exporting and key projects.	4, 6	An
CO-3	elaborate the detailed study on MNC'S-growth, structure, merits and demerits.	5, 8	Ap
CO-4	impart the international marketing Intelligence-sources, characteristics and process of IMI'S	3, 6, 8	An
CO-5	identify the financing foreign Trade-functions of ECGC,EXIM.	1, 4, 8	An
CO-6	elaborate the procedure to be implemented for STC,AEPC,TTCI	3, 8	Ap

**SEMESTER IV****Core SB****Office Automation****Course Code: 21UBAS41****Hrs/Week : 4****Hrs/Sem : 60****Credits : 4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic nature, scope, duties and responsibilities of office management	1,4	Un
CO-2	understand scientific approach of office management	4	Un
CO-3	know the importance of Office system procedures and effective communication process	1	Cr
CO-4	analyze the office forms, design, management and control and to identify the difference between Electronic Records and Paper Analog	2,3,5, 7	Re, An
CO-5	understand office environment and building accommodation, layout and environment	1,5, 8	Un, Re, Ev
CO-6	evaluate modern tendencies in concept of office records management	5	Ev

SEMESTER IV			
NME II		Entrepreneurship	
Course Code: 21UBAN41	Hrs/Week: 2	Hrs/Sem: 30	Credits: 2

### Course Outcome

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	know the basic meaning of entrepreneur.	1	Un
CO-2	gain knowledge on classifications of entrepreneurs	1,3	Ap
CO-3	understand about starting a business	3,6	Un
CO-4	familiarize with project appraisal and to gain knowledge on project report	1,3, 6	Un, Ap
CO-5	understand about the functions of DIC and to study the importance and challenges of women entrepreneurship.	1, 3,4, 5	Un, An
CO-8	know the challenges faced by women entrepreneur	1,6	Un



SEMESTER V			
Core VIII		Research Methodology	
Course Code:21UBAC51	Hrs/Week:6	Hrs/Sem: 90	Credits:4

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the objectives of research, types of research and criteria of good research.	1	Un
CO-2	know the research problem and research design.	2	Un, Re
CO-3	gain knowledge of sampling design and methods of data collection and to construct the questionnaires and interview schedule.	2,5	Un, Cr
CO-4	gain insights in the interpretation of data and report writing.	4	Re, Cr
CO-5	conduct pre-test for doing research.	1,4	Re
CO-6	understand and undertake pilot study and to write research report.	3,6	Cr, Re

## SEMESTER V

### Core IX Entrepreneurial Development

**Course Code : 21UBAC52**

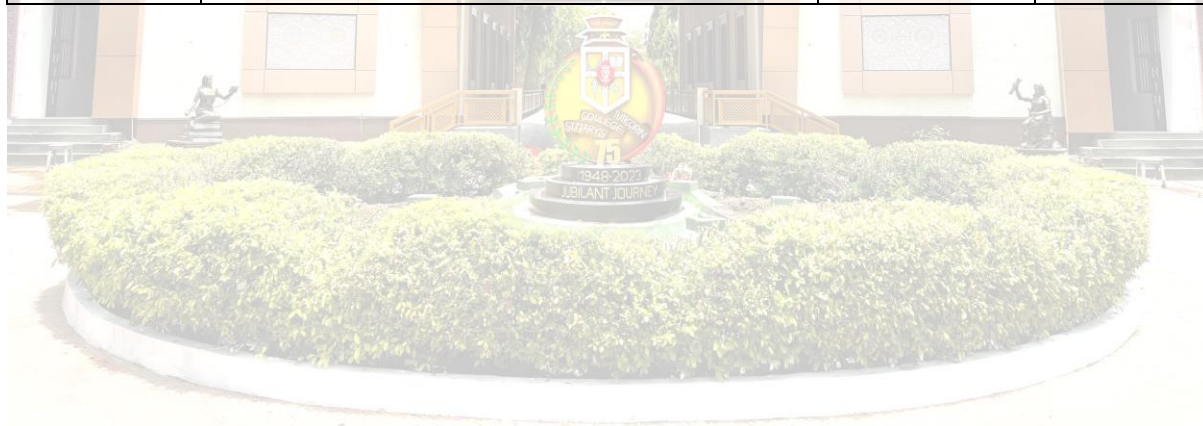
**Hrs/Week: 6**

**Hrs / Sem : 90**

**Credits : 4**

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the basic concept of entrepreneur & their roles.	1	Un
CO-2	understand the importance of entrepreneurship to the society	1,3	Un
CO-3	gain the information on women entrepreneurship and their barriers faced.	4	Re
CO-4	gain knowledge on product identification, agencies and its roles.	2,3, 8	Un, An, Ap
CO-5	understand the roles of small scale industries in economic development and to analyse tax concessions in rural areas.	1,2,4	An, Ev
CO-6	analyse tax concessions to small industries in rural and backward areas.	4	An



SEMESTER V			
Core X	Case Study Analysis		
Course Code:21UBAC53	Hrs/Week:5	Hrs/Sem:75	Credits:4

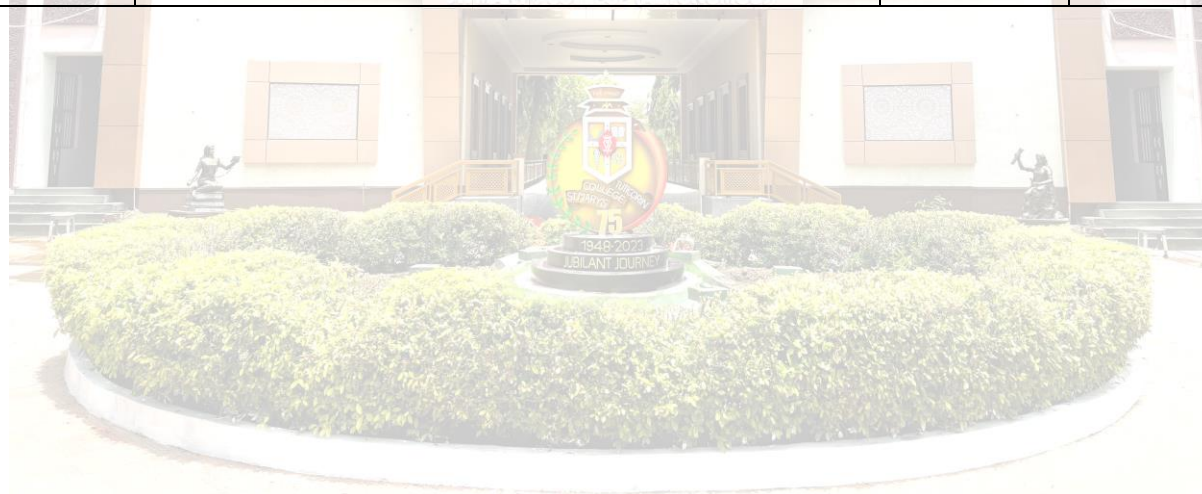
### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the overall situations as well as to analyse the company's strategy.	8	Ev
CO-2	know the process key information needed for decision making.	5,7	An
CO-3	identify the company's strength and weakness.	6	An,Ev
CO-4	know the strategy and critical thinking all the disciplines of management.	1	Re
CO-5	analyse the criticism in organisation and manipulate the decision making techniques.	1,5,7	Un,An,Ap
CO-6	identity the alternatives in research.	1	Ev



**SEMESTER V****Core Elective****IT Skills for Managers****Course Code : 21UBAE51****Hrs/Week : 5****Hrs/Sem : 75****Credits : 4****Course Outcome**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of information Technology	1	Un
CO-2	apply spell and grammar check in Ms Office and to Create word documents with formatting features	3,4,5	Ev,Cr
CO-3	know about Ms Excel in detail for calculations	5	An
CO-4	know about Ms Power Point for presenting company data	5	An
CO-5	gain knowledge in internet applications	6	Cr
CO-6	understand the history and basic concepts of computers	1	Un





### Semester - V

#### Common Skill Based Core

#### Computer for Digital Era and Soft Skills

Code : 21UCSB51

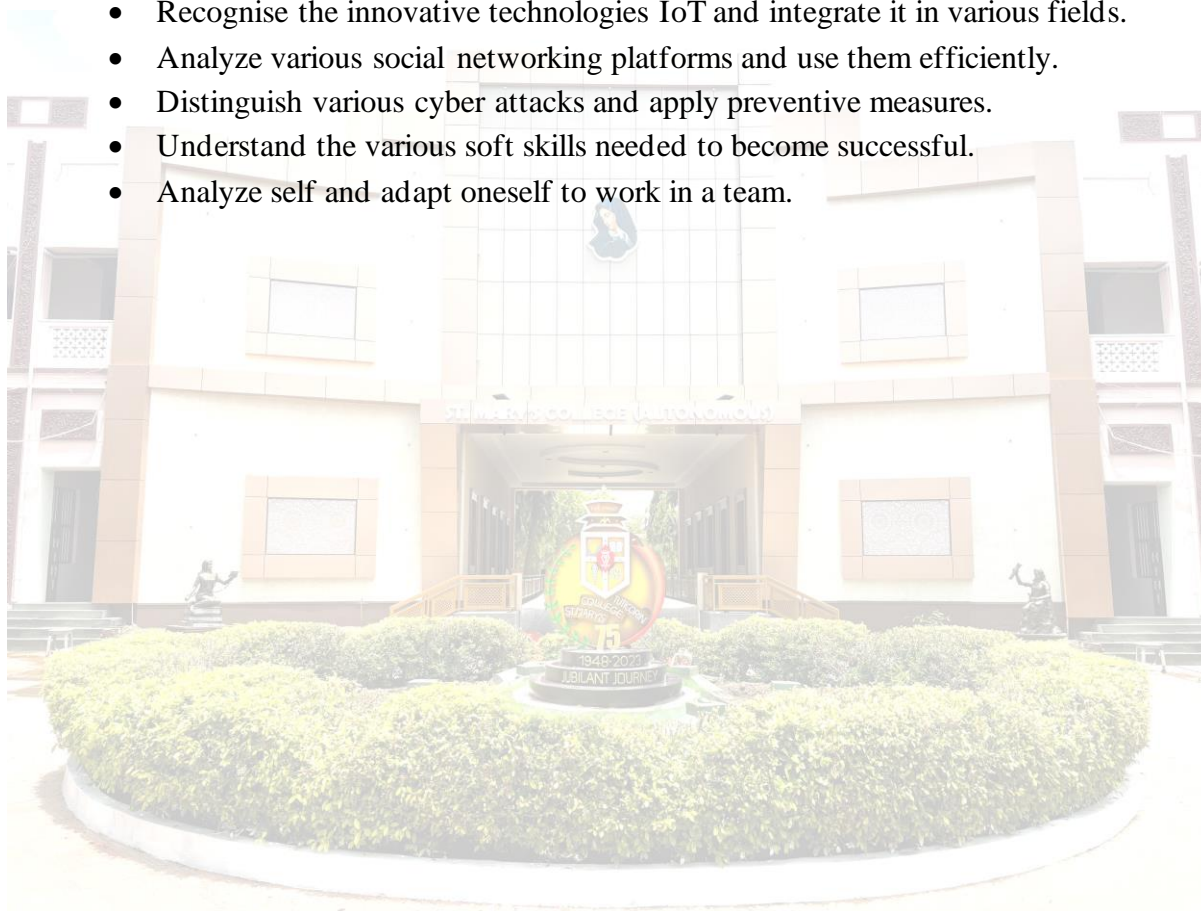
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



## SEMESTER VI

### Core XI

### Digital Marketing

Course Code : 21UBAC61

Hrs/Week : 6

Hrs/Sem : 90

Credits : 4

### Course Outcomes:

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept and different categories of digital marketing	1,3	Un
CO-2	gain knowledge on digital retail business model	1,4	Un, An
CO-3	effective knowledge on E-Payment system	1,3,4	Un, An
CO-4	know the difference between hacking and cracking	1,5	Ap
CO-5	understand the importance of mobile banking applications	1,5,8	Ap
CO-6	apply digital marketing plans to successful companies	6	Ap



## SEMESTER VI

### Core XIII Foreign Trade Import and Export Procedures

Course Code :21UBAC63

Hrs/Week : 6

Hrs/Sem :90

Credits :4

#### Course Outcomes:

CO.No.	Upon completion of this courses, students will be able to	PSO addressed	CL
CO - 1	understand the concepts of domestic and international trade and their difference	1	Un
CO – 2	explain about the general principles of tax	1	Un
CO – 3	determine the Sources of financing for foreign trade	1,3	Un
CO – 4	understand the documentation process for imports and exports	3,6	An
CO – 5	inculcate a basic knowledge about the intellectual property rights	3	An
CO - 6	practice the customs clearance import and export procedures	4	Ap



**SEMESTER VI****Core XIV Management Information System****Course Code: 21UBAC64****Hrs/Week: 6****Hrs/Sem: 90****Credits: 4****Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know about different types of components in information system.	2	An
CO-2	understand and apply executive support system.	2	Ap
CO-3	know about decision support system and internet technologies..	2,4,8	Un,Cr
CO -4	understand the basic technologies used in business.	1	Ap
CO – 5	identify virtual organisations.	4	Ap
CO - 6	understand and apply technology in establishing a business.	8	Ap





## SEMESTER VI

### Core XV Contemporary Issues in Management

<b>Course Code :21UBAC65</b>	<b>Hrs/Week : 6</b>	<b>Hrs/Sem : 90</b>	<b>Credits : 4</b>
------------------------------	---------------------	---------------------	--------------------

#### Course Outcomes:

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of management issues	1	Un
CO-2	evaluate the recent trends in management	4	Ev
CO-3	know about challenges faced by management and financial innovations	5	An
CO-4	create problem solving skill	3,5	Cr
CO-5	know about human resource issues in workplace	1,5	Un
CO-6	understand the psychological problems of workers	1	Un



**Programme: B. Sc. Botany**

<b>SEMESTER - I</b>			
<b>Core I</b>		<b>Cell Biology and Genetics</b>	
<b>Code: 18UBOC11</b>	<b>Hrs / Week: 4</b>	<b>Hrs / Sem: 60</b>	<b>Credits: 4</b>

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>C L</b>
CO-1	understand the structure and function of basic organelles of plant cells	1	Un
CO-2	describe the structural organization and transport function of the plasma membrane	2	Un
CO-3	identify the non living inclusions and their significance	4	Re
CO-4	reveal morphogenetic events through mitosis and meiosis	2	Re
CO-5	understand theories of heredity through Mendel's hybridization experiment	2,4	Un,Cr
CO-6	draw checker boards and predict the outcome of offspring of hybridization	8	Ap
CO-7	infer inter allelic and inter genic interaction in determination of specific characters including blood groupings in man	4	Re,Un
CO-8	comprehend the polygenic inheritance and mechanism of sex determination in plants	4	An

**SEMESTER – I****Core II****Algae and Bryophytes****Code:18UBOC12****Hrs / Week: 4****Hrs / Sem: 60****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	find out the general characteristics of Algae and Bryophytes and structure of them.	1	An
CO-2	evaluate the importance of algae and Bryophytes and their role in everyday life and environment.	7	Ev
CO-3	distinguish mosses and thallose liverworts	3	An
CO-4	compare and contrast different classes of algae and bryophytes	2	Un
CO-5	identify Algae and Bryophytes samples collected from the field	8	Re
CO-6	distinguish life cycle pattern in different groups of Algae and Bryophytes	7	Ap
CO-7	understand the criteria behind the classification of Algae and Bryophytes	1	Un
CO-8	apply the knowledge for self employability	6	Ap

**SEMESTER I****Allied I Animal Biology**

<b>Code: 18UZOA11</b>	<b>Hrs/Week : 4</b>	<b>Hrs/Sem : 60</b>	<b>Credits : 3</b>
-----------------------	---------------------	---------------------	--------------------

**Course Outcome:**

<b>CO.No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquire basic knowledge of animal diversity and its organisation	1	Un
CO-2	compare common and distinctive features of invertebrate phyla	1	Un
CO-3	understand the parasitic adaptations and management of nematodes	1	Un
CO-4	ability to control the insect pests	1	Ap
CO-5	characterize the major classes of subphylum vertebrata	1	Re
CO-6	assess the interaction of organisms with environment and their adaptive mechanism	1, 11	Re
CO-7	distinguish the unique features and evolutionary relationship between each chordate group	1	Cr
CO-8	apply the knowledge of biological diversity to our daily life and conservation of bioresources	1, 11	Ap



SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER - II****Core III****Fungi, Lichens and Plant pathology****Code:18UBOC21****Hrs / Week: 4****Hrs / Sem : 60****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	characterize and identify the diversity of fungal and lichen world and their adaptations	1	Un
CO-2	Identify fungal specimens microscopically	2	Ap
CO-3	Identify major groups of fungi and lichens based on morphology and anatomy	2	Ap
CO-4	understand and explain the ecological roles and trophic modes of major Fungal and Lichen groups	5	Ap
CO-5	evaluate the importance of Fungi and Lichens , their role in everyday life and environment	7	Ev
CO-6	understand the various plant diseases and their impact on agriculture	7	Un
CO-7	identify symptoms and diagnose different plant diseases and methods to control.	6	Ap
CO-8	identify pathogenecity with their specific symptoms	4	Ev

SEMESTER - II			
Core IV		Anatomy and Embryology	
Code:18UBOC21	Hrs / Week: 4	Hrs / Sem: 60	Credits: 4

**Vision:**

To understand the fundamental organization of tissues and developmental events of plants

**Mission:**

To understand the developmental process from flower to fruit

To gain knowledge on the histological architecture of plants

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	classify meristems and explain the organization of root apex	2	Ev ,An
CO-2	distinguish meristematic and permanent tissues	8	An
CO-3	compare the secondary growth in dicot stem and root(normal and anomalous)	3 , 7	An
CO-4	describe the structure of a microsporangium and pollengrains and	1 ,3	Un , E
CO-5	Explain the structure and development of male gametophyte.	1	Un
CO-6	Explain the structure and development of megasporangium	2 , 3	Ev
CO-7	understand fertilization and double fertilization.	2	Un
CO-8	differentiate dicot embryo from monocot embryo.	2 ,3	An

**SEMESTER II****Allied II Genetics, Developmental Biology and Physiology****Code: 18UZOA21****Hrs/ Week : 4****Hrs/ Sem : 60****Credits : 3****Course Outcome :**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	compare and contrast the Mendelian inheritance and its modifications	4	An
CO - 2	highlight the importance of genetics and welfare of human society.	11	Ev
CO - 3	acquire competence skills in developmental process	1	Un
CO - 4	learn the technical skills in developmental biology	3	Re
CO - 5	understand the basic principles of digestion	2	Un
CO - 6	create knowledge about the nervous coordination	7	Cr
CO - 7	analyze the functions of urinary tract of human	9	Ap
CO - 8	comprehend the structure and functions of human reproductive system	9	Ap

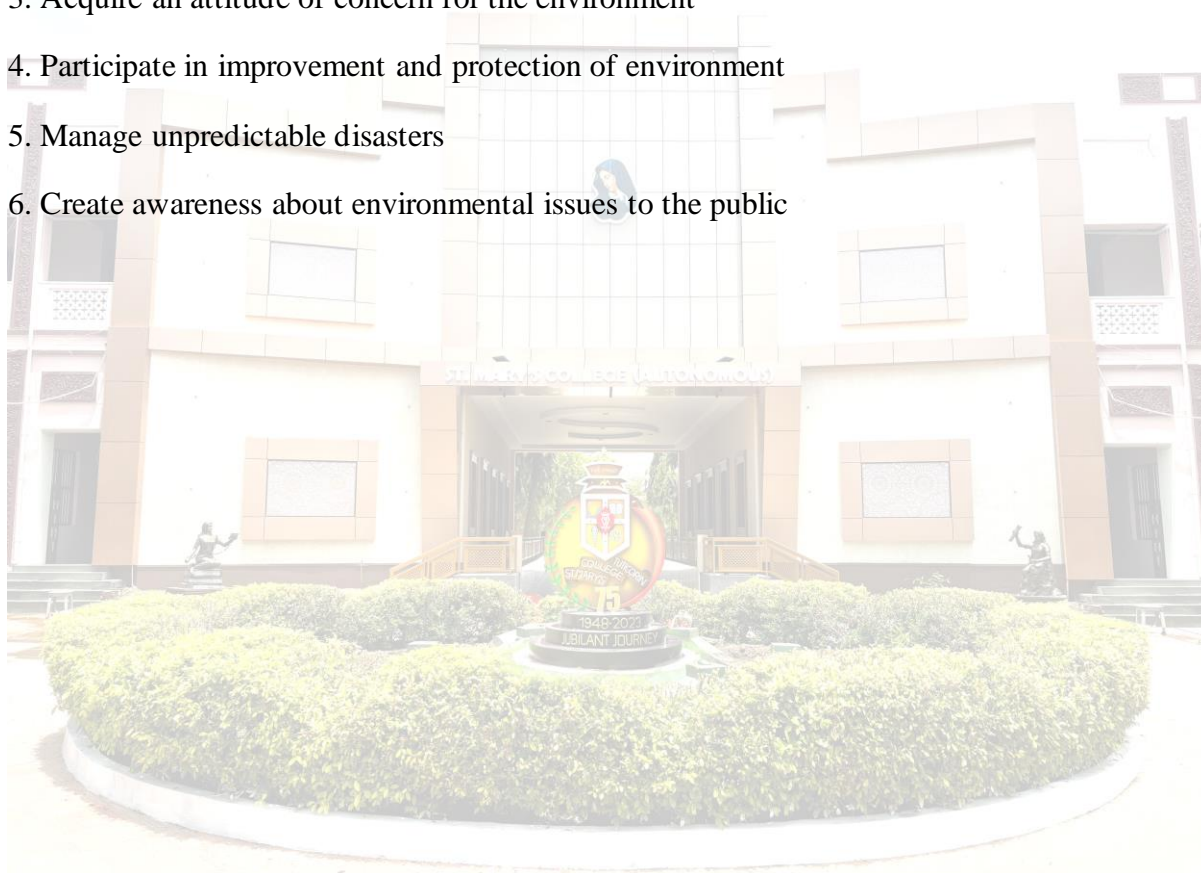


Semester – II			
Environmental Studies			
Code : 18UAEV21	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2

### Course Outcomes:

**Upon completion of this course, the students will be able to**

1. Recognize the biotic and abiotic components of ecosystem and how they function
2. Use natural resources more efficiently and know more sustainable ways of living
3. Acquire an attitude of concern for the environment
4. Participate in improvement and protection of environment
5. Manage unpredictable disasters
6. Create awareness about environmental issues to the public



**SEMESTER – III****Core V****Pteridophytes, Gymnosperms and Paleobotany****Code: 18UBOC31****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome**

CO.No.	Upon completion of this programme, students will be able to	PSO addressed	CL
CO-1	summarize the general characters of Pteridophytes and Gymnosperms	1	Cr
CO-2	critically analyse the affinities and differences between Pteridophytes and Gymnosperms and relate them to understand the evolutionary trends	1	Re
CO-3	outline and recall the classification of Gymnosperms and appraise the economic importance of Pteridophytes and Gymnosperms	3	Ev
CO-4	understand the different stages in the life cycle of Pteridophytes and Gymnosperms	2	Un
CO-5	identify the types of fossils and discuss the fossilization process.	2	An
CO-6	relate the geological era with evolution of plants	2	Un
CO-7	learn about some of the fossils of pteridophytes and Gymnosperms	2	Un
CO-8	justify and analyze the evolution of seed plants from pteridophytes	2	Ev

**SEMESTER III****Allied****Allied Chemistry - I****Code : 18UCHA31****Hrs/Week : 4****Hrs/ Sem : 60****Credit : 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this programme, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	account for the filling of electron in orbitals and to inscribe the electronic configuration of elements	1, 3	Re, Ap
CO 2	recognize conductors, insulators and semiconductors	1, 3	Re
CO 3	adapt a method to purify organic compounds and to estimate the amount of Carbon, Hydrogen and sulphur in a sample	1,2, 3,7	Un
CO 4	evaluate molecular weight of a chemical compound	6	Cr
CO 5	correlate the importance of colloids in day to day life and to develop a basic understanding of emulsions	1, 5	An
CO 6	reframe glucose into fructose and vice versa and to identify protein by their colour reactions	1	Cr, An
CO 7	record the steps involved in Hoffmann's exhaustive Methylation	6	Re
CO 8	explain isoprene rule and its significance	1	Un

Semester III			
NME I		Plant Resource Utilization	
Code: 18UBON31	Hrs/week:2	Hrs/Semester: 30	Credit: 2

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire knowledge of useful plant parts	3	Re
CO-2	to acquire the knowledge on geographical area of cultivation, production and marketing variable food crops and their finished goods	1	Un
CO-3	able to differentiate importance of tropical and temperate fruits for human well being	3	Ap
CO-4	able to access the value of spices, condiments and beverage crops in international trades and confectionery industries	3	Ev
CO-5	understand the wealth of cash crops in India and their importance in improving trade and industrial growth	3	Ev
CO-6	comment on fibres as an alternative source of plastics	5	Un
CO-7	explain the use of beverages and their production	6	Un
CO-8	able to learn about the cultivation practices and extraction of oil from oil crops	6	Cr



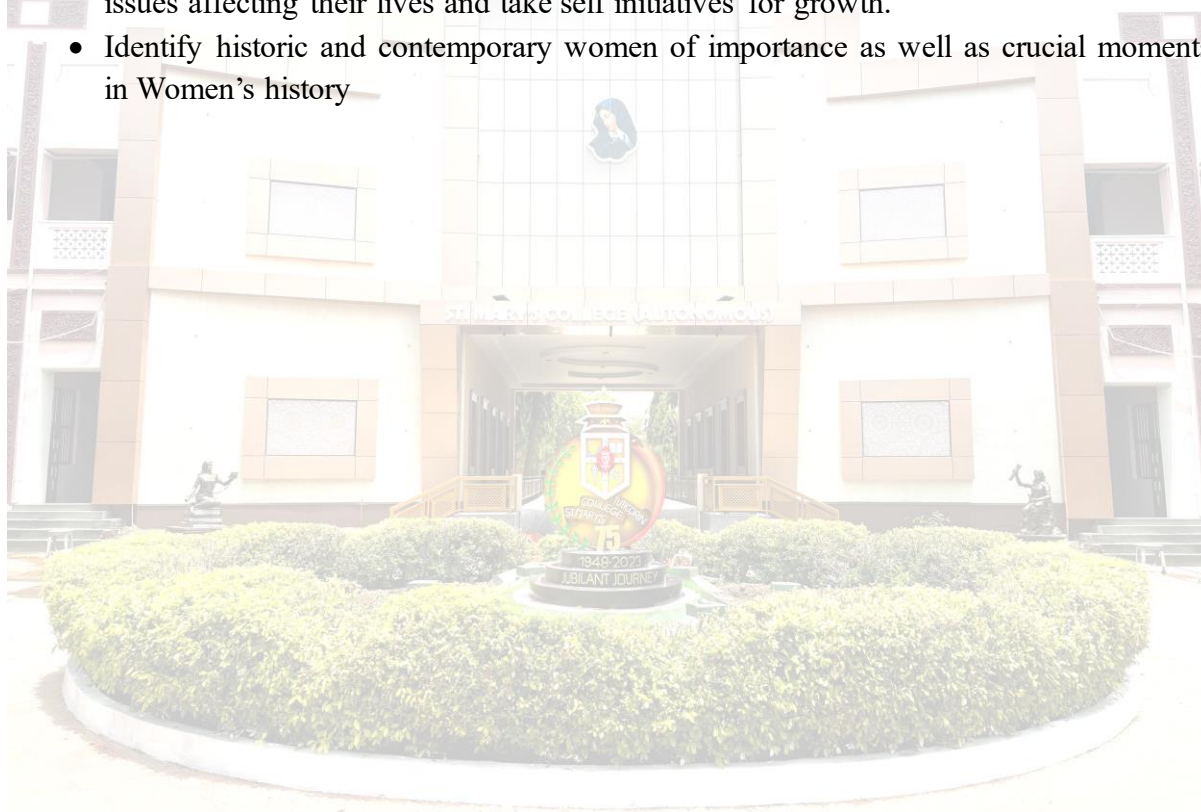
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



## SEMESTER IV

### Core VI

### Taxonomy of Angiosperms

**Coe: 18UBOC41**

**Hrs/week: 4**

**Hrs/Semester: 60**

**Credit: 4**

### Course Outcome :

CO.No.	Upon completion of this programme, students will be able to	PSO addressed	CL
CO-1	describe the general principles of classification	1	Cr
CO-2	Apply binomial nomenclature for species naming	4	Un
CO-3	learn floristic features in technical term and extend an illustrious explanation on floral components of the flower.	6	Ap
CO-4	familiarise and evaluate the economic importance of angiosperms	6	Ev
CO-5	attain field experience and preparation of herbaria	6	An
CO-6	develop skill in plant identification.	6	Ap
CO-7	gain the art of plant collection and preservation.	8	Cr
CO-8	Compare and contrast different families of angiosperms	1	An

**SEMESTER IV****Allied****Allied Chemistry - II****Code :18UCHA41****Hrs/Week : 4****Hrs/ Sem : 60****Credit : 3****Course Outcome**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	explain the methods of purification of ores and to differentiate ores and minerals	1	An
CO 2	know the extracting methods , properties and uses of titanium, vanadium ,thorium and their compounds	1	Re,Un
CO 3	synthesise some industrially important organic compounds such as Freon , rayon , polyester , nylon , thiokol Dacron	1, 5	Ev
CO 4	classify fuels and know its industrial uses	1, 4	Ap
CO 5	identify the techniques for sterilising water for domestic use	1, 4	An
CO 6	know the basics of abrasives	1,4	Re
CO 7	describe the role of micro and macro nutrients in plant growth and Identify the implication of biofertilizers on soil	1,5	Un
CO 8	classify fatty acids and analyse Cholesterol and know its biochemical significance	1	Ap, An

**SEMESTER V****Core VII****Biotechnology ( Common Core )****Code: 18UBCC51****Hrs/Week:4****Hrs/Sem: 60****Credits: 3****Course Outcome**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describe different cloning vehicles and learn the different type of vectors	1	Kn, Un
CO-2	gain knowledge about techniques of biotechnology.	2	Un
CO-3	summarise the different techniques in animal biotechnology	2	Un, An
CO-4	compare the various techniques in plant and animal biotechnology	4	Cr
CO-5	enumerate cell culture, organ culture and stem cell culture and point out implications in health care	6	Kn, An
CO-6	distinguishes methods of alleviating environmental pollution and understand the synthesis of industrial products	5	An
CO-7	relate biotechnology and its benefits to mankind	6	Ap, Ev
CO-8	design, conduct experiments, analyze and interpret data for investigating problems in biotechnology and allied fields	7,8	Ap



**SEMESTER V****Core VIII****Microbiology**

<b>Code: 18UBOC52</b>	<b>Hrs/week: 5</b>	<b>Hrs/semester: 75</b>	<b>Credits: 4</b>
-----------------------	--------------------	-------------------------	-------------------

**Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this programme, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	realise the history and scope of microbiology	3	Un
CO-2	understand the structure and growth characteristics of microorganism that enabling the learner to identify and classify microorganisms by themselves	4	Cr
CO-3	use various microbiological techniques to isolate, characterize and identify bacterial and viral pathogens of plants.	6	An
CO-4	provide a thorough knowledge about the microbes causing human diseases , their symptoms and preventive measures	4	Ap
CO-5	understand the role of microorganisms in biotechnology, fermentation, medicine and other industries for human well being	4	Ap
CO-6	discuss the role of microorganism in food, milk and water	4	An
CO-7	identify and control food borne disease and food spoilage	4	An
CO-8	test the quality of milk and enumerate microorganisms found in milk and soil	6	Ev

Semester V			
Core IX		Biochemistry	
Code: 18UBOC53	Hrs/week: 5	Hrs/ Semester: 75	Credit: 4

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the types of chemical bonds involved in the structure of biomolecules and basic concepts of acid, base and buffer	2	Un
CO-2	classify carbohydrates of different domain based on their physical and chemical organization	2	An
CO-3	understand the structure and properties of amino acids	2	Un
CO-4	describe the structural details and properties of protein	2	Un
CO-5	explain the nomenclature, mechanism of enzyme activity	2,4	Un
CO-6	discuss the sources of vitamins and symptoms specific to vitamin deficiency in human beings.	4	Re
CO-7	categorize lipids based on their structure	2	Un
CO-8	acquire skill in qualitative and quantitative estimation of the biomolecules	6	Ap

**SEMESTER - V****Core Integral I****Biostatistics and Biological Techniques****Code: 18UBOI51****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamentals of statistical analysis	4	Un
CO-2	apply the learned procedure for collecting data, presenting data and analyze the same.	6	An
CO-3	able to interpret the results and find solution to the problems.	8	Ev
CO-4	understand the principles, working methodology and applications of instruments used in biology	4	Cr
CO-5	apply micro techniques for permanent mounting of biological samples.	8	Cr
CO-6	apply the learned techniques to carry out basic research in biology.	4	Ap
CO-7	understand the importance of data collection and their organization	8	Un
CO-8	communicate the results of statistical analyses accurately and effectively	8	Ev

**SEMESTER V****Core Integral II****Pharmacognosy****Code:18UBOI52****Hrs/week:4****Hrs/semester: 60****Credit: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define and identify the more valuable medicinal plants based on their pharmaceutically active compounds	3	Ap
CO-2	formulate medicinal product and apply the knowledge for proper storage and distribution	8	Ap
CO-3	assess and evaluate the purity of herbal medicine.	7	Ev
CO-4	elaborate the cultural practices of important medicinal plants.	6	Re
CO-5	assess the trade opportunities of medicinal plants.	6	Ap
CO-6	define, classify and explain the importance of herbal medicine.	6	Re
CO-7	identify the crude drugs by morphological, organoleptic and histological characters.	6	Un
CO-8	know and explain the important phytoconstituents of therapeutic value.	6	Un



## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

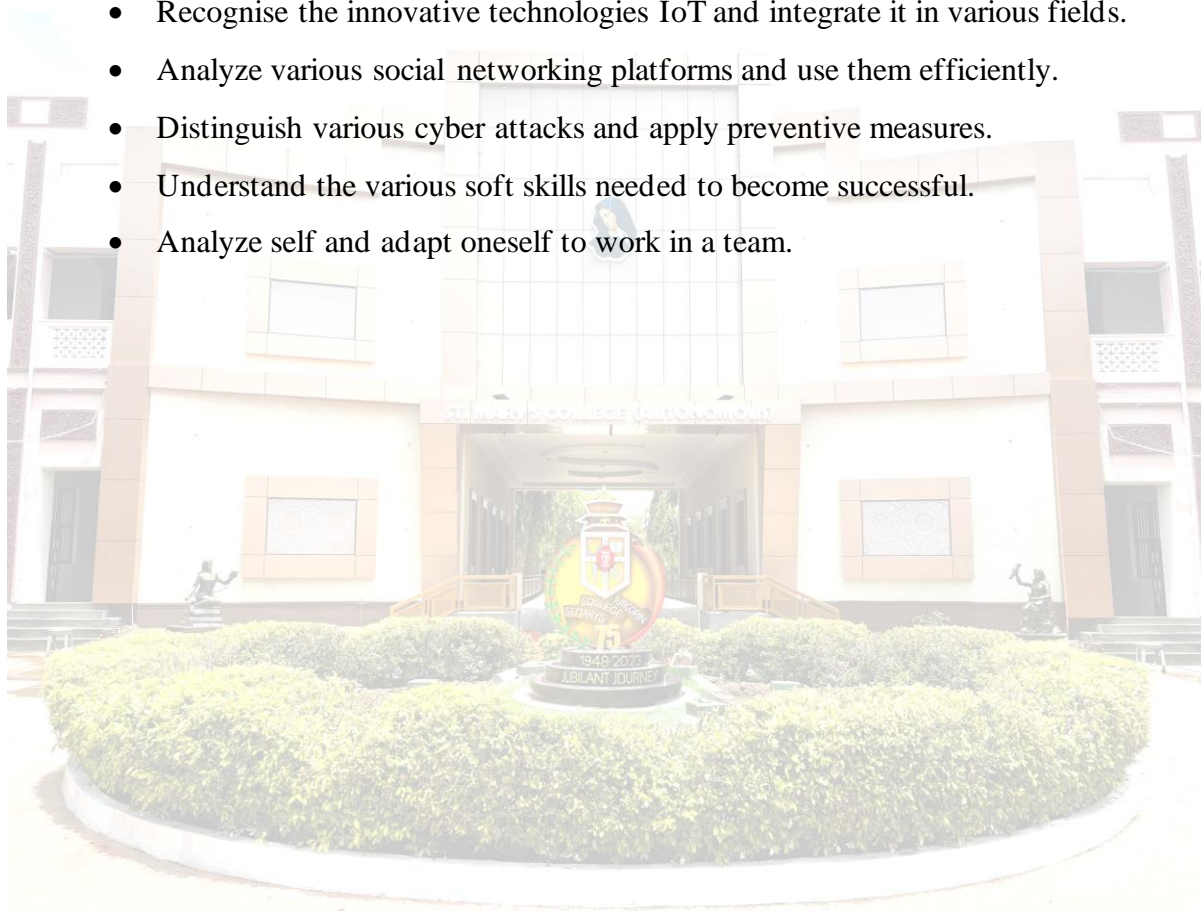
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



Semester VI			
Core X		Plant Physiology	
Code: 18UBOC61	Hrs/week: 5	Hrs/ Semester: 75	Credit : 4

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the water relation and root structure and functions that influence the transfer of inorganic nutrients from the soil into the plants	2,3	Un
CO-2	assess the symptom specific nutritional deficiencies and discuss the need of fertilisers for crop improvement	2	An,Ap
CO-3	analyse the mechanism of their assimilation of inorganic molecules into organic molecular components.	3	Un
CO-4	analyse light enhanced photochemical reactions that culminates in the synthesis of ATP and NADPH and fixation of carbon dioxide into organic compounds	3	Un
CO-5	describe respiration with its associated carbon metabolism and releasing of energy stored in chemical bonds in a controlled manner for cellular use	3	Re,Cr
CO-6	investigate plant's functions and adaptations under altered environmental conditions	2	Cr
CO-7	comment on the hormone controlled and light mediated morphogenetic events in plants	2	An
CO-8	design and conduct scientific experiments and analyse the data critically	4,8	Cr

Semester VI			
Core XII		Ecology and Phytogeography	
Code;18UBOC63	hrs/week:4	Hrs/semester: 60	Credit : 4

### Course Outcome

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	reveal the range of plant diversity in terms of structure, function and their environmental relationships.	5	Un
CO-2	describe the climatic and edaphic factors and ecological succession	5	Un
CO-3	categorize the plants based on adaptation	3	An
CO-4	address the global environment crisis and the strategies applicable for environmental problem mitigation	7	Ev
CO-5	learn the global level environmental summit organized that focused for sustainable future	7	Cr
CO-6	know the importance of remote sensing in finding the current status of global health	7	Cr
CO-7	recognize the causes of environmental problems	7	Un
CO-8	discuss ecological issues and concept	5	Re

**SEMESTER - VI****Core Integral III****Molecular Biology and Bioinformatics****Code:18UBOI61****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know chemistry of genetic material and details of its replication at molecular level	2	Un
CO-2	understand the general principles of chromosome organization at different phases of cell cycle	2	Un
CO-3	explain gene regulation mechanisms at various levels by which she can learn how it controls growth and development of an organism	4	Cr
CO-4	know complexity of gene expression in eukaryotes over prokaryotes	3	Un
CO-5	understand vector mediated gene transfer techniques including screening and identification of recombinants	6	Un
CO-6	know the gene cloning tools and their mysteries in success of gene cloning technology	8	Un
CO-7	attain hands on experiences in the techniques associated there of	4	Cr
CO-8	practice the advanced techniques in genetic engineering such as dna sequencing, blotting, dna amplification and fingerprinting	3	Ap



## SEMESTER – I

### Core I      Plant Diversity I (Algae, Bryophytes, Fungi and Lichens)

<b>Course Code: 21UBOC11</b>	<b>Hrs / Week: 6</b>	<b>Hrs / Sem: 90</b>	<b>Credits: 6</b>
------------------------------	----------------------	----------------------	-------------------

#### Course Outcomes:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	illustrate general characteristics of algae, fungi, lichen and bryophytes	1	Un
CO-2	compare and contrast algae, fungi, lichen and bryophytes	2, 3	Un
CO-3	critique the importance of algae, fungi, lichen and bryophytes and their role in everyday life and environment.	3	Ev
CO-4	distinguish life cycle pattern in algae, fungi and bryophytes	2	An
CO-5	identify algal, fungal, lichen and bryophytes samples and compare adaptive feature of the specified plant groups	1	Un, Re
CO-6	implement the knowledge acquired for self-employability	6, 7	Un, Ap

SEMESTER I			
Allied I		Invertebrate & Chordate Zoology	
Course Code: 21UZO A11	Hrs/Week : 4	Hrs/Sem : 60	Credits : 3

**Course Outcomes:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate the invertebrate and chordate animals	1	Un
CO-2	identify the common and distinctive features of invertebrate phyla	2	Re
CO-3	associate the parasitic adaptation through their mode of life	3	Un
CO-4	analyse the unique features and evolutionary relationship between each chordate group	1	An
CO-5	apply the knowledge of biological diversity to our daily life and conservation of bioresources	5	Ap
CO-6	evaluate the interaction of organisms with environment and their adaptive mechanisms	3	Ev

**SEMESTER – I****Skill Enhancement Course - I Professional English for Botany – I****Course Code: 21UBOPE1****Hrs / Week: 2****Hrs / Sem: 30****Credits: 2****Course Outcomes:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	organize the words used in life science and improve their competence in using the language	1	An
CO-2	critique unfamiliar texts and describe biological processes and appraise critical and theoretical approaches to the reading and analysis of various texts in life science	7, 3	Ev, An
CO-3	discuss critically, negotiate and present without committing errors and develop entrepreneurship skills	2	Un
CO-4	describe the technical words used life science laboratory settings and construct error free sentences for content writing	8	Re
CO-5	present simple sentences without spelling or grammatical error and develop strategic competence through active listening	7	Ap
CO-6	construct English proficiency with good vocabulary and speak confidently in academic/ professional environment and face interviews with confidence	7	Ap

## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014



**SEMESTER – II****Core II                      Anatomy, Embryology and Microtechniques****Course Code: 21UBOC21****Hrs / Week: 6****Hrs / Sem: 90****Credits: 6****Course Outcomes:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>C L</b>
CO-1	classify tissue system and explain the organization of root and shoot apex	2	Ev, An
CO-2	distinguish the organization of tissues and cellular architecture between root and stem and learn the process of secondary growth in plants	2	An
CO-3	describe the cytological events associated with the flower development	2	Un , E
CO-4	explain the physiological changes during pollen pistil interaction.	1	Un
CO-5	understand fertilization and double fertilization.	3	Ev
CO-6	explain the development of seed and dispersal mechanism	1	Un

**SEMESTER II****Allied II                      Genetics, Physiology and Developmental Zoology****Course Code: 21UZOA21****Hrs/ Week : 4****Hrs/ Sem : 60****Credits : 3****Course outcomes**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO Addressed</b>	<b>CL</b>
CO-1	explain the importance of genetics and welfare of human society	2	Un
CO-2	list out the nutritive components in the food	2	Re
CO-3	describe the physiology of digestion, respiration and excretion	3	Re
CO-4	appraise the structure and function of human nervous system and the process of nervous conduction	1,2	An
CO-5	illustrate the anatomy, physiology of human reproductive system, fertilization and post fertilization events	3	Un
CO-6	categorize the types of contraceptive devices and suggest treatment for infertility.	3,8	An

**SEMESTER – II****Skill Enhancement Course - II Professional English for Botany – II****Course Code: 21UBOPE2****Hrs / Week: 2****Hrs / Sem: 30****Credits: 2****Course Outcomes:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	categorize the words used in life science and improve their competence in using the language in daily life	1	An
CO-2	appraise the critical and theoretical approaches to the reading and analysis of various texts in life science and critique the biological processes	3, 7	An, Ev
CO-3	discuss critically, negotiate and present without committing errors and develop entrepreneurship skills	2, 6	Un
CO-4	prepare reports and minutes for various academic events	7	Cr
CO-5	write essays creatively and innovatively on view of images	7	Ap
CO-6	develop script for topics on interest	7	Cr

**SEMESTER – III****Core III Plant Diversity II (Pteridophytes, Gymnosperms and Paleobotany)****Course Code: 21UBOC31   Hrs / Week:4   Hrs / Semester: 60   Credits:4****Course Outcomes:**

CO.No.	Upon completion of this programme, students will be able to	PSO addressed	CL
CO-1	summarize the general characters of pteridophytes and gymnosperms and outline the classification of these groups of plants	1,2	Un
CO-2	specify the criteria of classification and assign the taxonomic hierarchical rank to the taxa	2,3	Un, Ap
CO-3	explore the ecological and economic significance of pteridophytes and gymnosperms	1,3	An
CO-4	highlight the phenomenon of heterospory in pteridophytes and infer its significance in origin of seed habit	2	An
CO-5	examine microscopically the key characteristics of (morphological, anatomical and ecological) pteridophytes and gymnosperms and make sketches of the same.	6	Ap
CO-6	record the geological time scale and relate the geological era with evolution of plants	2.4	Un



**SEMESTER - III****NMEI****Plant Resource Utilization****Course Code:21UBON31****Hrs/week: 2****Hrs/Semester:30****Credit:2****Course Outcomes:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the history of agriculture and scope of agricultural crops	1	Re
CO-2	discuss the knowledge on geographical area of cultivation, production and marketing of various food crops and their finished goods	1	Un
CO-3	present the importance of tropical and temperate fruits for human wellbeing, cultivation practices and extraction of oil from oil crops	3	Ap
CO-4	critique the value of spices, condiments and beverage in international trades and confectionery industries	3	Ev
CO-5	evaluate the wealth of cash crops in India and their importance in improving trade and industrial growth	3	Ev
CO-6	indicate fibers are an alternative source of plastics, explain the use of beverages and their production	5, 6	Un



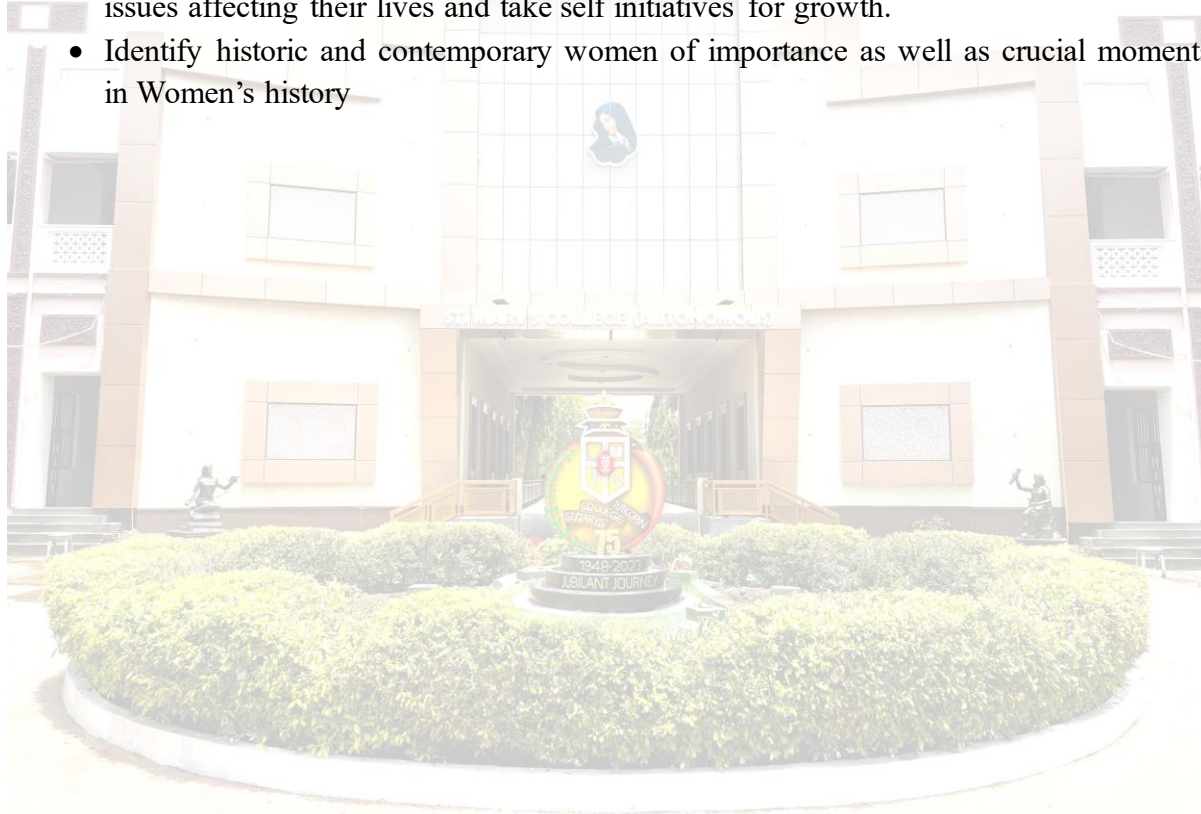
### Semester – III

#### Women's Synergy

Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



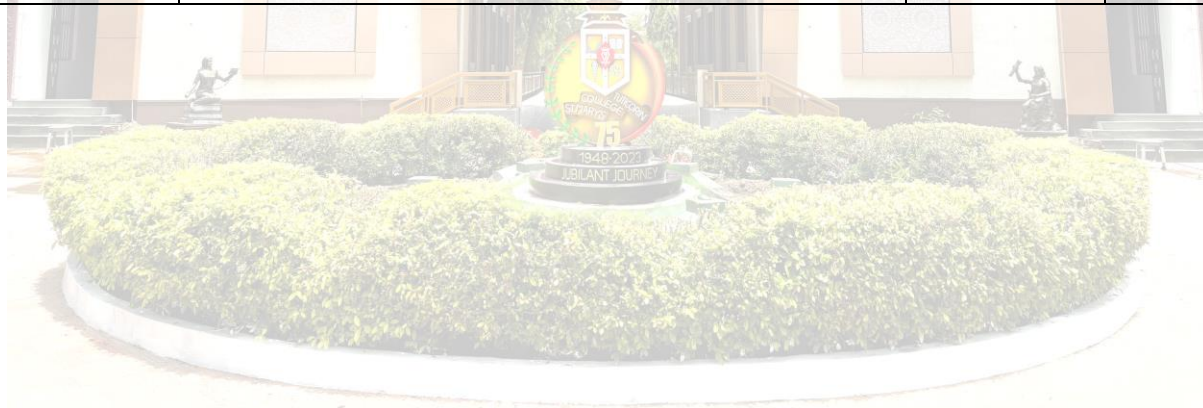
## SEMESTER IV

### Core IV                      Taxonomy of Angiosperms and Economic Botany

<b>Course Code: 21UBOC41</b>	<b>Hrs/week: 4</b>	<b>Hrs/Semester: 60</b>	<b>Credit: 4</b>
------------------------------	--------------------	-------------------------	------------------

#### Course Outcomes:

CO. No.	Upon completion of this programme, students will be able to	PSO addressed	CL
CO-1	describe the general principles of classification and outline the systems of classification	1	Cr
CO-2	apply binomial nomenclature for species naming	4	Un
CO-3	learn floristic features in technical term and provide an illustrious explanation on floral components of the flower and develop skill in plant identification.	4,6	Ap
CO-4	familiarise and evaluate the economic importance of angiosperms	6	Ev
CO-5	attain field experience and preparation of herbaria for digital database and gain the art of plant collection and protection	6, 8	An, Cr
CO-6	compare and contrast the diagnostic features of different families of angiosperms prescribed in the syllabus	1	An



**SEMESTER -V****Core V Common Core - Biotechnology****Course Code: 21UBCC51****Hrs/Week:4****Hrs/Sem: 60****Credit: 3****Course Outcomes:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss different types of animal and plant cloning vectors and scan the role of restriction enzyme in genetic modification	1,2	Un
CO-2	clarify the human genome sequences and its application in human welfare	4,7	Un, An
CO-3	apply various gene transfer techniques to generate genetically modified organisms	2,7	Ap
CO-4	perform cell culture, organ culture and stem cell culture to realize the positive impact in health care	6	Un, Ap
CO-5	encapsulate the characteristic features of microbes and their role in production of industrial products and environmental reclamation	5,6	An
CO-6	get hands on experience to conduct experiments, analyze and interpret data for investigating problems in biotechnology and allied fields	7,8	Ap





SEMESTER V			
Core VI		Biochemistry	
Course Code: 21UBOC51	Hrs/Week: 4	Hrs/Semester: 60	Credit: 4

**Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the types of chemical bonds involved in the structure of biomolecules and basic concepts of acid, base and buffer	1	Un
CO-2	classify carbohydrates of different domain based on their physical, chemical organization and their biological significance	8	An
CO-3	understand and describe the structure and properties of amino acids, protein and lipids and their role in organization of life	8	Un
CO-4	layout enzyme groups and know the nomenclature that enables to deduce the specificity of enzyme's action	8	Un
CO-5	discuss the sources of vitamins and symptoms specific to vitamin deficiency in human beings.	8	Re
CO-6	apply theoretical knowledge in biochemical laboratory techniques	3, 5	Ap

**SEMESTER V****Core VII****Ecology and Phytogeography****Course Code:21UBOC52****Hrs/week:4****Hrs/semester:60****Credit:4****Course Outcomes:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the ecological, edaphic and biotic factor of the community	3	Re, Un
CO-2	reveal the range of plant community and their relationship in the environment	1	Un
CO-3	enable the students to understand how the plant interact with their environment	1	An
CO-4	categorize the plants based on adaptation to its environments	1	An
CO-5	understand the concept of various plant Communities and their characteristics	2	Un
CO-6	understanding of geographical region and vegetation types of India	2	Un

**SEMESTER – V****Core VIII****Biostatistics and Bioinformatics****Course Code: 21UBOC53****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define and comment on fundamentals of statistical analysis	4	Un
CO-2	apply the learned procedure for collecting data, presenting data	6	An
CO-3	choose necessary tool to interpret the results and find solution to the problems and work with computer skill especially in MS Excel	6	Ev, Un
CO-4	understand the relationships among living things and analyze biological problems using biological concepts, algorithms, and tools available in computer science	2,4	Un
CO-5	apply molecular methods to study genetic variation within and between species	3	Ap
CO-6	apply knowledge of bioinformatics in a practical project	4	Ap

**SEMESTER V****Core Elective****Genetics and Evolution****Course Code:21UBOE51****Hrs/Weeks:4****Hrs/Semester:60****Credits:3****Course Outcomes:**

CO. No.	Upon completion of this course the students will be able to	PSO addressed	CL
CO – 1	design genetic crosses to get information about genes, alleles and gene function	1	U
CO – 2	compare the phenotypes that results from Mendelian principles of inheritance, X linked and cytoplasmic model of inheritance.	3	U
CO – 3	explain how the quantitative traits and the results of many gene combination that each can contribute a varying amount to a phenotype	3	U
CO – 4	explain diagrammatically the process of homologous recombination during meiosis and interpret how it can it lead to re combination of genes and there by variation.	3	C
CO – 5	evaluate how Darwin's theory of natural selection helped to study organic evolution and able to detect evolutionary forces (natural selection, genetic drift, recombination, migration, mutaion) that drive the pattern and process of organic evolution at different levels	5	C
CO -6	answer the scientific questions how organism have evolved overtime and formulate a hypothesis about origin of life on the earth.	6	U



## SEMESTER V

### Core Elective

### Pharmacognosy

**Course Code:21UBOE52**

**Hrs/week:4**

**Hrs/semester:60**

**Credit:3**

### Course Outcomes:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define and identify the more valuable medicinal plants based on their pharmaceutically active compounds	3	Re,
CO-2	formulate medicinal product and apply the knowledge for proper storage and distribution	8	Ap
CO-3	analyse and evaluate the purity of herbal medicine.	5	Ev
CO-4	define, classify and explain the importance of herbal medicine.	6	An
CO-5	identify the crude drugs by morphological, organoleptic and histological characters.	1	Un
CO-6	know and explain the important phyto constituents of therapeutic value.	6	Un



## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 21UCSB51

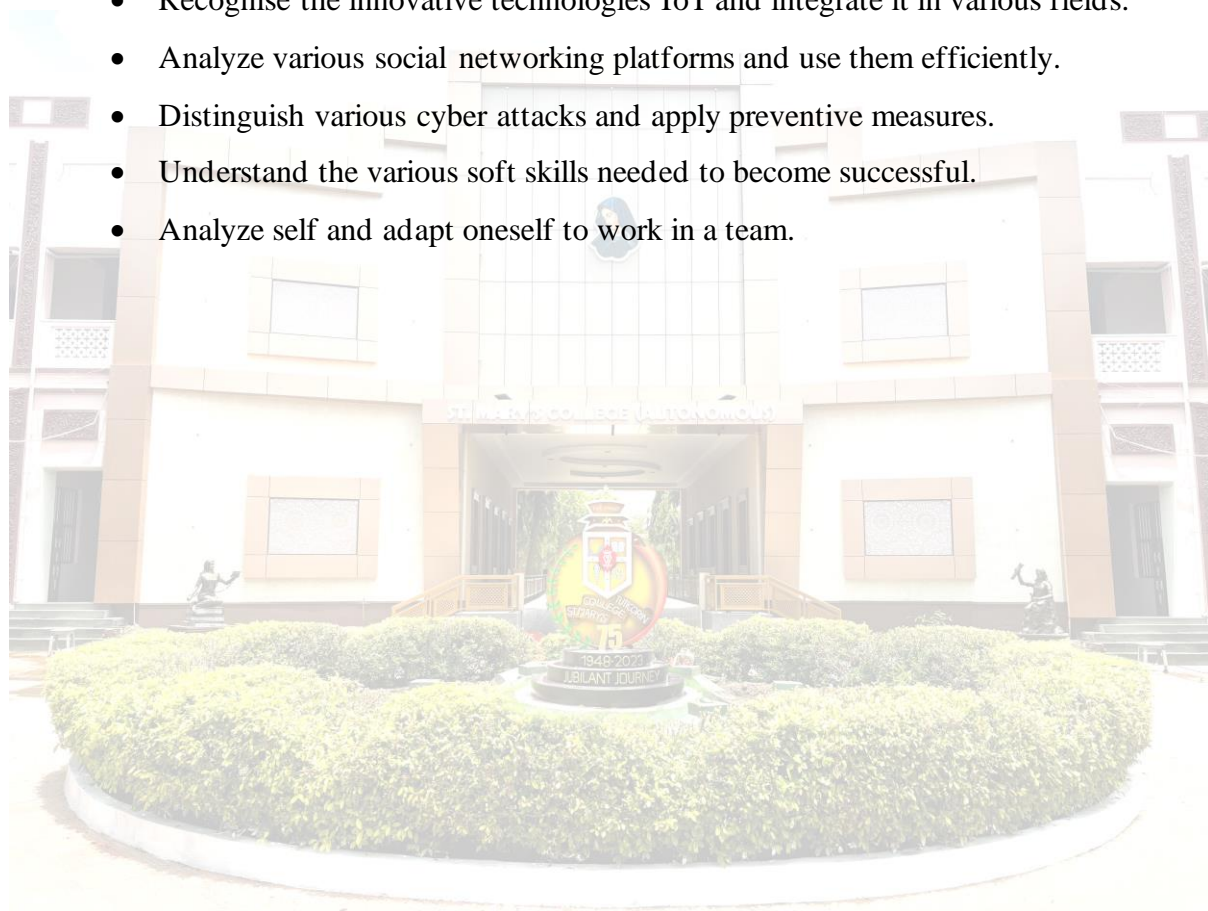
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



SEMESTER – VI			
Core IX		Plant Physiology	
Course Code: 21UBOC61	Hrs/week: 4	Hrs/Semester: 60	Credit: 4

#### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the plant's water relation and functions of root that influence the transfer of inorganic nutrients from the soil into the plants	2,3	Un
CO-2	analyse the mechanism of their assimilation of inorganic molecules into organic molecular components.	2,3,8	Un
CO-3	analyse light enhanced photochemical reactions that culminates in the synthesis of ATP and NADPH and fixation of carbon dioxide into organic compounds	2,3,8	Un
CO-4	describe respiration with its associated carbon metabolism and releasing of energy stored in chemical bonds in the controlled manner for cellular use	2	Re, Cr
CO-5	comment on the hormone controlled and light mediated morphogenetic events in plants	2	An
CO-6	design and conduct scientific experiments and analyse the data critically	4,8	Cr



## SEMESTER VI

### Core X Microbiology and Plant Pathology

<b>Course Code: 21UBOC62</b>	<b>Hrs/week: 4</b>	<b>Hrs/semester: 60</b>	<b>Credits: 4</b>
------------------------------	--------------------	-------------------------	-------------------

#### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire knowledge on the basic concept of microbes, their taxonomy, mode of nutrient and give insight on microbial culture	1	Un
CO-2	understand the structure and growth characteristics of microorganism that enabling the learner to identify and classify microorganisms by themselves	2	Un
CO-3	use various microbiological techniques to isolate bacterial species for morphological and physiological studies	6	An
CO-4	understand the role of microorganisms in fermentation technology for production of food based and pharmaceutical products	6	Ap
CO-5	enumerate the microbial flora of milk and determine milk quality	2	Ev
CO-6	provide a thorough knowledge about the microbes causing plant diseases, their symptoms and preventive measures	7	Ap



**SEMESTER - VI****Core XI Cell and Molecular Biology****Course Code: 21UBOC63****Hrs/Week:4****Hrs/Sem:60****Credits:4****Course Outcomes:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	indicate the structure and function of basic organelles of plant cells	1, 2	Un
CO-2	illustrate the structural organization and function of nucleus	1, 2	Un
CO-3	infer and quote the general principles of chromosome organization	1, 4	Un, Re
CO-4	sequence the gene regulation mechanisms at various levels	2	Un
CO-5	compare the complexity of gene expression in eukaryotes over prokaryotes and infer molecular mechanism of dna replication	5	An, Re
CO-6	present laboratory skill in conducting experiment and draw data and interpret it	6	Ap

**Programme: M.Sc. Botany**

<b>SEMESTER I</b>			
<b>Core I Plant Diversity I (Phycology, Mycology, Lichenology and Bryology)</b>			
<b>19PBOC11</b>	<b>Hrs/week: 6</b>	<b>Hrs/Semester : 90</b>	<b>Credit :4</b>

**Course Outcome:**

<b>CO. NO</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	appreciate the uniqueness and distinguish between diverse groups of primitive plants using their characteristic features	1, 2	An
CO-2	discuss the different life cycle patterns of lower plants	1, 2	Cr
CO-3	know the basic skills and techniques in micropreparation of diversified cryptogams	6	Ap
CO-4	apply the practical knowledge to identify a various cryptogams	1, 6	Ap
CO-5	understand that the cryptogams are unique in plant kingdom	1, 2	Un
CO-6	describe the economic and ecological significance of lichens	1, 2	Ap
CO-7	know the origin and phylogenetic evolution of Bryophyte	1, 2	Re
CO-8	know the scientific contribution done by eminent scientists in the field of cryptogams	1, 2	Un

**SEMESTER I****Core II Plant Diversity II ( Pteridophytes, Gymnosperms and Paleobotany)**

<b>19PBOC12</b>	<b>Hrs/week: 6</b>	<b>Hrs/Semester : 90</b>	<b>Credit :4</b>
-----------------	--------------------	--------------------------	------------------

**Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	appreciate the uniqueness and distinguish between diverse groups of Pteridophytes and Gymnosperms using their characteristic features	1, 2	An
CO-2	discuss different life cycle patterns in different groups	1, 2	Cr
CO-3	know the basic skills and techniques in micropreparation and formulate methods to identify different groups	1, 6	Ap
CO-4	know the evolutionary significance of Pteridophyte	1, 2	Un
CO-5	infer pteridophytes are pioneer in the evolution of seed habit	1, 2	Re
CO-6	compare and contrast the origin and evolution of steles, foliage, seeded and seedless plants.	1, 2	An
CO-7	compare and contrast the seeded and seedless plants.	1, 2	Ev
CO-8	review critically the biology , ecology of fossils and methods of fossilization.	1, 7	Un

**SEMESTER I****Core III Microbiology and Plant pathology****19PBOC13****Hrs/week: 5****Hrs/Semester : 75****Credits: 4****Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	describe bacterial cell structure, microbial growth, metabolism and the ways to control their growth by physical and chemical means	1	Re
CO-2	differentiate gram positive and gram negative	4	An
CO-3	explain the microbial processes of replication, survival, and interaction with their environment.	3	Un
CO-4	evaluate the beneficial and harmful microbes in plants water, milk and food	4	Re
CO-5	use various microbiological techniques to isolate, characterize and identify bacterial colonies.	4	Ap
CO-6	understand the basic principles related to plant diseases	1	Un
CO-7	provide tools to design innovative, sustainable and tailored control methods to prevent plant diseases or to reduce their impacts	4	Cr
CO-8	understand the role of microorganisms in biotechnology, fermentation, medicine and other industries important to human well being	1	Un



**SEMESTER-I****Core IV Histology, Embryology and Morphogenesis****19PBOCI4****Hrs/week:5****Hrs/Semester : 75****Credits :4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	classify the shoot and root apical meristems	1,2	Ev
CO-2	explain the function and types of epidermal tissue systems	1,2	Ap
CO-3	Identify different types of cells through micro preparation and microscopic observation	4	An
CO-4	Give illustrious explanation and differentiate the primary and secondary structure of plant.	1,2	Un
CO-5	understand the mode of development of reproductive structures identify the different stages of dicot and monocot embryo	3,6	Ap
CO-6	explain the fertilization process including pollen pistil interaction and self incompatibility	1	Ev
CO-7	recognize different types of endosperm and their role in seed development	4	Re
CO-8	identify the different stages of dicot and monocot embryo	4	Ap

**SEMESTER II****Core VI Biochemistry and Biophysics****19PBOC22****Hrs/week: 5****Hrs/Semester : 75****Credits:4****Course Outcome:**

CO.No.	Upon completion of this course ,students will be able to	PSO addressed	CL
CO-1	study the polymeric biomolecules and their monomeric building blocks	1	Re
CO-2	outline the metabolic pathways and be able to trace the regulatory process in the biological system	1	Re
CO-3	outline enzyme groups and know the nomenclature that be able to explain the specificity of enzyme's role and mode of action	3	An
CO-4	construct electromagnetic spectrum and understand the properties to relate biological applications.	6	Ap
CO-5	characterise thermodynamic systems at thermal equilibrium	3	Cr
CO-6	sketch molecular structures and bonding of bio-molecules. upon that knowledge be able to deduce the packaging and foldings of biomolecules	4	Re
CO-7	set up and operate variety of experiments to analyse data accompanied by problem solving and documentation.	6	Ap
CO-8	detect the source of vitamins and their chemistry and distinguish their symptoms specific to their deficiency	7	Re

SEMESTER II			
Core VII		Taxonomy of Angiosperms	
19PBOC23	Hrs/week: 5	Hrs/Semester : 75	Credit : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the basic principles and rules of botanical nomenclature, and use taxonomic literature and describe the general principles of classification and binomial nomenclature for species naming.	1	Ap
CO-2	relate taxonomy to other sciences	4	Re
CO-3	understand the preparation and importance of herbarium, role of BSI	6	Un
CO-4	identify the common species of plants growing in Thoothukudi and their systematic position, their distinguishing morphological/ecological attributes.	1	Ap
CO-5	utilize the taxonomical terminology for identification of taxa	1	Un
CO-6	understand the comparative account among the families of angiosperms.	4	Un
CO-7	able to gain proficiency in the use of keys and manuals for identifying any unknown plants to species level	7	Ap
CO-8	combine classical plant taxonomy with modern molecular phylogeny	1	An

**SEMESTER II****Core VIII****Biostatistics and Bioinformatics****19PBOC24****Hrs / week: 4****Hrs/Semester : 60****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand the fundamentals of statistics and statistical analysis	4	Un
CO-2	apply the learned procedure for collecting data, analyzing and representation of the same	4	Ap
CO-3	calculate the central tendency and dispersion in collected data	4	An
CO-4	do statistical analysis and communicate the results of statistical analyses accurately and effectively	6	Ap
CO-5	apply knowledge of the most important bioinformatics databases and able to identify what information they contain?	4	Re
CO-6	analyze concepts and approaches in bioinformatics and its application in various biological fields	4	An
CO-7	explain the major steps and principles for doing different types of sequence alignments	6	Ap
CO-8	demonstrate the use of bioinformatics tools in biological research	6	Ap



**SEMESTER - III****Core X****Ecology****19PBOC32****Hrs / Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	reveal the range of plant diversity in terms of structure, function and their environmental relationships.	5	Un
CO-2	describe the climatic and edaphic factors and ecological succession	5	Un
CO-3	categorize the plants based on adaptation	3	An
CO-4	address the global environment crisis and the strategies applicable for environmental problem mitigation	7	Ev
CO-5	learn the global level environmental summit organized that focused for sustainable future	7	Cr
CO-6	know the importance of remote sensing in finding the current status of global health	7	Cr
CO-7	recognize the causes of environmental problems	7	Un
CO-8	discuss ecological issues and concept	5	Re

**SEMESTER III****Core XI Molecular Biology and r-DNA Technology****19PBOC33****Hrs/week: 5****Hrs/Semester : 75****Credits: 4****Course outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know chemistry of genetic material and details of its replication at molecular level	2	Un
CO-2	understand the general principles of chromosome organization at different phases of cell cycle	2	Un
CO-3	explain gene regulation mechanisms at various levels by which she can learn how it controls growth and development of an organism	4	Cr
CO-4	know complexity of gene expression in eukaryotes over prokaryotes	3	Un
CO-5	understand vector mediated gene transfer techniques including screening and identification of recombinants	6	Un
CO-6	know the gene cloning tools and their mysteries in success of gene cloning technology	8	Un
CO-7	attain hands on experiences in the techniques associated there of	4	Cr
CO-8	practice the advanced techniques in genetic engineering such as DNA sequencing, blotting, DNA amplification and fingerprinting	3	Ap

Semester III			
Core XII		Research Methodology	
19PBOC34	Hrs/week:5	Hrs/Semester :75	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know and explain the importance of the internet in research and be able to use it for gathering their reference materials	1	Un
CO-2	acquainted with different tools and techniques essential for research work	6	Cr
CO-3	examine the basic framework of research process and able to learn how to address research problem and what is to be done to solve it.	8	An
CO-4	develop an understanding of the ethical dimensions of conducting applied research	7	An
CO-5	determine the appropriate quantitative methodologies to be used for the study	1	Ev
CO-6	understand a general concept of paradigms of research design.	7	Un
CO-7	familiarise with mixed methods of research.	6	Cr
CO-8	communicate the research findings to the scientific forums	6	Cr

**SEMESTER IV****Core: XIII****Plant Physiology****19PBOC41****Hrs/week: 6****Hrs/Semester : 90****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the water relation and nutritional needs of the plant from the soil, and assess the symptom specific nutritional deficiencies and the need of fertilizers for crop improvement	6	Un
CO-2	discuss how root structure and functions influence the transfer of inorganic nutrients from the soil into the plants,	3	Un
CO-3	analyse the mechanism of their assimilation of inorganic molecules into organic molecular components.	3	Un
CO-4	analyse light enhanced photochemical reactions that culminates in the synthesis of ATP and NADPH and fixation of carbon dioxide into organic compounds	3	Un
CO-5	describe respiration with its associated carbon metabolism and releasing of energy stored in chemical bonds in a controlled manner for cellular use	3	Re
CO-6	investigate plant's functions and adaptations under altered environmental conditions	7	Cr
CO-7	comment on the hormone controlled and light mediated morphogenetic events in plants	3	An
CO-8	design and conduct scientific experiments and analyse the data critically	6	Cr



Semester IV			
Core XIV		Plant Biotechnology	
19PBOC42	Hrs/week:4	Hrs/Semester: 60	Credits: 4

**Course outcome:**

CO. No	Upon completion of this course ,students will be able to	PSO addressed	CL
CO-1	understand principles of plant tissue culture and media preparation	3	Re,Un
CO-2	acquire knowledge and skill in various micropropagation techniques.	4	Un,Ap
CO-3	understand meristem culture, Somaclonal variations, haploid plants, androgenesis, gynogenesis, embryogenesis.	4	Un
CO-4	describe meristem culture and clonal propagation of plants	4	Re
CO-5	synthesize synthetic seeds and understand their applications	3	Un
CO-6	understand the fermentation processes and their importance in industries	3	Un
CO-7	study and apply nanotech process for her research pursuit	4	Ap
CO-8	discuss the advances in genetic engineering and production of monoclonal antibodies and their novelty	1	Re

## SEMESTER IV

### Core XV Biodiversity and Conservation

19PBOC43	Hrs/week:4	Hrs/Semester : 60	Credits:4
----------	------------	-------------------	-----------

#### Vision:

- To impart knowledge about the crucial need to maintain biodiversity and ecosystem services.
- Biodiversity conservation contributes to poverty eradication and vice versa through the sustainable use and management.

#### Mission:

- Conservation of biodiversity is utmost important for the adaptation and mitigation to climate change.
- Influence, encourage and assist students to conserve the integrity and diversity of nature and get an idea of environmental issues and its conservation

#### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know that biodiversity encompasses diversity of genes, species and community.	1, 7	Un
CO-2	investigate the key threats to biodiversity	7	Un
CO-3	find why <i>in situ</i> and <i>ex situ</i> conservations are imperative for conservation of nature .	7	Un
CO-4	explain different levels of biodiversity	1	Un
CO-5	Analyze the vegetation by different methods	4	An
CO-6	Earn adequate knowledge on biodiversity legislations.	7	Ap
CO-7	estimate the primary productivity of an aquatic and terrestrial ecosystem	4	Ev
CO-8	Manage and conserve the biological resources	7	Cr

## SEMESTER I

### Core I Plant Diversity I (Algae, Bryophyte, Fungi and Lichen)

<b>Course Code:21PBOC11</b>	<b>Hrs/week: 6</b>	<b>Hrs/Semester: 90</b>	<b>Credit: 4</b>
-----------------------------	--------------------	-------------------------	------------------

#### Course Outcome

CO. NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	illustrate the distinguishing features of algae, bryophytes, fungi and lichens and appreciate their uniqueness	1, 2	Un, Re
CO-2	compare the status of cryptogams in evolution of advanced plant groups	1, 2	An
CO-3	illustrate the basic skills and critique the role of algae, fungi, lichen and bryophytes in their everyday life and environment	5, 6	Ap, Ev
CO-4	implement the practical knowledge to identify a particular group from a mixed group in the laboratory and in the field	6	Ap
CO-5	indicate the adaptive features of cryptogams to their habitats	1, 2, 7	Un
CO-6	relate the phylogenetic relationship between the different plant groups	1, 2	Un



## SEMESTER I

### Core II

### Plant Microbe Interaction

Course Code: 21PBOC12

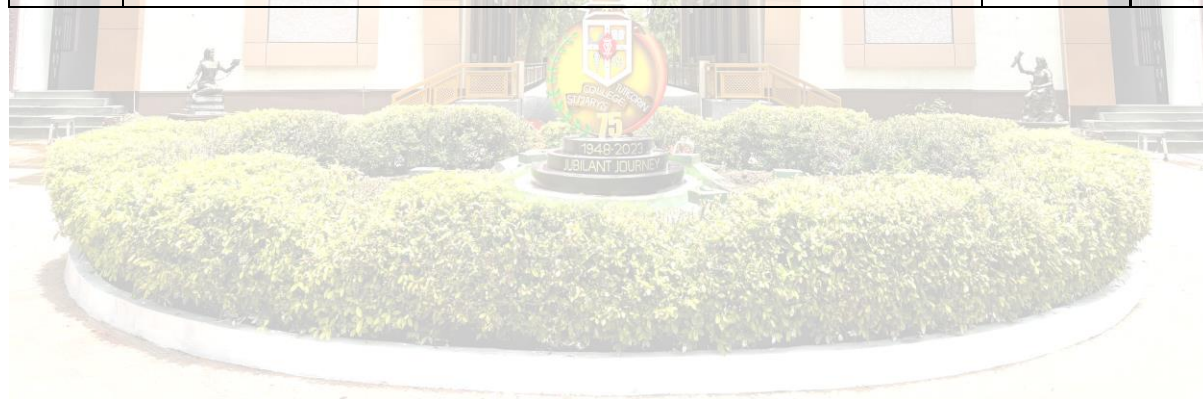
Hrs/week: 6

Hrs/Semester: 90

Credits: 4

### Course Outcomes

CO.No	Upon completion of this course, students will be able to:	PSO addressed	CL
CO-1	perform the techniques of isolation, characterization and measure the growth of bacteria	4	Re
CO-2	differentiate the mode of action of antibiotics	3	An
CO-3	outline the stages of disease pyramids and disease cycle.	2	An
CO-4	know about the enzymes involved in plant diseases	3	Re
CO-5	understand the basic principles related to plant diseases.	2	Un
CO-6	differentiate the general symptoms of bacterial disease, viral diseases and fungal disease	6	Un





Semester I			
Core III Bioinstrumentation and Research Methods			
Course Code: 21PBOC13	Hrs/week: 5	Hrs/Semester: 75	Credits: 4

### Course Outcome

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquaint with different tools and techniques essential for research work	6	Cr
CO-2	understand the fundamentals of statistics and statistical analysis	4	Un
CO-3	do statistical analysis and communicate the results of statistical analyses accurately and effectively	4	Ap
CO-4	examine the basic framework of research process and able to learn how to address research problem and what is to be done to solve it.	6	An
CO-5	communicate the research findings to the scientific forums	6	Cr
CO-6	develop an understanding of the ethical dimensions of conducting applied research	7	An

Semester I			
Core IV                      Phytochemistry and Pharmacognosy			
Course Code: 21PBOC14	Hrs/week: 5	Hrs/Semester: 75	Credits: 4

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO's addressed	CL
CO-1	confirm the promising role of the phyto constituents as cytotoxicity and substantiate them for the treatment of fatal diseases	8	Re
CO-2	understand the importance of secondary metabolites and relate them in treating the ailments	3	Un
CO-3	identify and categorize medicinal potential of herbs based on their chemical constituents and therapeutic applications	3	Ap
CO-4	extract essential oils from natural resources and utilize them effectively as pharmaceuticals and cosmetics	7,8	Aa
CO-5	evaluate the purity of the drugs and able to detect adulterations and substitutions	2,4	Ev
CO-6	screen and elucidate various pharmacologically important phyto constituents to ascertain its medical quality	4	Ev

## SEMESTER II

### Core V Plant Diversity II (Pteridophytes, Gymnosperms and Paleobotany)

<b>Course Code: 21PBOC21</b>	<b>Hrs/week: 5</b>	<b>Hrs/Semester: 75</b>	<b>Credit: 4</b>
------------------------------	--------------------	-------------------------	------------------

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	appreciate the uniqueness and distinguish between diverse groups of Pteridophytes and Gymnosperms using their characteristic features	1,2	Un, An
CO-2	discuss different lifecycle patterns in different groups	1,2	An
CO-3	know the basic skills and techniques in micro preparation and formulate methods to identify different groups	1,6	Ap
CO-4	know the evolutionary significance of Pteridophyte	1,2	Un
CO-5	compare and contrast the origin and evolution of steles, foliage, seed and seedless plants.	4,8	Ev
CO-6	review critically the biology, ecology of fossils and methods of fossilization.	1,7	Un



**SEMESTER II****Core VII****Developmental Botany****Course Code: 21PBOC23      Hrs/week: 5      Hrs/Semester: 75      Credit: 4****Course Outcome**

CO. No	Upon completion of this course ,students will be able to	PSO addressed	CL
CO-1	understand the overview of essential aspects of development and know how embryo arises and the nature of signals that guide complex patterns of growth and differentiation in the embryo	3, 4	Un
CO-2	explore and illustrate how the molecular and genetic approaches provide an insight into the mechanism that translate cues into organized pattern growth and development	4	Re, Un
CO-3	role of shoot and root apical meristem in vegetative growth and development	3	Re, Un
CO-4	know the biochemical and physiological changes associated with the development of sex organs, fertilization events and fruit development	4	Un, Ap
CO-5	know how the intrinsic programmes of development coupled to external influences such as nutrient levels, energy inputs and environmental signals.	4	Un
CO-6	acquire hands on training experience related to the course.	4	Re



**SEMESTER – II****Core VIII****Genetics and Bioinformatics****Course Code:21PBOC24****Hrs/Week: 4****Hrs/Sem: 60****Credits: 4****Course Outcome**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	associate the physical basis of heredity and the mode of inheritance of a character	2	Un
CO-2	predict the unknown phenotype and genotype in a partially known pedigree	4	Ap
CO-3	understand various chromosomal aberrations and various chromosome banding techniques,	1, 2	An, Un
CO-4	comprehend the operations in population genetics and develop skill in map a gene and measure the distance between two genes	2, 4	Un, Ap
CO-5	predict gene of unknown sequences, similarity between sequences, protein structure, phylogenetic relationships between large groups using genomic data	1, 4	An, Ap
CO-6	learn barcoding techniques and sequence submission	1,2	An, Un

### SEMESTER III

#### Core IX Biochemistry and Biophysics

Course Code: 21PBOC31      Hrs/week: 6      Hrs/Semester: 90      Credits:4

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	study the polymeric biomolecules and their monomeric building blocks	1,2	Re
CO-2	illustrate that living organisms and biological system interact via molecular connection	1,3	Re
CO-3	able to realise the importance of structural configuration of biomolecules and their atomic rearrangement with respect to their functions	1,6	Re
CO-4	outline enzyme groups and nomenclature that be able to explain the specificity of enzyme's role and also detect the source, and chemistry of vitamins and symptoms specific to their deficiency	2,3	An
CO-5	set up and operate variety of experiments and analyse data accompanied by problem solving and recording.	3,4	Ap
CO-6	draw electromagnetic spectrum and understand the properties of light, enabling to explain that light energy is needed by plant and that is transformed in biochemical system as governed by the laws of thermodynamics	3,7	Ap, Cr

**SEMESTER III****Core X****Taxonomy of Angiosperms****Course Code:21PBOC32****Hrs/week:6****Hrs/Semester: 90****Credit:4****Course Outcome**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the rules of botanical nomenclature and taxonomical hierarchy that enable to organize the plant based on the hierarchical system	1	Ap
CO-2	apply scientific literature for identifying and grouping of underrepresented plants in the taxonomic literature and gain hands on working experience in describing the floristic feature of the plants of specified families and make sketches of that.	4, 1	Re, An
CO-3	outline different systems of classification and recall the contribution of taxonomist/naturalist in plant systematic	1	Un
CO-4	compare the traditional and modern system of classification and report its merits and demerits and recognize how the role of cytology, embryology , phytochemistry and molecular biology of plants help to authenticate the identity of plants	1, 3	Ap
CO-5	realize the importance of taxonomical literature (flora, monograph, botanical gardens, herbarium and government organization) and utilize them for plant identification and conservation.	2	Un
CO-6	apply effectively the traditional and modern tool (Keys, interactive keys, e-flora, digital herbarium) to develop skill in plant identification	4	Un

**SEMESTER - III****Core XI Molecular Biology and Genetic Engineering****Course Code: 21PBOC33****Hrs/week: 5****Hrs/Semester: 75****Credits: 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss the chemistry of genetic material and details of its replication at molecular level and analyze how errors during replication are repaired	1	Un, An
CO-2	infer complexity of gene expression in eukaryotes over prokaryotes and compare gene regulation mechanisms at various levels by which they can learn how it controls growth and development of an organism	2, 4	Un, An
CO-3	illustrate the principles of genetic engineering and investigate the basic steps of gene cloning	2	Un, An
CO-4	indicate the role of enzymes and vectors responsible for gene manipulation, transformation and genetic engineering	1	Un
CO-5	investigate and critique the different types of gene transfer methods employed in gene cloning process	2, 3	An, Ev
CO-6	implement the advanced techniques in genetic engineering, present the different strategies of recombinant DNA technology and resolve the problems encountered	7	Ap



**SEMESTER - IV****Core: XIII****Plant Physiology****Course Code: 21PBOC41****Hrs/week: 6****Hrs/Semester : 90****Credits: 5****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the effect of the soil-plant-water continuum (SPWC) and assess the need of mineral nutrients and symptoms specific to nutrient deficiency.	2, 6	Un
CO-2	discuss how root structure and functions influence the transfer of inorganic nutrients from the soil into the plants,	3	Un
CO-3	analyse the mechanism of assimilation of inorganic molecules into organic molecular components and lightenhanced photochemical reactions that culminatesin the synthesis of ATP and NADPH and fixation of carbon dioxide into organic compounds	3	Un
CO-4	describe respiration with its associated carbon metabolism and releasing of energy stored in chemical bonds in a controlled manner for cellular use	3	Re
CO-5	review systematically how plant's manage physiologically with respect to environmental stress and remark on the hormone controlled and light mediated morphogenetic events in plants.	3	Cr
CO-6	design and conduct scientific experiments and analyze the data critically	6	Cr

## SEMESTER IV

### Core XV Plant Biotechnology

<b>Course Code: 21PBOC43</b>	<b>Hrs/week: 4</b>	<b>Hrs/Semester: 60</b>	<b>Credits:4</b>
------------------------------	--------------------	-------------------------	------------------

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	comprehend the basic principal of in-vitro tissue culture and develop skills in methods of tissue culture.	3	Re, Un
CO - 2	substantiate tissue culture is the viable option for the conservation of endangered plants	4	Re
CO - 3	grasp the techniques of mass cultivation of biofertilizer and defend biofertilizer a boon to sustainable agriculture	3	Un
CO - 4	categories different methods of synthesis of nanoparticles and understand the wide range of application of nanotechnology.	3	Un
CO - 5	describe what is plant molecular farming and highlight that transgenic plants are bioreactor for production of quality protein and other metabolites valuable to medicine and industries?	4	Ap
CO - 6	utilize transferable skills obtained through the course for the professional accomplishment	1	Re

**SEMESTER – IV****Core Elective****Nanobiotechnology****Course Code: 21PBOE42****Hrs/Week: 4****Hrs/Semester: 60****Credits: 4****Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO's Addressed</b>	<b>CL</b>
CO-1	understand the fundamental principles of nanotechnology and types of nano particle	3	Un
CO-2	apply engineering and physics concepts to the nano-scale and non-continuum domain.	4	Cr
CO-3	understand the wide range of applications of nanotechnology and its interdisciplinary aspect	2	Re
CO-4	apply and transfer interdisciplinary systems engineering approaches to the field of bio- and nanotechnology projects	3	Re
CO-5	practice and explain state-of-the-art characterization methods for nanomaterials, understanding and critiquing nanomaterial safety and handling methods required during characterization and its applications in the various field like bioengineering, biomedicine and agricultural/environmental issues	4	An
CO-6	correlate the impact of nanotechnology and nanoscience in a global, economic, environmental, and societal context and identify career paths at the interface of nanotechnology, biology, environmental and agricultural engineering and medicine	6, 7	En

**Programme: B. Sc. Chemistry**

<b>SEMESTER- I</b>			
<b>Part III</b>	<b>Core I</b>	<b>General Chemistry I</b>	
<b>Code :18UCHC11</b>	<b>Hrs/Week:4</b>	<b>Hrs/ Sem: 60</b>	<b>Credits:4</b>

**Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	compare Rutherford and Bohr's model of the atom	1, 2	An
CO-2	predict electronic arrangement in orbits	1, 2, 3	Ev
CO-3	understand quantum numbers and to Know the rules for filling up of orbitals	1, 2, 3, 4	Un
CO-4	explain the periodic properties of the different groups of compounds focusing on production methods	1	Un
CO-5	apply methods of balancing redox reactions	1, 2, 3	Ap
CO-6	know the different concepts of acids and bases	1, 3	Re
CO-7	identify different types of bonding in molecules	3, 4	An
CO-8	sketch Molecular orbital diagram and to apply the VSEPR theory to predict the shape of a molecule or polyatomic ion.	3, 4	Ap



**SEMESTER- I****Part III      Core I****General Chemistry II****Code :18UCHC12****Hrs/Week:4****Hrs/ Sem: 60****Credits:4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	know the nomenclature of different class of organic compounds	1	Re
CO 2	associate polarization of a bond with electronegativity	1, 3	Un
CO 3	discuss nucleophilic and electrophilic groups and their properties, Identify Aromatic, antiaromatic & non- aromatic compounds by Huckel's rule	1,3	Re,Un
CO 4	discriminate terminal & non-terminal alkynes, the acidic nature of acetylenic hydrogen	1,3	An,Un
CO 5	predict the mechanism of aromatic substitution reactions and effect of o,m& p directing group	1,6	Cr
CO 6	interpret the reactions and properties of halogen compounds, Distinguish the nuclear and side chain halogen compounds in aromatic ring, Describe the preparation and properties of halogen derivatives such as vinyl chloride, chloroprene	1,2,5,6,7	Un,An,Ap
CO7	classify and compare the types of colloids, Discuss the preparation methods and properties of colloids	1 , 2 , 5	Un
CO 8	enumerate the importance of colloids in day to day life, Know the experimental methods of determining the colligative properties	1, 3,4	Re

**SEMESTER - I****Part III****Allied Mathematics – I****Code:18UMAA11****Hrs / Week: 3****Hrs / Semester: 45****Credits: 2****Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	form the equations from the given roots.	6, 7	C
CO-2	Approximate solutions of equations by applying Horner's method and Newton's method	2	U,E
CO-3	transform equations by increasing, decreasing and multiplying the roots of the equation.	4	A
CO-4	develop and apply concepts of expressions and equations to investigate and describe relationships	5	A
CO-5	demonstrate problem solving skills	2, 8	C
CO-6	evaluate eigen values and eigen vectors of square matrices and make use of the properties of determinants in their calculation.	4	U,E
CO-7	calculate the radius of curvature by differentiation	4, 6, 7	U,E
CO-8	calculate centre and circle of curvature.	4, 6, 7	E

**SEMESTER - I****Part III****Allied Mathematics II****Code:18UMAA12****Hrs / Week: 3****Hrs / Semester: 45****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	compute the curl and the divergence of vector fields	4	C
CO-2	compute the gradient of a scalar valued function	1, 4	C
CO-3	solve Differential Equations	5	E
CO-4	interpret basic definitions and terminology associated with differential equations and their solutions	6,7,8	U
CO-5	classify the differential equations with respect to their order and linearity	6, 7,8	An
CO-6	Solve linear differential equations	1	Ev
CO-7	find complementary functions	4	R
CO-8	evaluate particular integrals of the form $e^{ax}$ , $\sin ax$ , $\cos ax$ , $x^m$ and $e^{ax}f(x)$	2, 4	A,E

**SEMESTER I****Part III****ALLIED BIOCHEMISTRY -I****Code: 18UBCA11****Hrs/Week : 4****Hrs/ Sem : 60****Credits : 3****Course Outcomes**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	Explain about the chemical composition and the elements of life. Differentiate direct and indirect method for the determination of energy requirement of man	1,2	Un
CO 2	Express the importance of bioenergetics	7	Un
CO 3	Compare the biological reaction such as exergonic reaction and endergonic reaction	3	An
CO 4	Demonstrate about the various energy rich compounds such as adenosine triphosphate, guanosine triphosphate, uridinetriphosphate, Cytidinetriphosphate and acyl phosphate.	5	Ap
CO 5	Distinguish water soluble and fat soluble vitamins and analyze their composition, functions and deficiency symptoms.	3	An
CO 6	Interpret the hormones producing organs and their functions, Know about the plant as well as animal hormones.	3,5	Cr,Re
CO 7	Identify the antibiotics which are all responsible for affecting cell wall synthesis, cytoplasmic membrane and enzyme systems.	7	Re
CO 8	Develop knowledge about the antibiotics interfering with nucleic acid function and inhibiting protein synthesis.	5	Ev



SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER II****Part III      Core III      Inorganic Chemistry- I****Code :18UCHC21****Hrs./Week:4****Hrs/ Sem:60****Credits:4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	Recall the methods of purification of ores	1	R
CO 2	Identify the electronic configurations of the zero, s, p d- and f-block elements	1, 5	An
CO 3	Explain the general characteristics and diagonal relationship of alkali and alkali earth metals and discuss the preparation and uses of their compounds	1	Un
CO 4	Describe the extraction and uses of various lanthanide and actinide compounds.	1, 5, 7	Un
CO 5	Derive equations for reactions of compounds of the zero group elements	1, 3	Ap
CO 6	Compare the different shapes of compounds of noble gases	3, 4	Ap
CO 7	Apply the knowledge about interfering radicals, common ion effect and solubility product	1, 4, 7, 8	Ap
CO 8	Communicate the concepts and results of their laboratory experiments clearly and concisely to both chemists and non-chemists through effective writing and oral communication skills	1, 2 7, 8	Ev

**SEMESTER- II****Part III                      Core IV                      Organic Chemistry-I****Code :18UCHC22****Hrs/Week:4****Hrs/ Sem: 60****Credits:4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	Prepare alcohols and summarize their properties, Distinguish between 1°, 2° & 3° alcohols, Recognise the differences between the acidities of alcohols and phenols	1,3,6	Ev,An,Re
CO 2	Reframe the alcohol series, Justify the effect of substituent on the acidity of phenols, Know the preparation and uses of thioalcohols	1,2,3,6	Cr,Re
CO 3	Estimate alkoxy group by Ziesel's method	1,2	Cr
CO 4	Compare ethers and alcohols, nitroalkanes and alkyl nitrites, Differentiate 1°, 2° & 3° amines by reactions	1,3	An
CO 5	Justify the effect of substituent on the basicity of aromatic amines	1,3	Cr
CO 6	Recall the synthetic importance of organometallic compounds, Recognise Frankland reagent and its significance	1,6,7	Re
CO 7	Illustrate the theory of resonance and tautomerism	1,3	Un
CO 8	Identify the product of rearrangement reactions such as pinacol-pinacolone, Benzil-Benzilic acid, Curtius, Lossen, Favorskii and Fries rearrangement.	1,3	An

**SEMESTER - II****Allied****Allied Mathematics –III****18UMAA21****Hrs / Week: 3****Hrs / Semester: 45****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Identify the difference between partial differential equation and ordinary differential equation	1	An
CO-2	Form the partial differential equation	6	Cr
CO-3	Classify various types of partial differential equations	3	Un
CO-4	Apply Laplace transform on functions	8	Ap
CO-5	Understand inverse Laplace transform	4	Un
CO-6	Solve differential equation using Laplace transform	5	An
CO-7	Identify Beta integrals and Gamma integrals	2	Ap
CO-8	Understand the concept of Beta and Gamma functions.	7	Un



**SEMESTER – II****Part III Allied****Mathematics – IV****18UMAA22****Hrs / Week: 3****Hrs / Semester: 45****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Use the Jacobian to change variables to ease integration	1, 3	Un
CO-2	Evaluate line integrals	3	Ev
CO-3	Set up the regions and integrate double integrals in rectangular and polar coordinates	2	Re, Ev
CO-4	Set up and evaluate triple integrals	3	Re, Ev
CO-5	Use Green's theorem to evaluate line integrals along simple closed contours on the plane.	10	Cr
CO-6	Apply Stokes' theorem to compute line integrals along the boundary of a surface.	7,9	Ap
CO-7	Use Stokes' theorem to give a physical interpretation of the curl of a vector field.	8,9	An
CO-8	Use the divergence theorem to give a physical interpretation of the divergence of a vector field.	8, 9	Ap

**SEMESTER II****Part III****Allied Biochemistry -II****Code: 18UBCA21****Hrs/Week : 4****Hrs/ Sem : 60****Credits : 3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	Discuss in detail about the nutritional values of milk, egg, meat, fish, vegetable foods, fruits, tea, coffee, cocoa and alcohol. Analyse the physio-chemical interactions between diet ingredients.	1,3	Un,An
CO 2	Categorize energy yielding foods, body building foods and protective foods. Assess effect of drugs on food intake, body weight, nutrient requirements and growth, vitamins and minerals.	1,5	An,Cr
CO 3	Demonstrate the theories of biological oxidation decarboxylation, electron transport system and oxidative phosphorylation.	6	Ap
CO 4	Describe the functions of blood. Discuss in brief about red blood cells, white blood cells, blood platelets, plasma and plasma protein.	1	Un
CO 5	Identify the variation in structure of hemoglobin with reduced solubility and altered oxygen affinity.	2	Re
CO 6	Formulate how the transport of oxygen by blood and carbon-di-oxide in blood taking place.	1	Ev
CO 7	Interpret the role of kidneys in acid-base balance, Relate the physical and chemical transport of blood,	2,6	Cr,Ap
CO 8	Compare the relation between optical and electron microscope, Identify the separated components using paper as well as gel electrophoresis.	1,2	An,Re

SEMESTER- III			
Core V		Physical Chemistry-I	
Code : 18UCHC31	Hrs/Week : 4	Hrs/ Sem : 60	Credits : 4

**Course Outcome :**

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	have an overall knowledge about liquid and gaseous states of matter	1,2 , 3	Re
CO- 2	explain the relationship between kinetic energy and temperature of a gas; between temperature and the velocity of a gas; and between molar mass and the velocity of a gas.	1,3	Un
CO- 3	understand the basis of nuclear forces , nuclear stability , radioactivity and nuclear reactions	1,2,4	Un
CO- 4	interpret phase rule	1,3,4	Ev
CO- 5	prioritise the phenomenon of catalysis in industry and biological systems and learn the basic concepts of adsorption and its applications in various walks of life	1 , 2,5,7,8	Ap
CO- 6	enumerate the general characteristics of catalytic reactions and thorough knowledge of the theory behind homogeneous and heterogeneous catalysis	1 ,2,7	Re
CO- 7	distinguish adsorption/desorption and the kinetics of catalytic reactions on a surface.	3,4,5,7,8	An
CO- 8	justify the significance of Freundlich, Langmuir isotherms and BET isotherm	1,2	Ev

**SEMESTER- III****Allied Physics – Paper I**

<b>Code : 18UPHA31</b>	<b>Hrs/Week : 4</b>	<b>Hrs/ Sem : 60</b>	<b>Credits : 3</b>
------------------------	---------------------	----------------------	--------------------

**Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	Define fundamentals of elasticity and discuss concepts of stress and strain and the relationship between both, use the stress-strains equations to solve the problems of elastic modes	1	Re, Un
CO-2	Solve problems related to uniform and non-uniform bending of beams	1	An
CO-3	Define the terms viscosity and surface tension	1	Re
CO-4	Describe the properties of fluids such as viscosity, surface tension and capillary rise and evaluate the value of coefficient of viscosity	1, 2, 6	Un, Ev
CO-5	Estimate the thermal conductivity of a bad conductor	1	Ev
CO-6	Calculate the specific heat capacity of a liquid	1, 6	An
CO-7	Calculate the thickness of a thin wire by forming interference fringes	1, 2, 6	An
CO-8	Assess the dispersive power and resolving power of a grating	1, 2, 6	Ev



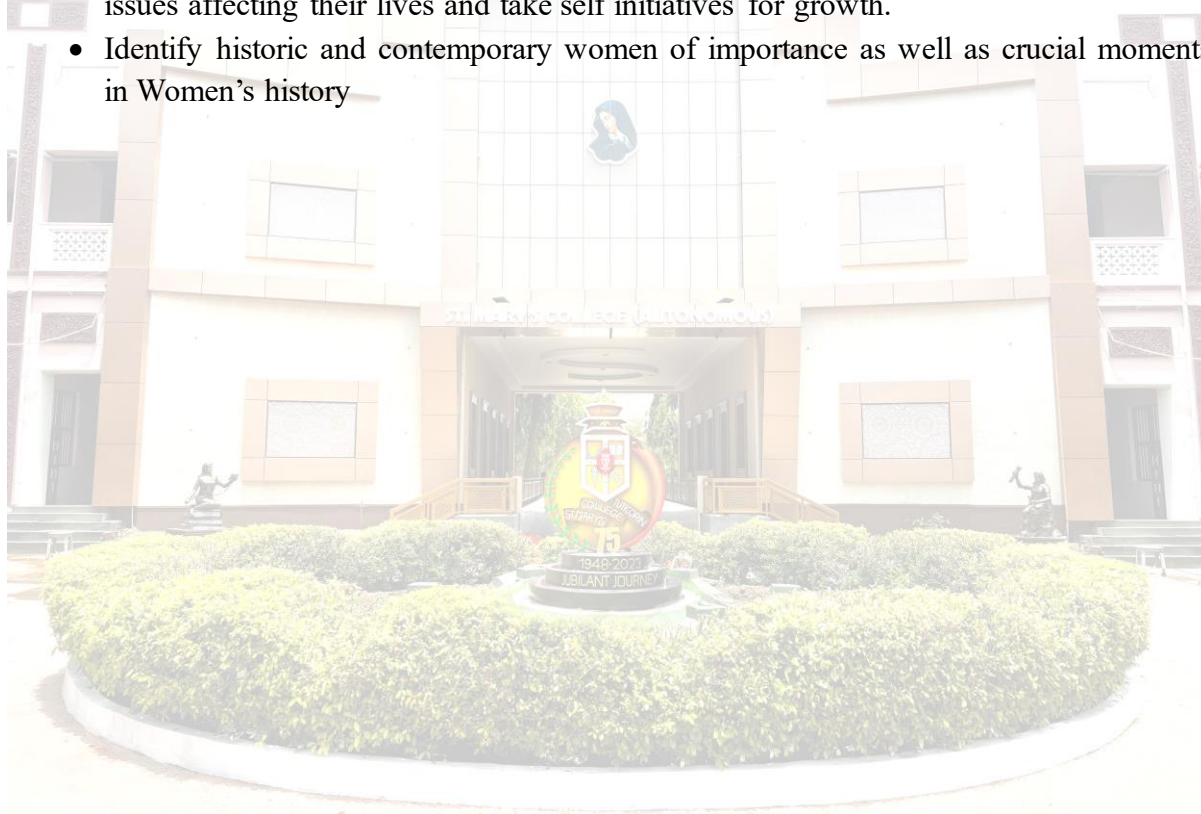
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



SEMESTER- IV			
Core VI		Organic Chemistry-II	
Code :18UCHC41	Hrs/Week:4	Hrs/ Sem: 60	Credits:4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	interpret the elements of symmetry, chirality	1	Un
CO - 2	explain the rules of stereochemical configuration to perspective drawings, Newman projections and Fischer projections Apply the Cahn Ingold Prelog rule for ascertaining the geometric configuration (cis or trans and/or E or Z) of disubstituted cycloalkanes	2	Un, Ap
CO - 3	define Sachse Mohr theory – Newman projection, Sawhorse & Fischer formulae Know about the conformational analysis	1	Re
CO - 4	classify carbohydrates and compare and contrast the reactions and structure of glucose and fructose Illustrate the structure and reactions of carbohydrates	5,6	Un
CO - 5	discuss epimerization and mutarotation	1	Un
CO - 6	demonstrate various Theories of colour and constitution, know the applications of dyes .	1	Ap, Re
CO - 7	synthesize and Characterize acetoacetic ester, malonic ester and cyanoacetic ester	5,7	Cr
CO - 8	recall the preparation of NBS and wilkinsons catalyst Prepare reagents in organic synthesis like Lithium Aluminium hydride, Periodic acid, Sodamide, Selenium dioxide, lead tetra acetate, Osmium tetroxide, Raney nickel, Sodium borohydride	3, 8	Re
		4	Cr

**SEMESTER – IV****Allied Physics - Paper II****18UPHA41****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Apply the Gauss law in calculation of electric fields due to various charge distributions and understand coulomb's law which gives an idea about the electrostatic force between point charges	1	Ap, Un
CO-2	Define and explain self and mutual inductance	1	Re, Un
CO-3	Employ Lenz law and Faraday's law for magnetically coupled circuits	1	An
CO-4	Apply knowledge of electricity and magnetism to explain the nature of physical process and related technological advances	1	Ap
CO-5	Understand the principle of energy release in nuclear reactions and identify the present energy scenario and the need for energy conservation	8	Un
CO-6	Examine the structure of various number system and its application in digital design	6, 8	Un, An
CO-7	Analyse the environmental aspects of renewable energy sources	5	An
CO-8	Acquire the knowledge of solar cells, photovoltaic cells, wind energy and solar energy principles and applications	5	Un

## SEMESTER IV

**Core Skill Based**

**Pharmaceutical Chemistry**

**Code :18UCHS41**

**Hrs/Week: 4**

**Hrs/ Sem : 60**

**Credits: 4**

### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	understand the importance of drugs and their mode of action	4	Un
CO - 2	know the causes of common diseases and their treatment	3, 4, 7	Re
CO - 3	apply Indian medicinal plants for treatment.	3	Ap
CO - 4	aware about first aid rules and first aid box	4, 7	Ap
CO - 5	predict common poisons and their antidotes.	3, 4, 7	Ev
CO - 6	estimate the sugar and cholesterol levels in blood.	4, 5, 7	Ev
CO - 7	describe about the cardiovascular drugs	3, 4, 7	Un
CO - 8	know about diabetics and its treatment	4, 7	Re



**SEMESTER- V****Core VII (Common Core) Solid State and Material science****Code : 18UPCC51****Hrs/Week : 6****Hrs/ Sem : 90****Credits : 4****Course Outcome**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	understand the basic symmetry elements and operations of crystals.	1, 2	Un
CO - 2	distinguish the types of crystals and enumerate the various crystal imperfections.	3,4	An
CO - 3	get a clear knowledge about metallic glasses, ceramics and biomaterials.	1, 3, 5,7, 8	Re
CO - 4	justify the wave nature of matter and its experimental study.	1,3	Ev
CO - 5	apply Bragg's law for x-ray study.	2	Ap
CO - 6	distinguish magnetic materials based on susceptibility.	2	An
CO - 7	usage of magnetic materials in various field.	2	Ap
CO - 8	discuss the synthesis methods of nano materials.	2	Un

SEMESTER- V			
Core VIII		Organic Chemistry III	
Code :18UCHC52	Hrs./Week:5	Hrs/ Sem: 75	Credits:4

#### Course Outcome

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	compare the general reactions of aldehydes and ketones	5	Ap
CO - 2	explain the mechanism of Claisen, Benzoin, Perkin, Knoevenagel reaction- Wittig reaction-iodoform reaction explain the factors influencing strength of acid-effect of substituent in benzene ring	2	Un
CO - 3	generalize the properties of carbonyl and carboxyl compounds	1,6	Cr
CO - 4	classify the polynuclear hydrocarbons Structure Elucidation of alizarin	1.5	Ap, Cr
CO - 5	state synthons and synthetic equivalent- Protection and deprotection of different groups	3	Re
CO - 6	explain Retrosynthesis of 5-hexanoic acid	1,3,6	Un
CO - 7	apply green chemistry in day-to-day life, dry cleaning, versatile bleaching agent	4,7	Ap
CO - 8	implement an awareness about green chemistry and the methods of microwave assisted synthesis	3,8	Ap

**SEMESTER V****Core IX****Physical Chemistry II****Code :18UCHC53****Hrs/Week : 5****Hrs/ Sem : 75****Credits : 4****Course Outcome**

CO.No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO - 1	understand the kinetics of the reaction and to determine the reaction mechanism	1	Un
CO - 2	apply reaction kinetics to determine the rate of chemical reactions; understand the factors that influence rates of reaction.	2, 3	Ap
CO - 3	summarize the chemical reactions under light and sound	3	Un
CO - 4	outline the principle behind sonochemical reactions	3	Re
CO - 5	apply the concept of group theory to various molecules	1	Ap
CO - 6	have a thorough knowledge of symmetry elements, symmetry operations and point groups	1, 2	Re
CO - 7	build an Elementary treatment of Debye-Huckel theory of strong electrolytes, conductometric titrations, hydrolysis and calculation of pH.	1, 3	An
CO - 8	probe into the importance of electrochemistry and its application	4	Ev

**SEMESTER- V****Core Integral I****Essentials of Inorganic Chemistry****Code :18UCHI51****Hrs./Week:4****Hrs/ Sem: 60****Credits:4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	provide knowledge about non-aqueous solvents	1	Un
CO - 2	helps to learn the positions of the zero, d– and f-block elements in the periodic table	1	Ev
CO - 3	explain the general characteristics of non-aqueous solvents d– and f–block elements and the general horizontal and group trends in them	1	Ap
CO - 4	recall relevant oxidation states for the zeros, d and f block elements	1	Re
CO - 5	appreciate the relative stability of various oxidation states in terms of electrode potential values	1, 7	Ev
CO - 6	derive equations for reactions of compounds of the zero , d and f block elements	1, 2, 8	Cr
CO - 7	describe the synthesis of the zeros, d and f block elements	3, 5, 6	Ap
CO - 8	recall the structures, the properties, applications of silicones and silicates	1, 2	Re



## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

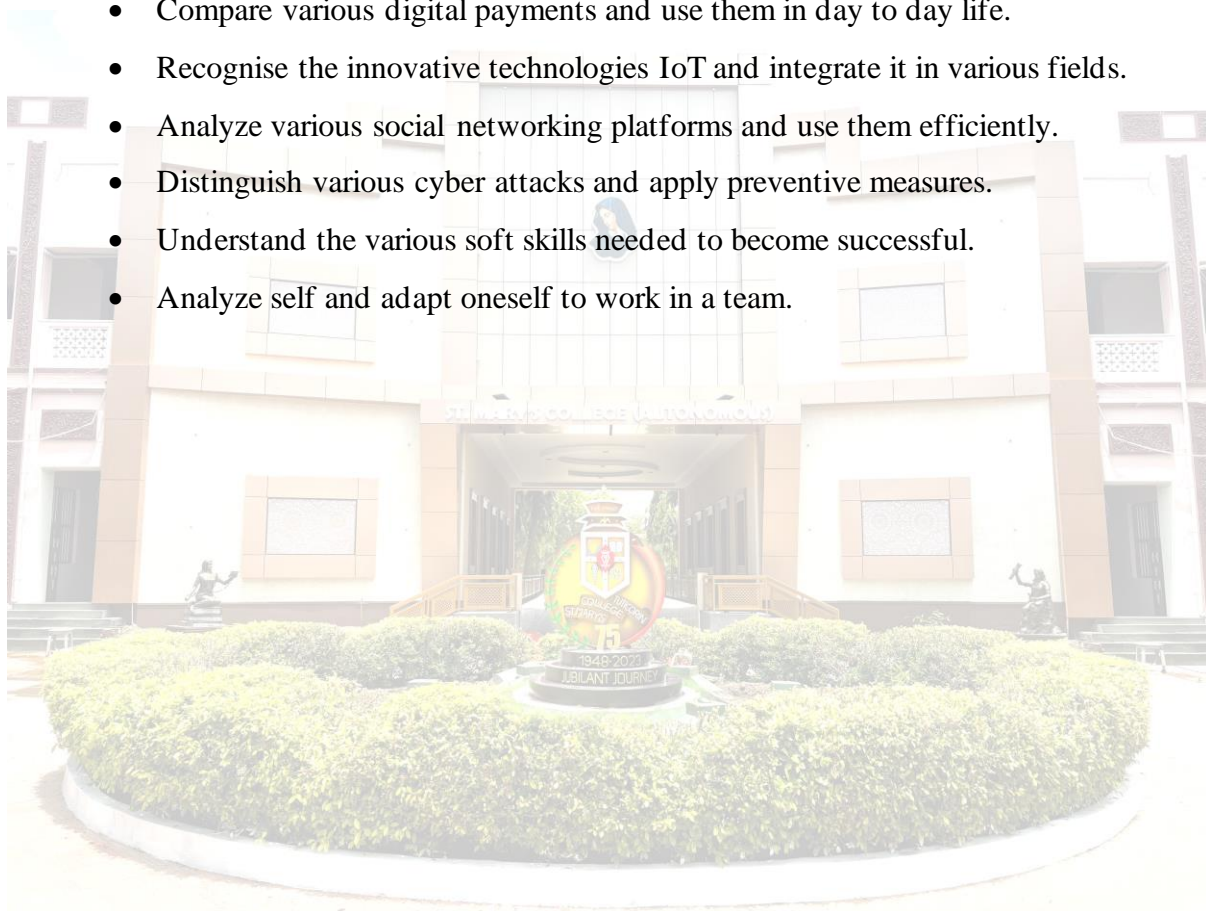
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



**SEMESTER- VI****Core X****Inorganic Chemistry - II****Code :18UCHC61****Hrs./Week:4****Hrs/ Sem: 60****Credits:4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	acquire knowledge in the chemistry of coordination compounds and their properties.	1	Un
CO - 2	characterize and synthesize of coordination compounds	1, 5,6	Ap
CO - 3	explain the definition of coordination compounds, naming them and decide isomerism	1	Re
CO - 4	describe the formation and bonding in coordination compounds	1, 6	An
CO - 5	grasp the knowledge of bonding in metal carbonyls	1, 2	Re
CO - 6	identify the structure and bonding in metal carbonyls of mono, bi nuclear and poly nuclear carbonyls	3, 6	Ap
CO - 7	formulate independent research ideas in the field of bioinorganic chemistry	1, 3, 7	Cr
CO - 8	recall the importance of metals in biological systems and the application of metal chelates in various fields	1, 4, 8	Re

SEMESTER- VI			
Core XI		Organic Chemistry-IV	
Code :18UCHC62	Hrs./Week: 4	Hrs/ Sem: 60	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	identify the type of the photochemical and thermal reactions	1,7	Re
CO - 2	Understand the important applications of photochemistry in organic compounds	1	Un
CO - 3	illustrate the mechanisms of specific reactions	1	Ap
CO - 4	know about the importance of heterocyclic compounds, alkaloids and terpenes Identify the nature of compounds in heterocyclic compounds	1, 5	Re
CO - 5	apply the methods of extraction of Alkaloids	1, 2,6	Ap
CO - 6	compare quinoline and isoquinoline	1,4	Ap
CO - 7	analyse amino acid spectrophotometrically	1, 2, 8,	An
CO - 8	recall the colour reactions of proteins	1, 3	Re
	Classify the structure of DNA and RNA	5	Un

**SEMESTER VI****Core XII****Physical Chemistry III****Code :18UCHC62****Hrs/Week : 5****Hrs/ Sem : 75****Credits : 4****Course Outcome**

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO - 1	study various thermodynamic parameters and its applications in different physical states of the systems	1 ,2 , 3	Re
CO - 2	understand the kinetics of the reaction and to determine the reaction mechanism	1,2,4	Re
CO - 3	apply reaction kinetics to determine the rate of chemical reactions; understand the factors that influence rates of reaction.	1,2 , 3,5	Ap
CO - 4	catagorise fundamental uniqueness of the chemical and physical properties of nanomaterials and their potential impact in science, engineering, medicine, and the environment	1,2 , 3,5	An
CO - 5	outline the concepts of top down and bottom up methods of nanomaterials preparation	2, 3,5,6	An
CO - 6	have a thorough Learning of miscible and immiscible liquids	2,3,4	Re
CO - 7	comparison of vapour pressure of partially miscible liquids and mixture of immiscible liquids and understand the theory of fractional distillation and steam distillation and its applications.	2,3	An
CO - 8	outline the statement of Nernst distribution law , its deviations and applications	1, 2,3,4	An



**SEMESTER- VI****Core Integral II****Spectroscopy****Code : 18UCHI61****Hrs/Week : 4****Hrs/ Sem : 60****Credits : 4****Course Outcome**

CO No.	Upon completion of this course, students should be able to:	PSO addressed	CL
CO - 1	have a basic knowledge of electromagnetic spectrum and various types of spectra	1 , 2 , 3	Re
CO - 2	understand the theory , instrumentation and applications of rotational spectroscopy	1, 2	Un
CO - 3	know the types of electronic transitions and various selection rules	1,3	Re
CO - 4	apply Woodward-Fieser rule for calculation of absorption maxima of dienes and $\alpha$ , $\beta$ unsaturated ketones and enumerate the applications of UV spectroscopy in coordination complexes.	2, 3,6	Ap
CO - 5	generalise the theoretical principle, selection rules and instrumentation of IR and Raman spectroscopy	1, 2,4,6	Cr
CO - 6	categorise IR absorption frequencies and applications of IR and Raman spectroscopy	1 , 2,4	An
CO - 7	assess $C^{13}$ NMR and the principle behind $31P$ , $19F$ and $15N$ NMR , Magnetic Resonance Imaging and applications of NMR spectroscopy.	1 ,2 ,4,6,7,8	Ev
CO - 8	know the basic principles and instrumentation of mass spectrometry	3,7,8	Re

### SEMESTER- VI

Core Integral III		Selected Topics In Chemistry	
Code :18UCHI62	Hrs/Week:5	Hrs/ Sem: 75	Credits: 4

#### Course Outcome :

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO - 1	have a basic knowledge about milk and its composition	1 , 2 , 3	Re
CO - 2	understand the theory behind fermented milks	1, 2	Un
CO - 3	know the types of different types of purification techniques	1,3	Re
CO - 4	apply Chromatographic techniques for the recovery of Organic substances	2, 3,6	Ap
CO - 5	generalize the types of corrosion	1, 2,4,6	Cr
CO - 6	categorize the constituents of paint and its uses	1 , 2,4	An
CO - 7	assess the properties of conductive polymers	1 ,2 ,4,6,7,8	Ev
CO - 8	know the preparation of synthetic polymers	3,7,8	Re

**SEMESTER- I****Part III                      Core I      General Chemistry - I****Course Code :21UCHC11****Hrs/Week:6****Hrs/ Sem: 90****Credits:5****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	explain the periodic properties of the different groups of compounds focusing on production methods.	1	Un
CO 2	arrange the nomenclature of different class of organic compounds and identify polarization of a bond with electronegativity.	1,3	Re
CO 3	discuss the fundamental concept of quantum mechanics.	1	Un
CO 4	understand quantum numbers and to know the rules for filling up of orbitals and predict electronic arrangement in orbits.	4	Un
CO 5	explain the basis of fundamental particles, nuclear forces, nuclear stability, natural and artificial radioactivity thereby apply the theory of radioactivity and nuclear reactions in various fields.	1,5	Un
CO 6	apply the knowledge about interfering radicals, common ion effect and solubility product.	8	Ap

SEMESTER – I			
Part III Allied – I		Allied Mathematics – I	
Course Code : 21UMAA11	Hrs / Week: 6	Hrs / Semester: 90	Credits: 4

**Course Outcome :**

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	the equations from the given roots & approximate solutions of equations by applying Horner's method and Newton's method	2	Un
CO-2	develop and apply concepts of expressions and equations to investigate and describe relationships	4	An
CO-3	evaluate eigen values and eigen vectors of square matrices and make use of the properties of determinants in their calculation.	3	Ev
CO-4	calculate the radius of curvature, centre and circle of curvature.	1	Ev
CO-5	compute the gradient of a scalar valued function, curl and divergence of vector fields	1	Cr
CO-6	interpret basic definitions and classify the differential equations with respect to their order and linearity	2	Un



SEMESTER I			
Part III Allied – I		Allied Biochemistry -I	
Course Code: 21UCBA11	Hrs/Week : 4	Hrs/ Sem : 60	Credits : 3

**Course Outcome :**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	express chemical composition and the elements of life.	1,2	Un
CO 2	evaluate the importance of bioenergetics.	1	Ev
CO 3	demonstrate about the various energy rich compounds such as adenosine triphosphate, guanosine triphosphate, uridine triphosphate, cytidine triphosphate and acyl phosphate.	6	Ap
CO 4	distinguish water soluble and fat-soluble vitamins and analyze their composition, functions and deficiency symptoms.	2	An
CO 5	generate the knowledge on hormones producing organs and their functions and to know about the plant as well as animal hormones.	5	Cr ,Re
CO 6	evaluate the antibiotics role in affecting cell wall synthesis, cytoplasmic membrane and enzyme systems.	2,7	Ev

## SEMESTER I

### Skill Enhancement Course – I Professional English for Chemistry - I

Course Code: 21UCHPE1	Hrs/Week : 2	Hrs/ Sem : 30	Credits : 2
-----------------------	--------------	---------------	-------------

#### Course Outcome :

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	discuss their capability in using the language English in Chemistry.	8	Un
CO 2	express the Language in a confident manner.	8	Un
CO 3	analyse the need of the English language and its role.	8	An
CO 4	demonstrate the importance of writing English.	8	Ap
CO 5	interpret the importance of listening and to develop knowledge and to improve competency..	8	Cr, Ev
CO 6	identify the professional skills and identify the language level by themselves.	8	Re

SEMESTER - I			
Ability Enhancement Course -Value Education			
Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

SEMESTER- II			
<b>Part III</b>	<b>Core II</b>	<b>General Chemistry-II</b>	
<b>Course Code :21UCHC22</b>	<b>Hrs/Week:6</b>	<b>Hrs/ Sem: 90</b>	<b>Credits:5</b>

**Course Outcome :**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	recall the methods of purification of ores	1	Re
CO 2	illustrate the concept behind the different types of furnaces	1	Un
CO 3	explain the general characteristics and digital relationship of alkali and alkaline earth metals and discuss the preparation and uses of some alkali and alkaline earth metal compounds	2, 3	Un
CO 4	interpret the elements of symmetry, chirality, Newman projection ,Sawhorse & Fischer formulae and apply the Cahn Ingold Prelog rule for ascertaining the geometric configuration (cis or trans and/or E or Z)	1, 2	Un, Ap
CO 5	predict the mechanism of aromatic substitution reactions and effect of o, m& p directing group and compare terminal & non-terminal alkynes, the acidic nature of acetylenic hydrogen	3, 6	Ap, An
CO 6	apply the principle of colligative properties in day to day life like kidney dialysis, reverse osmosis and describe the experimental methods of determining the colligative properties	4,5	Re Ap



SEMESTER-II			
Part III Allied - I		Allied Mathematics-II	
Course Code : 21UMAA21	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	POs addressed	CL
CO-1	identify the difference between partial differential equation and ordinary differential equation	1	An
CO-2	classify various types of partial differential equations and form the partial differential equation	3	Un
CO-3	solve differential equations using Laplace transform	5	An
CO-4	set up the regions and integrate double integrals in rectangular and polar coordinates.	2	Ev
CO-5	use Green's theorem to evaluate line integrals along simple closed contours of the plane	1	Cr
CO-6	identify and understand the concept of Beta integrals and Gamma integrals	3	Ap

<b>SEMESTER II</b>			
<b>Part III Allied - I</b>		<b>Allied Biochemistry –II</b>	
<b>Course Code: 21UCBA21</b>	<b>Hrs/Week : 4</b>	<b>Hrs/ Sem : 60</b>	<b>Credits : 3</b>

### Course Outcomes

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSOs addressed</b>	<b>CL</b>
CO 1	discuss in detail about the nutritional values of milk, egg, meat, fish, vegetable foods, fruits, tea, coffee, cocoa and alcohol.	1	Un
CO 2	demonstrate the theories of biological oxidation decarboxylation, electron transport system and oxidative phosphorylation.	5	Ap
CO 3	describe the functions of blood and to discuss in brief about red blood cells, white blood cells, blood platelets, plasma and plasma protein.	6	Re
CO 4	evaluate how the minerals are important in our life interpret the various minerals and their recommended levels in food.	1	Ev
CO 5	analyse the relation between optical and electron microscope.	2	An
CO 6	develop the knowledge on instrumentation technique and to generate the real applications.	2	Cr

## SEMESTER II

### Skill Enhancement Course – II Professional English for Chemistry - II

Course Code: 21UCHPE2	Hrs/Week : 2	Hrs/ Sem : 30	Credits : 2
-----------------------	--------------	---------------	-------------

#### Course Outcomes

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	express the Language without fear.	8	Un
CO 2	apply easily into the workplace environment.	8	Ap
CO 3	develop the real values of English and to identify the hidden potential of their own competence.	8	Cr
CO 4	evaluate with the comprehensional activities and exercises.	8	Ev
CO 5	identify themselves attend the interview with boldness and enthusiastically.	8	Re
CO 6	analyse the impact of English in education.	8	An

**SEMESTER- III****Core III****Physical Chemistry-I****Course Code : 21UCHC31****Hrs/Week : 4****Hrs/ Sem : 60****Credits : 4****Course Outcome:**

CONo.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	identify the phenomenon of catalysis in industry and biological systems and learn the basic concepts of adsorption and its applications in various walks of life	1	Re
CO- 2	discuss kinetic theory of gases and its relation with temperature and velocity of a gas and understand the deviation of gases from ideal behaviour using Van der Waal's equation	1,3	Un
CO- 3	classify, compare and discuss the preparation method and properties of colloids and also know the importance of colloids in day to day life,	1,2,7	Ap
CO-4	outline the statement of Nernst distribution law, its deviations and applications	2,3,4	An
CO- 5	compare the vapour pressure of partially miscible liquids and mixture of immiscible liquids and understand the theory of fractional distillation and steam distillation and its applications.	2,3	An
CO-6	appraise the chemistry behind the reversible reactions and nature of chemical equilibrium and apply Lechatelier's principle in various aspects.	1,2,3,4,	An



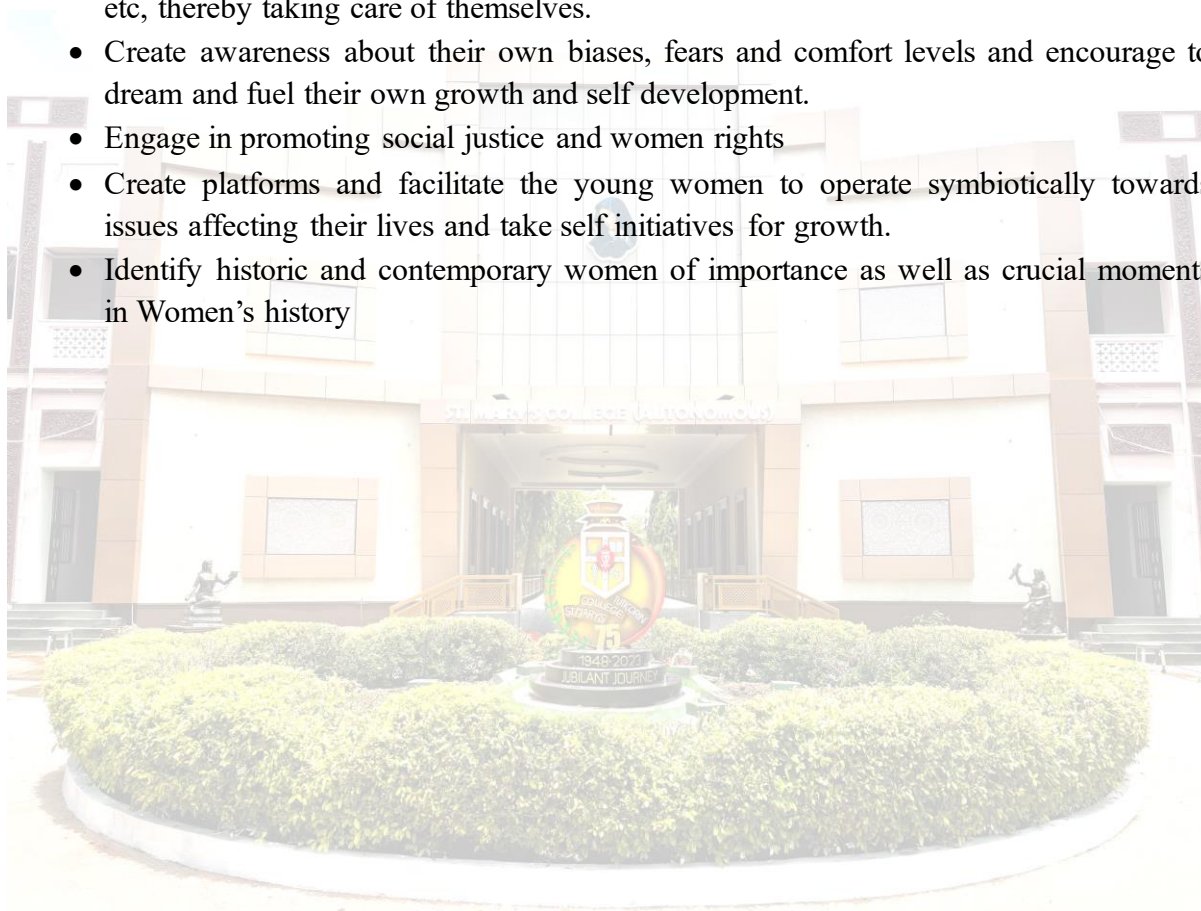
**SEMESTER I / III****Allied Physics – Paper I - I B.Sc., Mathematics / II B.Sc., Chemistry****Course Code : 21UPHA31****Hrs/Week: 4****Hrs/ Semester: 60****Credits : 4****Course Outcome**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	recall the fundamentals of elasticity, stress and (K1)	1	Re
CO-2	solve problems related to uniform and non-uniform bending of beams (K3)	1	Ap
CO-3	estimate the thermal conductivity of a bad conductor (K2)	1,6	Un
CO-4	calculate the specific heat capacity of a liquid (K3)	1,6	Ap
CO-5	evaluate the thickness of a thin wire by forming interference fringes (K5)	1,6	Ev
CO-6	outline dispersive power and resolving power of a grating (K4)	1,6	An

Semester – III			
Women's Synergy			
Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2

### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER- IV****Core IV****Organic Chemistry-I****Course Code :21UCHC41****Hrs/Week:4****Hrs/ Sem: 60****Credits:4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	compare alcohols, nitroalkanes and alkyl nitrites, differentiate 1°, 2° & 3° amines by reactions and criticize the effect of substituent on the basicity of aromatic amines.	1,3	An, Ev
CO -2	compile and characterize acetoacetic ester and malonic ester and define Sachse Mohr theory – Newman projection, Sawhorse & Fischer formulae and describe about the conformational analysis.	1, 5,7	Ap, Re
CO -3	recall the synthetic importance of organometallic compounds, explain Frankland reagent and its significance.	1,6,7	Re, Un
CO -4	describe the preparation and properties of Thioalcohols and Mustard gas.	1, 5	Re
CO- 5	classify carbohydrates and compare and contrast the reactions and structure of glucose and fructose. Illustrate the structure and reactions of carbohydrate and discuss epimerization and mutarotation.	5,6,1	Ap, An, Un
CO -6	illustrate the theory of resonance and tautomerism and identify the product of rearrangement reactions such as pinacol-pinacolone, Benzil-Benzilic acid, Curtius, Lossen, Favorskii and Fries rearrangement.	1,3	Un, Re

**SEMESTER- IV****Skill Based Elective I****Medicinal Chemistry****Course Code : 21UCHS41****Hrs/Week : 2****Hrs/ Sem : 30****Credits : 2****Course Outcome:**

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	have an understanding about the classification of drugs and their mode of action.	1,4	Un
CO- 2	know the causes of common insect borne, air borne and water borne diseases and get an idea about the treatment for common diseases.	4, 5,7	Re
CO- 3	estimate the sugar and cholesterol levels in blood.	4, 5, 7	Ev
CO-4	aware about first aid rules and first aid box.	4	Ap
CO-5	know the types of blood pressure, treatment methods and about the cardiovascular drugs.	1,2,4,5	Un
CO-6	know about diabetics, its treatment methods and get an idea about some anti-convulsant agents.	4, 5	Re



## SEMESTER IV

Core Skill Based

Forensic Chemistry

Course Code :21UCHS42

Hrs./Week:2

Hrs/ Sem 30

Credits:2

### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	explain the origin of forensic science.	4	Un
CO - 2	distinguish the forms of finger printing.	1	Un
CO - 3	demonstrate the methods used in the detection of finger prints.	5	Ap
CO - 4	describe the different types of blood stains	4, 7	Re
CO - 5	explain the investigations in arson sites.	3, 4	Un
CO - 6	demonstrate the explosive investigations in various sites	4	Ap

<b>SEMESTER- V</b>			
<b>Core V (Common Core)</b>		<b>Material Science</b>	
<b>Course Code : 21UPCC51</b>	<b>Hrs/Week : 6</b>	<b>Hrs/ Sem : 90</b>	<b>Credits : 5</b>

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	identify the basic symmetry elements and operations of crystals, distinguish the types of crystal systems and enumerate the various crystal imperfections.	1	Re
CO – 2	rank the properties of new materials like metallic glasses, shape memory alloys, high temperature materials, smart materials and biomaterials and apply them in various walks of life	7	Ev
CO – 3	justify the wave nature of matter and its experimental study and apply Bragg's law for x-ray study.	1,2,3	Ev
CO – 4	distinguish magnetic materials based on susceptibility.	2	An
CO – 5	summarise the uses of magnetic materials in various field.	2	Un
CO – 6	outline the synthesis methods of nano materials.	2	An

**SEMESTER- V****Core VI****Inorganic Chemistry-I****Course Code :21UCHC51****Hrs./Week:4****Hrs/ Sem: 60****Credits:4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	extend knowledge about non-aqueous solvents.	1	Un
CO - 2	find the positions of the zero, d– and f block elements in the periodic table.	1	Re
CO - 3	explain the general characteristics of non-aqueous solvents d– and f–block elements and the general horizontal and group trends in them.	1	Un
CO - 4	compare the relative stability of various oxidation states in terms of electrode potential values.	1, 5	An
CO - 5	analyze the reactions of compounds of halogens, d and f block elements.	1, 5	An
CO - 6	summarize the structures, the properties, applications of silicones and silicates.	1, 2	Un

SEMESTER- V			
Core VII		Organic Chemistry II	
Course Code :21UCHC52	Hrs./Week:5	Hrs/ Sem: 75	Credits:5

**Course Outcome:**

CONo.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	recall the alcohol series, illustrate the effect of substituent on the acidity of phenols and explain the mechanism of Claisen, Benzoin, Perkin, Knoevenagel reaction- Wittig reaction-iodoform reaction	1,2,3,6	Re, Un
CO - 2	rewrite the properties of carbonyl and carboxyl compounds and explain the factors influencing strength of acid -effect of substituent in benzene ring	1, 2, 6	Cr, Un
CO -3	identify the type of the photochemical and thermal reactions and interpret the important applications of photochemistry in organic compounds.	1,7	Re, Un
CO – 4	recall the importance of heterocyclic compounds, alkaloids and terpenes	1, 4	Re
CO-5	predict the nature of compounds in heterocyclic compounds compare quinoline and isoquinoline	5	Ap
CO - 6	recall the preparation of NBS and wilkinsons catalyst and produce reagents in organic synthesis like Lithium Aluminium hydride, Periodic acid and illustrate the mechanisms of Reformatsky reaction- Cope elimination- Bayer-villiger oxidation	1,3,4	Re Cr Un



**Semester - V**

**SEMESTER- V**

**Core VIII**

**Physical Chemistry-II**

**Course Code : 21UCHC53**

**Hrs/Week : 5**

**Hrs/ Sem : 75**

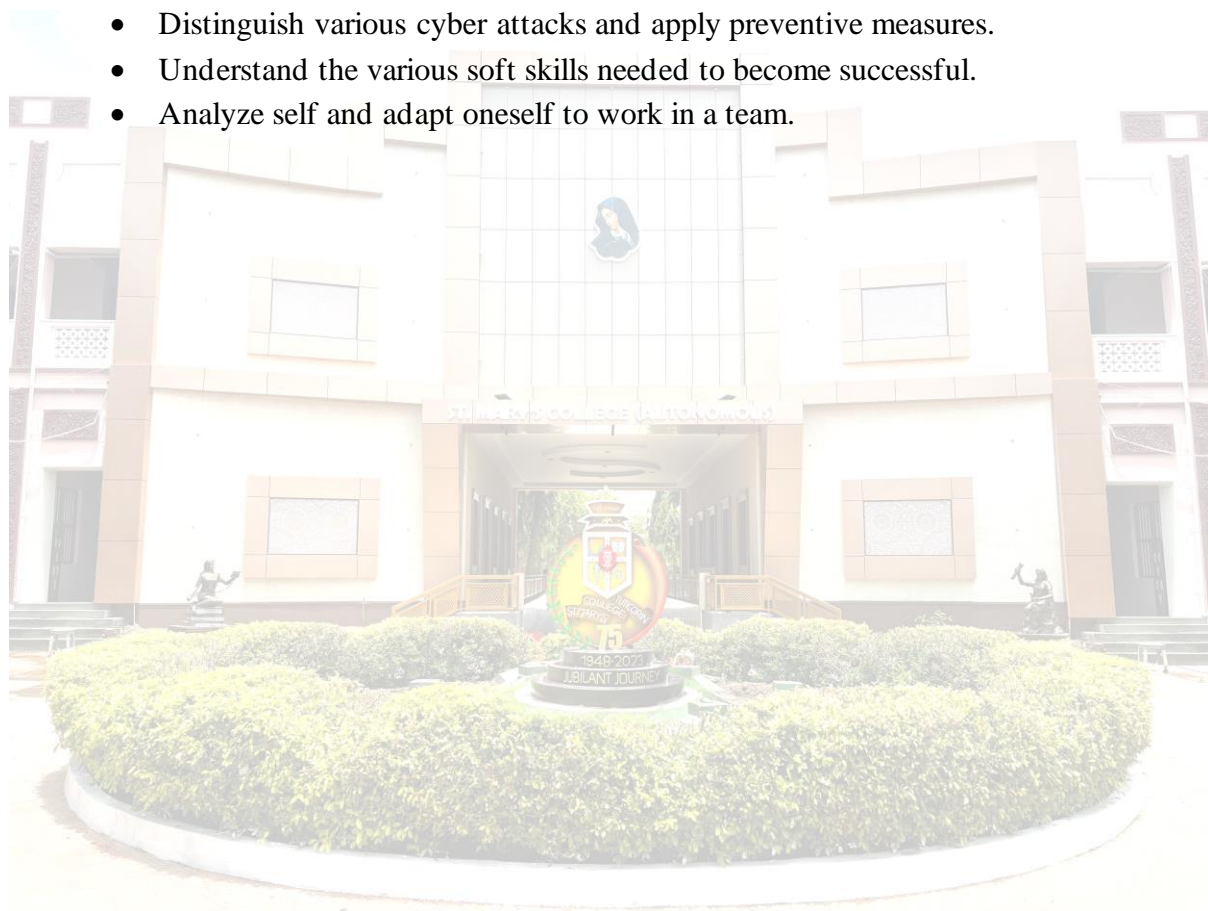
**Credits : 5**

**Course Outcome**

CONo.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	list various thermodynamic parameters and its applications in different physical states of the systems and have a study about the first law of thermodynamics.	1 ,2 , 3	Re
CO- 2	interpret the concept of entropy and Second law of thermodynamics.	1,3	Un
CO- 3	relate the significance and application of Claussius-Claypeyron equation.	1,2,5	Ap
CO-4	analyse the concept of fugacity, Nernst heat theorem and third law of thermodynamics.	1, 3,4	An
CO- 5	appraise the concept of EMF, electrochemical series and its significance, concentration cells and applications of e.m.f.	2,3	An
CO-6	outline the importance of electrochemistry and its industrial application.	1,3	An

**Common Skill Based Core****Computer for Digital Era and Soft Skills****Code : 21UCSB51****Hrs / Week : 2****Hrs / Sem : 30****Credits : 2****Course Outcome**

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.

**SEMESTER- VI**

Criterion I

SSR Cycle V

Core IX Inorganic Chemistry - II			
Course Code :21UCHC61	Hrs./Week:4	Hrs/ Sem: 60	Credits:4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	develop methods to synthesize the coordination compounds and explain the definition of coordination compounds, naming them and decide isomerism.	1, 6	Cr
CO - 2	examine the formation and bonding in coordination compounds.	1, 2	An
CO - 3	Apply the knowledge of bonding and identify the structure and bonding in metal carbonyls of mono, bi nuclear and poly nuclear carbonyls.	1, 5	Ap
CO - 4	Outline the reaction mechanism of coordination compounds.	1	An
CO - 5	describe the formation of metal clusters.	1	Re
CO-6	make independent research ideas in the field of bioinorganic chemistry.	1	Cr

SEMESTER- VI			
Core X		Organic Chemistry-III	
Course Code :21UCHC62	Hrs./Week: 4	Hrs/ Sem: 60	Credits: 4

**Course Outcome:**

CONo.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	apply green chemistry in day-to-day life, dry cleaning, versatile bleaching agent and implement an awareness about green chemistry and the methods of microwave assisted synthesis.	4,7,8	Ap
CO - 2	demonstrate various Theories of colour and constitution, know the applications of dyes and classify the polynuclear hydrocarbons.	1, 6	Re, Ap
CO - 3	state synthons and synthetic equivalent- Protection and deprotection of different groups and explain retrosynthesis of 5-hexanoic acid and applications of crown ethers	1,3,6	Re, Un, Ap
CO-4	apply the methods of extraction of Alkaloids and Terpenoids	6	Ap
CO - 5	apply Woodward-Fieser rule for calculation of absorptionmaxima of dienes and $\alpha$ , $\beta$ unsaturated ketones and enumerate the applications of UV spectroscopy in coordinationcomplexes.	1,6	Ap
CO - 6	Categorize the theoretical principle, selection rules and instrumentation , absorption frequencies and applications of IR spectroscopy	1, 4,6	An



**SEMESTER VI****Elective Polymer Chemistry****Course Code :21UCHE61****Hrs/Week : 4****Hrs/ Sem : 60****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students should be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	express the terminologies used in polymers and interpret the degree of polymerization.	1,3,4	Un
CO - 2	apply mechanism for determining molecular weight.	1,2, 3,5	Ap
CO-3	recall the properties of different polymers.	1,2,4	Re
CO - 4	summarize the polymerization techniques.	3	Un
CO - 5	outline the principle of polymerization reactions.	3	An
CO - 6	apply the concept of inhibitors and retarders and have a thorough knowledge of kinetics of polymerization have a basic knowledge of synthetic polymers and relate the biomedical applications of polymers.	1,2,3	Ap, Un

## SEMESTER- VI

### Elective      Essential Topics in Chemistry

<b>Course Code :21UCHE62</b>	<b>Hrs/Week:4</b>	<b>Hrs/ Sem: 60</b>	<b>Credits: 4</b>
------------------------------	-------------------	---------------------	-------------------

#### Course Outcome:

CONo.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	interpret the theory behind fermented milks.	1, 2	Un
CO- 2	define the types of different types of purification techniques.	1,3	Re
CO- 3	apply chromatographic techniques for the recovery of Organic substances.	2, 3,6	Ap
CO- 4	investigate the types of corrosion.	1, 2,4,6	Cr
CO- 5	categorize the constituents of paint and its uses.	1 , 2,4	An
CO- 6	evaluate the properties of conductive polymers.	1 ,2 ,4,6,7,8	Ev



**SEMESTER VI****Part III Instrumental methods of analysis****Course Code :21UCHC64****Hrs/Week : 5****Hrs/ Sem : 60****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
CO- 1	have a basic knowledge of purification techniques	1 , 2 , 3	Re
CO- 2	understand the principles of different types of organic separations	1, 2	Un
CO- 3	know the types of theory and instrumentation of colorimetry and spectrophotometry	1,3	Re
CO- 4	enumerate the applications of nephelometry and turbidimetry	2, 3,6	Ap
CO- 5	analyze the compounds using TGA, DTA and DSC.	1, 2,4	An
CO-6	have a basic knowledge about voltametric techniques and apply the concept of amperometry	1 , 2 , 3	Un

**Programme: M. Sc. Chemistry**

Semester – I			
Core I		Inorganic Chemistry - I	
Code : 19PCHC11	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	explain about the electronic configuration, orbital stability and the reactivity	1,3	Ap
CO - 2	discuss the periodic properties of the elements	1,7	An
CO - 3	demonstrate the theories of VSEPR, Valance bond and Molecular Orbital.	1,8	Ap
CO - 4	point out Arrhenius, Bronsted - Lowry and Lewis theories of acids and bases.	2,3	Cr
CO - 5	compare the chemistry of Non-aqueous solvents such as liquid ammonia, Liquid hydrogen fluoride, Liquid Sulfur dioxide .	1,3	An
CO - 6	synthesis and discuss reactivity of metal alkyls, carbenes, carbynes, carbides, alkenes, alkynes, and arene complexes	2,3	Cr
CO - 7	predict the number of active modes of vibrations in IR and Raman spectroscopy.	2,6	Un
CO - 8	interpret the Mossbauer spectra of Iron and Tin complexes.	2,5	Ev



Semester – I			
Core II		Organic Chemistry - I	
Code : 19PCHC12	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	simulate the nomenclature of different compounds	1, 7	Ev
CO - 2	illustrate the basic of aromaticity	5	Un
CO - 3	apply Huckel's $4n+2$ electron rule for benzene and nonbenzenoid aromatic compounds.	6	Ap
CO - 4	understand the various types of aliphatic nucleophilic substitution reactions	5	Un
CO - 5	explain neighbouring group participation in aliphatic electrophilic substitution.	5	Ap
CO - 6	explain the generation, detection, structure, stability and reactions of carbocations, carbanions, carbenes, nitrenes and free radicals	6	Ap
CO - 7	learn the concept of stereochemistry and its importance	7	Re
CO - 8	identify the stereochemistry notations	1,7	Ap

Semester – I			
Core III		Physical Chemistry - I	
Code : 19PCHC13	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	have a good foundation in understanding the physical and mathematical aspects of quantum mechanics.	1	Un
CO - 2	know the limitations of quantum chemistry and classical thermodynamics in the evaluation of macroscopic properties.	4	An
CO - 3	apply the approximation methods to different atoms and find the dissociation energy and bond order for various molecules by applying Huckel molecular orbital theory.	7	Ap
CO - 4	discuss in detail about partial molar properties.	1	Ap
CO - 5	explain different types of methods of preparation of polymers.	6	Un
CO - 6	prepare the polymer molecule and determine the molecular weight of polymer.	6	Cr
CO - 7	classify the molecules according to their moment of inertia.	1	An
CO - 8	explain the fundamentals of molecular spectroscopy.	4	Un

Semester – I			
Elective I      A	Denova Designs In Chemistry		
Code : 19PCHE11	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	formulate molecular dynamics in drug design.	5	Ap
CO - 2	perform docking using Autodock virtual screening and Denova designs.	6,8	Cr
CO - 3	develop recent trends in the synthesis of crown ethers.	6	Cr
CO - 4	design a green method for the synthesis of compounds using twelve principles of Green chemistry.	5,6	Cr
CO - 5	organise C++ programming for the determination of some Chemical properties.	8	An
CO - 6	calculate the delocalisation energy for aromatic system.	4	Ev
CO - 7	acquire knowledge about common diseases due to insects, animals, air and water borne diseases.	1,8	Un
CO - 8	compare different dosage forms of drugs such as solid, semisolid, liquid and gaseous dosage form.	8	An



Semester – I			
Elective I	B	Chemical Instrumentation	
Code : 19PCHE11	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	demonstrate automatic operation and computer control	1,5	Ap
CO - 2	precise control of current and voltage.	6,8	Ap
CO - 3	differentiate modulation and demodulation	5	An
CO - 4	point out limitation on amplifier performance	1	Cr
CO - 5	predict binary logic concepts, logic gates and multi-vibrators	7	Un
CO - 6	distinguish visual, filter and spectrophotometers.	6	Ap
CO - 7	control noise level in a system.	1,7	Cr
CO - 8	interpret the optimal value of adjustable parameters	7,8	Ev





Semester – II			
Core IV		Inorganic Chemistry - II	
Code : 19PCHC21	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	judge about the stability and factors affecting the stability of the coordination complexes.	1,2	Ev
CO - 2	categorise the ligands into strong and weak by Irving-William series and the spectrochemical series.	2,3	An
CO - 3	discuss the various features of Valence bond, Crystalfield and Molecular orbital theories.	1,7	An
CO - 4	measure Crystal Field Stabilisation Energy (CFSE)( $10Dq$ or $\Delta_0$ ) of coordination complexes.	4	Ev
CO - 5	summarise the substitution, oxidative addition, reductive elimination, nucleophilic and electrophilic reactions of organometallic complexes.	2,3	Un
CO - 6	compare the properties of elements present in Lanthanides and Actinides.	1,5	An
CO - 7	calculate the Microstates and Term symbols for Transition metal complex.	4,8	Ev
CO - 8	discuss the applications of XPES and UVPES to inorganic spectra.	5,6	An

Semester – II			
Core V	Organic Chemistry - II		
Code : 19PCHC22	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

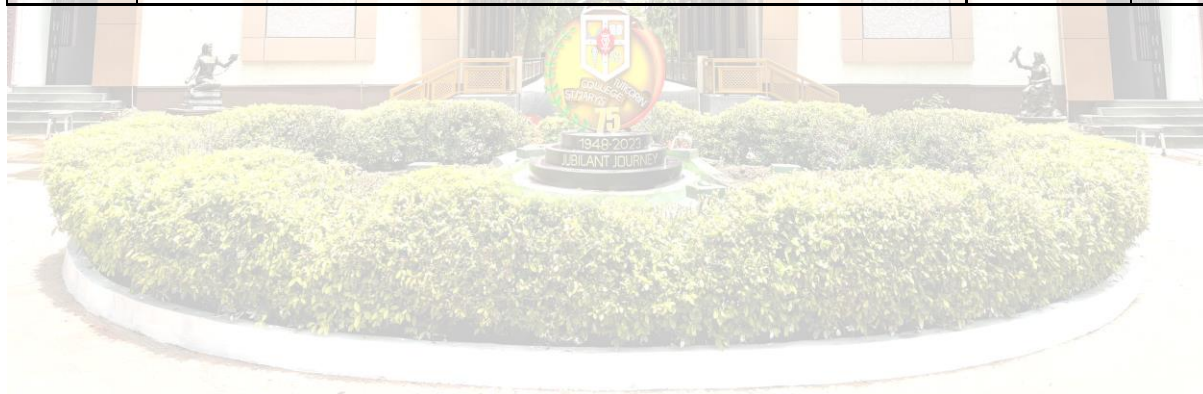
**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	organize the various methods of determination of reaction mechanism	6	Cr
CO - 2	comprehend the various factors that operate in organic reactions	3	An
CO - 3	use relevant concepts and terminology in a correct fashion	8	Re
CO - 4	understand the isolation and structural determination of alkaloids	5	Un
CO - 5	determine structure and stereochemistry of Morphine and quercetin	6	Cr
CO - 6	gain knowledge of photochemical organic reactions	5	Ap
CO - 7	discuss the Photochemistry of ( $n-\pi^*$ ) transitions with particular reference to Norrish type I, Norrish II type reactions, Paterno Bucchi reactions & photochemistry of nitrites.	8	An
CO - 8	understand the applicability of the spectroscopic techniques	4	Un

Semester – II			
Core VI		Physical Chemistry- II	
Code : 19PCHC23	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	recall a thorough knowledge of basics of nanoscience and nanotechnology	4	Re
CO - 2	explain the preparation, characterization and properties of nanomaterials	6	Un
CO - 3	analyze the types and properties of carbon nanotubes	1	An
CO - 4	assimilate existing and new concepts, methodology and researches and apply them in their academic research environment	7	Ev
CO - 5	aware of challenges, risks and promises of nano technological development	6	Cr
CO - 6	synthesise the nanomaterials by physical, chemical and biological methods.	6	Cr
CO - 7	characterise the synthesized nanomaterials by various techniques.	5	Ev
CO - 8	apply the nanomaterials in energy storage, food and in day-to-day life.	8	Ap



**Semester – III****Core VII****Inorganic Chemistry - III****Code : 19PCHC31****Hrs / Week : 5****Hrs / Sem : 75****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	demonstrate the Electrical properties and applications of semiconductors.	1,4	Ap
CO - 2	discuss the high temperature super conductors and their applications in Levitation.	4,7	An
CO - 3	compare various techniques involved in single crystal growth.	6,8	An
CO - 4	sketch the crystal structures of some Ionic compounds.	1,2	Cr
CO - 5	sketch the electron transfer mechanism for Inner and outer sphere complexes.	2	Ap
CO - 6	distinguish between homocyclic and heterocyclic inorganic ring systems.	1,3	An
CO - 7	calculate STYX notation for boranes and carboranes.	4	Ap
CO - 8	coin the Isolobal relationships between main group and transition metal fragments.	6,8	Cr



SEMESTER – III			
Core VIII		Organic Chemistry - III	
Code : 19PCHC32	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	familiarize the various types of aromatic substitution reactions	2	Re
CO - 2	compare neighbouring group participation and Ambidentnucleophiles in aromatic Electrophilic substitution	4	Ev
CO - 3	discuss the Conformational analysis of cyclic molecules and the factors governing the reactivity of axial and equatorial substituents in cyclohexanes.	5	An
CO - 4	discuss optical rotatory dispersion and how it is used forthe determination of structure of chiral molecules.	6	Ap
CO - 5	know the reagents which causes oxidation and reductionreactions	4	Un
CO - 6	acquire knowledge about the reagents specificity	4	An
CO - 7	know about the NMR spectroscopy	6	Un
CO - 8	analyse spin-spin coupling and apply it to organic structures	2	An

Semester – III			
Core IX		Physical Chemistry - III	
Code : 19PCHC33	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	assign the symmetry elements and so that the point group of the given molecule.	1	An
CO - 2	construct the character table for various point groups.	7	Cr
CO - 3	apply the principles of group theory in determining hybridization and symmetries of vibrational modes in linear and non-linear molecules.	5	Ap
CO - 4	outline the behaviour of electrolytes in solutions.	4	Un
CO - 5	predict the structure of the electrode surface and the applications of electrode process.	7	Cr
CO - 6	identify vibrational course structure and rotational fine structure of electronic band and differentiate the molecules whether they are IR active or Raman active.	1	Ap
CO - 7	illustrate different types of electronic spectroscopy and draw the structures of various molecules.	4	Un
CO - 8	appreciate the quadrupole interaction and applications of mössbauer spectroscopy	3	Ev

Semester – IV			
Core XI		Inorganic Chemistry - IV	
Code : 19PCHC41	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	develop the idea about the photo physical and photo chemical processes.	1,2	Ev
CO - 2	produce semiconductor electrodes and solar cells based on laws of photochemistry.	7	Cr
CO - 3	demonstrate the energy sources of life using photosynthetic and non-photosynthetic processes	4,5	Ap
CO - 4	illustrate the inhibition and poisoning of Xanthane oxidase and aldehyde oxidase.	5	Ap
CO - 5	explain the Iron transport and storage proteins.	3	Un
CO - 6	describe the tracer technique and counter technique in nuclear chemistry.	5,6	An
CO - 7	catagorise the principle and applications of NMR, NQR and EPR spectroscopy.	6,8	An
CO - 8	demonstrate the structural information from NMR and NQR spectra.	2,3	Ap



**SEMESTER – IV****Core XII****Organic Chemistry - IV****Code : 19PCHC42****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	study the synthesis and Elucidation of structure of steroids and terpenoids	6	Re
CO - 2	learn the conversion of cholesterol to progesterone, estrogen and testosterone	8	Un
CO - 3	study the outline of retrosynthetic analysis with some examples	7	An
CO - 4	appraise the different retrosynthetic compounds	5	Ev
CO - 5	learn the concept of cyclo addition, Electrocyclic and sigmatropic reaction mechanism	6	Cr
CO - 6	explain the nomenclature, reactivity and spectral properties of heterocyclic compounds	3	Un
CO - 7	demonstrate the synthesis and reactivity of heterocyclic compounds	2	Ap
CO - 8	outline the salient features of fragmentation pattern of organic compounds	8	Ev



Semester – IV			
Core XIII		Physical Chemistry - IV	
Code : 19PCHC43	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	explain the inter-linking of quantum chemistry and statistical thermodynamics that leads to classical thermodynamics.	1	Un
CO - 2	apply the concepts of statistical thermodynamics for the study of equilibrium reactions and reaction rates.	4	Ap
CO - 3	detect the use of chemical kinetics in understanding the reaction mechanisms.	2	Ev
CO - 4	apply the theories and concepts of chemical kinetics for homogeneous and heterogeneous catalysed reactions.	4	Ap
CO - 5	compare the different types of adsorption isotherm and improve the surface area in catalysis.	4	Ev, Cr
CO - 6	interpret nuclear quadrupole resonance and nuclear magnetic resonance.	3	Ev
CO - 7	examine the spin labeling studies of biomolecules using ESR spectroscopy.	7	An
CO - 8	judge the structure of molecules by applying various spectroscopic techniques.	5	Ev

Semester – I			
Core I	Inorganic Chemistry - I		
Course Code : 21PCHC11	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course outcome:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	develop the idea about the photophysical and photo chemical processes.	1,4	Ev
CO 2	produce semiconductor electrodes and solar cells based on laws of photochemistry.	7,8	Cr
CO 3	explain about the electron configuration, orbital stability and the reactivity	1	Ap
CO 4	demonstrate about the theories of VSEPR, Valance bond and Molecular Orbital.	1,4	Ap
CO 5	compare the chemistry of Non-aqueous solvents such as liquid ammonia, Liquid hydrogen fluoride, Liquid sulfur dioxide.	1,5	An
CO 6	compare the properties of elements present in Lanthanides and Actinides.	1,5	An

Semester – I			
Core II		Organic Chemistry - I	
Course Code : 21PCHC12	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

### Course Outcomes

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	illustrate the basic of aromaticity	1	Un
CO 2	criteria for aromaticity and Huckel's $4n+2$ electron rule for benzene and non benzenoid aromatic compounds.	6	Ev
CO 3	understand the various types and associate the neighboring group participation of aliphatic nucleophilic substitution reactions.	3	Un, Ap
CO 4	explain the generation, detection, structure, stability and reactions of carbocations, carbanions, carbenes, nitrenes and free radicals	2	Ap
CO 5	identify the stereochemistry notations, concept and its importance	1	Ap
CO 6	investigate the Name the reaction Mechanism and Applications	3	An

Semester – I			
Core III		Physical Chemistry - I	
Course Code : 21PCHC13	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

### Course Outcomes

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	have a good foundation in understanding the physical and mathematical aspects of quantum mechanics.	1	Un
CO 2	apply the approximation methods to different atoms and find the dissociation energy and bond order for various molecules by applying Huckel molecular orbital theory.	4	Ap
CO 3	explain different types of methods of preparation of polymers.	5	Un
CO 4	prepare the polymer molecule and determine the molecular weight of polymer.	6	Cr
CO 5	deduce the experimental techniques involved in photochemical processes.	5	Ev
CO 6	classify the molecules according to their moment of inertia.	1	An



**Semester – I****Elective I****A. Advanced Topics in Chemistry****Course Code : 21PCHE11****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	formulate molecular dynamics in drug design.	5	Ap
CO 2	perform docking using Autodock virtual screening and De nova designs.	5,4	Ap
CO 3	develop recent trends in the synthesis of crown ethers.	6	Cr
CO 4	design a green method for the synthesis of compounds using twelve principles of Green chemistry and sketch the natural cycles of environment such as the hydrological, oxygen and nitrogen cycles.	5,6	Cr
CO 5	compare heterogeneous liquid- liquid and heterogeneous solid- liquid reactions and differentiate chemical and photochemical reactions occurs in atmosphere.	2,5	An
CO 6	synthesis the nanomaterial by ultra sonication and acquire knowledge about common diseases due to insects, animals, air and water borne diseases.	1,6	Un

Semester – II			
Core IV		Inorganic Chemistry –II	
Course Code : 21PCHC21	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course outcome:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	judge about the stability and factors affecting the stability of the coordination complexes.	1, 2	Ev
CO 2	measure Crystal Field Stabilisation Energy( $10Dq$ or $\Delta_0$ ) of coordination complexes.	2, 4	Ev
CO 3	synthesis and can discuss about reactivity of metal alkyls, carbenes, carbynes, carbides, alkenes, alkynes and arene complexes	6, 7	Cr
CO 4	summarize the substitution, oxidative addition, reductive elimination, nucleophilic and electrophilic reactions of organometallic complexes.	1, 4	Un
CO 5	predict about the number of active modes of vibrations in IR and Raman spectroscopy.	5	Un
CO 6	interpret the Mossbauer spectra of Iron and Tin complexes.	5, 7	Ev

Semester – II			
Core V		Organic Chemistry - II	
Course Code : 21PCHC22	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO1	organize the various methods of determination of reaction mechanism	1	Cr
CO2	comprehend the various factors that operate in organic reactions	3	An
CO 3	analyse the migrating aptitude and rearrangements	4	An, Ap
CO 4	understand and determine the isolation and structural determination of alkaloids	2	Un, An
CO 5	discuss the Photochemistry of ( $n-\pi^*$ ) transitions with particular reference to Norrish type I, Norrish II type reactions, Paterno - Buchi reactions & photochemistry of nitrites.	3	An
CO 6	understand the applicability of the spectroscopic techniques and Instruments	5	Un, Ap

Semester – II			
Core VI	Physical Chemistry – II		
Course Code : 21PCHC23	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

### Course Outcomes

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	assign the symmetry elements and so that the point group of the given molecule.	2	An
CO 2	construct the character table for various point groups.	2	Cr
CO 3	apply the principles of group theory in determining hybridization and symmetries of vibrational modes in linear and non-linear molecules.	1	Ap
CO 4	compare the different types of adsorption isotherm and improve the surface area in catalysis.	4	Ev
CO 5	elaborate the theories and concepts of homogeneous and heterogeneous catalysed reactions and apply in project work.	6	Cr
CO 6	differentiate the given molecules whether they are IR active or Raman active and draw the structures of various molecules.	2	An, Cr



Semester – II			
Elective II		A. Nanoscience and Technology	
Course Code : 21PCHE21	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

### Course Outcomes

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	recall a thorough knowledge of basic underline disciplines of nanoscience and nanotechnology	4	Re
CO 2	explain the preparation, characterization and properties of nanomaterials	6	Un
CO 3	analyze the types and properties of carbon nanotubes	1	An
CO 4	assimilate existing and new concepts, methodology and researches and apply them in their academic research environment	7	Ev
CO 5	synthesise the nanomaterials by physical, chemical and biological methods. characterise the synthesized nanomaterials by various techniques.	6, 5	Cr
CO 6	apply the nanomaterials in energy storage, food and in day-to-day life.	8	Cr

**Semester – II**

**Elective II**

**B. Energy and Computational Chemistry**

**Course Code: 21PCHE22**

**Hrs / Week : 4**

**Hrs / Sem : 60**

**Credits : 4**

**Course outcomes**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	organise C++ programming for the determination of some Chemical properties.	4	An
CO 2	calculate the delocalisation energy for aromatic system.	6	Ev
CO 3	distinguish between renewable and non- renewable energy resources.	1	An
CO 4	explain the construction, working and applications of primary and secondary batteries.	7	Ap
CO 5	demonstrate the Orsat process for flue gas analysis. identify a catalyst used in fine chemical synthesis.	6, 5	Cr
CO 6	acquire knowledge about paints, dyes and pigments and their manufacture.	8	Ap

Semester – III			
Core VII		Inorganic Chemistry - III	
Course Code : 21PCHC31	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	predict the dislocations in the solids	4	Ev
CO 2	compare various techniques involved in single crystal growth.	4, 6	An
CO 3	calculate STYX notation for boranes and carboranes.	1	Ap
CO 4	coin the Isolobal relationships between main group and transition metal fragments.	1	Cr
CO 5	calculate the Microstates and Term symbols for Transition metal complex.	4	Ev
CO 6	discuss the applications of XPES and UVPES to inorganic spectra.	5, 7	An



SEMESTER – III			
Core VIII		Organic Chemistry - III	
Course Code : 21PCHC32	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

#### Course Outcomes

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	familiarize the various types and Compare neighbouring group participation and Ambident nucleophiles of aromatic substitution reactions	2	Re
CO 2	discuss the Conformational analysis of cyclic molecules and the factors governing the reactivity of axial and equatorial substituents in cyclohexanes.	3	An
CO 3	study the synthesis and Elucidation of structure of steroids and terpenoids	4	Un, An
CO 4	learn the conversion of cholesterol to progesterone, estrogen and testosterone	5	Re
CO 5	acquire knowledge about the reagents specificity	3	Un
CO 6	to learn the concept of Cyclo addition, Electrocyclic and sigmatropic reaction mechanism	6	Cr



Semester – III			
Core IX		Physical Chemistry - III	
Course Code : 21PCHC33	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO1	outline the behavior of electrolytes in solutions.	4	An
CO2	predict the structure of the electrode surface and the applications of electrode process.	2	Cr
CO 3	investigate the corrosion and polarization studies.	1	Ev
CO 4	justify electrochemical mechanisms of biological systems.	4	Ev
CO 5	categorise the principle and applications of NMR and EPR spectroscopy.	4	An
CO 6	judge the structure of molecules by applying various spectroscopic techniques.	2	Ev



Semester – IV			
Core X		Inorganic Chemistry - IV	
Course Code : 21PCHC41	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	demonstrate about the energy sources of life using photosynthetic and non-photosynthetic processes	1,4	Ap
CO 2	illustrate the inhibition and poisoning of xanthine oxidase and aldehyde oxidase.	1,4	Ap
CO 3	describe about tracer technique and counter technique in nuclear chemistry.	5,7	An
CO 4	sketch the electron transfer mechanism for inner and outer sphere complexes.	3,4	Ap
CO 5	categorise the principle and applications of NMR, NQR and EPR spectroscopy.	5,8	An
CO 6	demonstrate the structural information from NMR and EPR spectra.	5,8	Ap

**SEMESTER – IV****Core XI****Organic Chemistry - IV****Course Code : 21PCHC42****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcomes**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	describe various reactions involved in addition to C=C bonds	3	Un
CO 2	demonstrate/apply the concepts involved in elimination reaction	5	Ap
CO 3	study about the outline of retrosynthetic analysis with some examples	6	An
CO 4	outline Salient features of fragmentation pattern of organic compounds, Appraise the different retrosynthetic compounds	4	Ap
CO 5	explain the nomenclature, reactivity and spectral properties of heterocyclic compounds	5	An
CO 6	know about the NMR spectroscopy, distinguish spin-spin coupling and application to organic structure $^{13}\text{C}$ spectroscopy	7	Ap

Semester – IV			
Core XII		Physical Chemistry - IV	
Course Code : 21PCHC43	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	examine the theories and concepts of chemical kinetics for homogeneous and heterogeneous catalysed reactions.	1	Ap
CO 2	sketch the phase diagram for one, two and three component systems	5	An
CO 3	apply the concepts of statistical thermodynamics for the study of equilibrium reactions and reaction rates.	4	Ap
CO 4	understand the applications of radiation chemistry in different fields.	1	Un
CO 5	interpret electron spin resonance and Mössbauer spectroscopies.	4	Ev
CO 6	judge the structure of molecules by performing hyperfine splitting technique.	5	Ev



**Programme: B. Com**

<b>SEMESTER –I</b>			
<b>Part III</b>	<b>Core I</b>	<b>Financial Accounting I</b>	
<b>Code:18UCOC11</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>

**Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand book keeping and accounting concepts, conventions and accounting information.	1,2,5	Un
CO – 2	prepare financial statements in accordance with generally accepted accounting principles.	1,2,5,8	Ap
CO – 3	employ critical thinking skills on the effects of different accounting methods on the financial statements.	1,2,4,5	Ap
CO – 4	understand about the preparation of bank reconciliation statement.	1,5	Ap
CO – 5	know about the differences between bill of exchange and promissory note.	1,5	Ap
CO - 6	demonstrate an understanding of the various methods of providing depreciation.	2,4,5	Ev
CO - 7	apply appropriate judgement derived from knowledge of accounting theory in charging depreciation for various assets.	1,5	Ap
CO - 8	effectively calculate the 'no profit/ no loss' date of settlement.	2,4,5	Ev

**SEMESTER –I****Part III Core II****Business Organisation****Code:18UCOC12****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand the basic concepts of business organization and latest developments in the organization of business.	1,3,4,6	Un
CO – 2	understand the basic forms of business organization.	1,2,3	Un
CO – 3	know about the concepts of business ethics, business values and morals.	1,2,4	An
CO – 4	understand about village and small industry sector, development of VSI under the plans, KVIC and its objectives and MSME.	1,6	Ev
CO – 5	know about the dominance of MNC's globalization and globalization of Indian business.	1,3,6	An
CO - 6	demonstrate women entrepreneurship skills.	2,4,5	Ev
CO -7	gain knowledge on the promotional measures relating to KVIC.	1.2.3	Un
CO - 8	analyse the pros and cons of globalisation in the business world.	4,5	Cr

SEMESTER –I			
Part III	Allied I	Business Economics	
Code:18UCOA11	Hrs/Week: 3	Hrs/Sem: 45	Credits : 3

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the various theories of Economics	1,2,3	Re
CO – 2	understand business economics and importance of business economics for managerial decision making.	1,2,4	Un
CO – 3	determine the position of firms using demand and supply conditions.	2,3	Ev
CO – 4	economies of large scale and small scale production.	1,6	Un
CO – 5	analyze Cost Effective Production techniques	5,6	An
CO- 6	determine pricing and costing strategies according to the nature of product and market conditions.	2,4	Ev
CO – 7	use economic theories related with supply and demand	2,7	Ap
CO-8	make optimal business decisions to minimise cost and maximise profit	7,8	Cr

**SEMESTER –I****Part III Allied II Business Information System****Code:18UCOA12****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome :**

CO No.	Upon completion of this course, students will be able to:	PSO addressed	CL
CO – 1	gain thorough knowledge about the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various functions in business.	1,2,3	Ap
CO – 3	know about principles of organization and its forms.	1,4	Ev
CO – 4	understand the motivational theories.	1,2,6	Ap
CO – 5	familiarise with the controlling and co-ordination techniques.	1,4	Ap
CO – 6	exhibit knowledge on importance of controlling and techniques of controlling.	2,7	Ap
CO - 7	analyse the importance of decision making in business.	1,2,6	An
CO - 8	outline the methods of motivation.	7,8	Cr



SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER –II****Part III    Core III            Financial Accounting II****Code:18UCOC21****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	know the difference between consignment and joint venture.	1,2,4	Ap
CO – 2	prepare various accounts namely accounts of non-trading concerns and professionals, royalties and single entry system.	1,5,8	Ap
CO – 3	understand about the self balancing system and sectional balancing system and its various adjustment accounts.	1,5	Ap
CO – 4	know about the loss of stock and loss of profit under insurance claims.	1,5	Ap
CO – 5	know about the preparation of balance sheet in income and expenditure account.	1,2	Ap
CO - 6	identify the nature of expenses as capital, revenue and deferred for correct presentation in the final accounts of any company.	1,3,6	An
CO - 7	understand the facts related to consignment and joint venture with normal and abnormal losses.	1.2.3	Un
CO - 8	evaluate the process of royalties with minimum rent, short workings and sub lease.	2,4,5	Ev

**SEMESTER –II****Part III Core IV Principles of Marketing****Code:18UCOC22****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand the nature, importance and classification of markets.	1,2	Un
CO – 2	understand the functions of marketing and marketing mix.	1,2	Un
CO – 3	evaluate the life cycle of products.	1,2,3,5	Ev
CO - 4	know the importance of sales promotion, advertising and qualities of successful salesmen.	2,3,4	Ap
CO - 5	understand about the product line and product life cycle through modification.	1,4	Ap
CO - 6	demonstrate the importance of branding and packaging.	2,4,5	Ev
CO - 7	know the objectives and methods of pricing.	1,2,3	Un
CO - 8	analyse the pros and cons of the various channels of distribution.	4,5	Cr

**SEMESTER –II****Part III Allied III Business Management****Code:18UCOA21****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	gain thorough knowledge about the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various functions in business.	1,2,3	Ap
CO – 3	know about principles of organization and its forms.	1,4	Ev
CO – 4	understand the motivational theories.	1,2,6	Ap
CO - 5	familiarise with the controlling and co-ordination techniques.	1,4	Ap
CO - 6	exhibit knowledge on importance of controlling and techniques of controlling.	2,4,5	Ev
CO - 7	analyse the importance of decision making in business.	1,2,3	Un
CO - 8	outline the methods of motivation.	4,5	Cr



**SEMESTER –II****Part III                      Allied IV                      Principles of Life Insurance****Code:18UCOA22****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	know the Indian Market System	1,2	Re
CO – 2	understand the Concept of Life Insurance	1,2	Un
CO – 3	effectively calculate premium and bonus for various kinds of policies	1,2,3	Ap
CO – 4	have an insight into the different types of life insurance plans	1,2,4	Ap
CO-5	acquire knowledge about LIC products, and its variations.	1,2,3	Ap
CO - 6	demonstrate knowledge on the different types of annuity plans, group insurance plans etc.	5,6	An
CO - 7	organisational structure at various level	1,8	Ev
CO - 8	take up Licentiate Examination with confidence	5,6,7	Cr

**SEMESTER –III****Part III Core V Advanced Financial Accounting****Code:18UCOC31****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO Addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic accounting issues.	1,2	Ap
CO – 2	gain knowledge regarding the maintenance of partnership accounts in case of admission.	1,2, 5	Ap
CO – 3	have practical knowledge regarding the maintenance of partnership accounts in case of retirement.	1,2, 5	Ap
CO - 4	understand the maintenance of partnership accounts in case of dissolution of a firm.	1,2, 5	Ap
CO – 5	know about the maintenance of accounts relating to branch accounts.	1,2,5	Un
CO – 6	understand the calculation of profit involved in sending goods at invoice price.	1,5,8	Ap
CO – 7	understand about the hire purchase system.	1,5,6	Ap
CO - 8	understand about installment system.	1,8	Ap

**SEMESTER –III****Part III Core-VII****E - Accounting****Code:18UCOC33****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO-1	develop the computerized knowledge in accounting	1,2,3	Un
CO-2	impart the students with the basic principles and concepts of computerized accounting	1,2	Un
CO-3	provide knowledge on the use and application of Tally	1,2	Ev
CO-4	learn about the concept of vouchers	2,4	Un
CO-5	create company in Tally	5,8	Ap
CO-6	create knowledge of inventory accounting	1,5,8	Ev
CO-7	create knowledge of budget control	1,4	An
CO-8	make use of cost category and cost centers in voucher	1,5	Ap

**SEMESTER –III****Part III Allied V Business Communication****Code:18UCOA31****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	gain knowledge on the basic concepts of business communication and help them to understand basic techniques of business.	1,2	Un
CO – 2	understand the basic principle of effective communication and barriers of communication.	1,2,3	Un
CO – 3	help the students write letters on enquiries, offers and quotations, orders and execution.	2,3,4	Ap
CO – 4	know about the collection letters and sales letters.	2,3,5	Ap
CO – 5	understand about bank correspondence.	3,4	Ap
CO – 6	understand about Insurance correspondence	3,4	Ap
CO – 7	know about the public grievance letters.	3,4,5	Ap
CO – 8	know about the letters to the editor and through email.	3,4,5	Ap



**SEMESTER –III****Part III Allied VI Customer Relationship Management****Code:18UCOA32****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of customer relationship management	2,3	Un
CO-2	know the emerging trends in CRM	2,4,6	Un
CO-3	analyze the customer relationship management issues and problems	2,3	An
CO-4	gain the knowledge about the e- CRM	1,2	Ev
CO-5	understand the customer relationship management process	1,2,3	An
CO-6	analyze the technology of integrating CRM with ERP	5,6	An
CO-7	integration of CRM with data warehouse	4,8	Ev
CO-8	learn the concept of Market Basket Analysis	3	Un

**SEMESTER –III**

<b>Part III</b>	<b>Core SB</b>	<b>Business Mathematics</b>	
<b>Code:18UCOS31</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic principles and techniques of mathematics.	1,2	Un
CO – 2	understand how quadratic equations are solved.	2,5	Ap
CO – 3	understand how simultaneous equations are solved with two or more variables.	2,5	Ap
CO – 4	understand indices	1,2	Ap
CO – 5	understand the theory of logarithms.	1,2	Ap
CO – 6	apply matrix rule.	1,2,4,5	Ap
CO – 7	understand how linear equations are solved using matrices.	2,5	Ap
CO – 8	understand calculation of interests (simple, compound), discounts both for cash and credit transactions. (trade, cash, true , banker's discount).	1,2,4,5	Ap

### SEMESTER –III

#### Part III Non Major Elective I Principles of Accountancy

Code:18UCON31	Hrs/Week: 2	Hrs/Sem: 30	Credits : 2
---------------	-------------	-------------	-------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO – 1	have a fundamental knowledge on basic rules of Accounting.	1,2,5	Un
CO – 2	prepare the Trial balance.	1,2,3,8	Ap
CO – 3	prepare the various subsidiary books	1,2	Ap
CO – 4	prepare the Types of cashbook	2,8	Ap
CO – 5	prepare the petty cash book.	2,8	Ap
CO – 6	prepare the Trading account.	2,5	Ap
CO – 7	prepare the profit and loss account	2,5	Ap
CO – 8	prepare the balance sheet	2,5	Ap



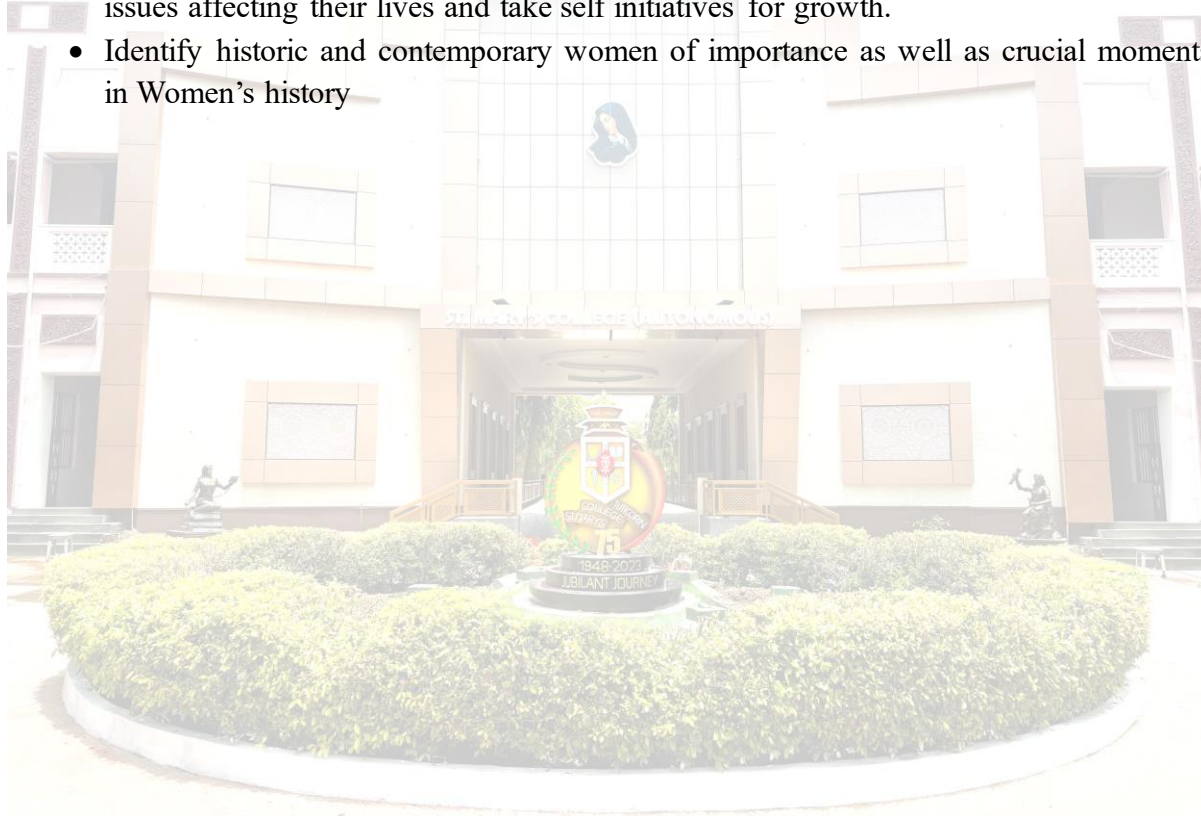
### Semester – III

#### Women's Synergy

<b>Code : 18UAWS31</b>	<b>Hrs/ Week : 2</b>	<b>Hrs/Sem:30</b>	<b>Credits : 2</b>
------------------------	----------------------	-------------------	--------------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





**SEMESTER –IV****Part III      Core VIII      Corporate Accounting****Code:18UCOC41****Hrs/Week: 6****Hrs / Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand about the issue of shares.	1,2	Un
CO – 2	understand about the redemption of preference shares.	1,4,5	Ap
CO – 3	understand about the issue of shares and debentures.	5,8	Ap
CO – 4	understand the calculation of profit prior to incorporation.	2,5,8	Ap
CO – 5	Practice the maintenance of company final accounts as per revised accounting standards.	1,2	Ap
CO – 6	understand the accounting for amalgamation and external reconstruction.	2,5,8	Ap
CO – 7	analyse the various schemes for capital reduction.	2,5,8	Ap
CO – 8	evaluate the preparation of liquidator's financial statements.	2,5,8	Ap

**SEMESTER –IV****Part III      Core IX                      Company Law****Code:18UCOC42****Hrs/Week: 6****Hrs/ Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the various provisions of Companies Act 2013.	1,2	Un
CO – 2	know the provisions related to the formation of different types of companies.	1,2	Un
CO – 3	differentiate private and public companies.	2,3	An
CO – 4	understand the statutory requirements of Incorporation of a company like registration of memorandum, articles, issue of prospectus etc.	3,4	Un
CO – 5	know the difference between shares and debentures and the procedure for declaration and payment of dividend.	2,5	An
CO – 6	understand the role of administrative executives in a company and the procedure for conducting meetings.	1,5	Un
CO – 7	know the various requisites for conducting a valid meeting under the Companies Act , 2013.	2,5	Un
CO – 8	analyse the statutory procedure for the winding up of the company	2, 7	An

**SEMESTER –IV****Part III Core SB****Business Statistics****Code:18UCOS41****Hrs/Week: 4****Hrs/Sem: 60****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic concepts of statistics and statistical tools.	2,5	Un
CO – 2	understand how statistical tools are applied for doing the project work.	2,5	Un
CO – 3	know the measures of central tendency and apply to measure averages.	2,3	Ev
CO – 4	apply the tools on measures of dispersion that are useful for estimating variations.	2,4,5,8	Ap
CO – 5	evaluate whether there is correlation between two variables or not.	2,3	Ev
CO – 6	apply the various methods for calculating correlation coefficient.	2,4,5,8	Ap
CO – 7	apply regression analysis for estimating values for future period.	2,4,5,8	Ap
CO – 8	apply the various methods for calculating regression coefficient.	2,4,5,8	Ap

**Semester IV****Part III Non Major Elective II Introduction To Cost Accounting****Code:18UCON41****Hrs/Week: 2****Hrs/Sem 30****Credits : 2****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the objectives of cost accounting	1	Un
CO – 2	understand the functions of cost accounting	1	Un
CO – 3	understand the various classifications of cost	1	Un
CO – 4	understand the preparation of cost sheet.	1,2,8	Un,Ap
CO – 5	determine the elements of materials and its types	3,4	Re,Ap
CO – 6	know the various methods of remuneration.	1,8	An
CO – 7	understand the overhead absorption methods.	1,3	Un,Ap
CO – 8	understand overhead allocation and apportionment.	1,3	Un,Ap





**SEMESTER –V****Part III Core XII Income Tax Law & Practice I****Code:18UCOC52****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand and apply basic concept and provisions of the Income Tax Act 1961.	1,2,3	Un
CO – 2	understand the various exempted income and residential status.	2,5	Ap
CO – 3	understand and compute Salary income	4,5	Ap
CO – 4	understand and compute Income from House property.	2,5	Ap
CO – 5	compute Capital gains	5,8	Ap
CO – 6	compute Profits and gains	5,8	Ap
CO -7	compute Income from other sources.	5,8	Ap
CO -8	compute different heads of income.	2,5	Ap

**SEMESTER –V****Part III Core XIII****Business Law****Code:18UCOC53****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Vision:**

To expose students to various business laws.

**Mission:**

To enable students to have adequate knowledge on rules and regulations of commercial laws.

**Course Outcome:**

<b>Co.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the essentials and steps to enter into a contract.	1,2	Un
CO-2	familiarize with the terminology used in contract Act	1,4	Un
CO-3	know about the remedies of breach of contract.	1,2,3	An
CO-4	understand the contract of indemnity and its kinds.	1, 2,5	Un
CO-5	know the performance of Contract	1,4,5	Ap
CO-6	understand the contract of Contract of Guarantee	1,2,8	Un
CO- 7	understand the types of bailment, rights and its duties.	1,4	Un
CO-8	know the rights of buyers and sellers, its conditions and warranties regarding Sale of Goods Act.	6,7	Ap

**SEMESTER –V****Part III Core Integral I Special Accounts****Code:18UCOI51****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course outcome:**

<b>Co.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	gain in-depth knowledge in corporate accounting	2,4,5	Un
CO-2	know the format of final accounts of Banking, Insurance and Holding companies	4,5	Ap
CO-3	prepare the accounts for public limited companies	1,2,5	Ev, Ap
CO-4	understand investment accounts, fixed interest securities and variable income securities.	5,8	An
CO-5	understand and prepare voyage accounts	5,8	Un
CO-6	know about statutory laws relating to banking companies accounts	1,3,8	Un, Ap
CO-7	know about statutory laws relating to insurance company accounts.	1,2,5	Un, Ap
CO-8	understand and prepare accounts of holding companies.	1,8	Un, Ap

SEMESTER –V			
Part III Core Integral II		Cost Accounting	
Code:18UCOI52	Hrs/Week: 5	Hrs/Sem: 75	Credits : 4

**Course Outcome :**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the objectives and functions of cost accounting	1,5	Un
CO – 2	understand the preparation of cost sheet.	1,5,8	Ap
CO – 3	determine the elements of material and the techniques of material control	4,5	Un,Ap
CO - 4	know the concepts of labour cost computation and control.	1,5,8	Un,Ap
CO – 5	understand the overhead allocation and apportionment.	1,5	Un,Ap
CO - 6	gain knowledge on absorption of overheads	1,7,8	Un,Ap
CO – 7	understand the techniques of Contract costing	5,8	Un,Ap
CO – 8	gain knowledge on the techniques of Process costing and prepare process accounts.	5,8	Un,Ap



## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

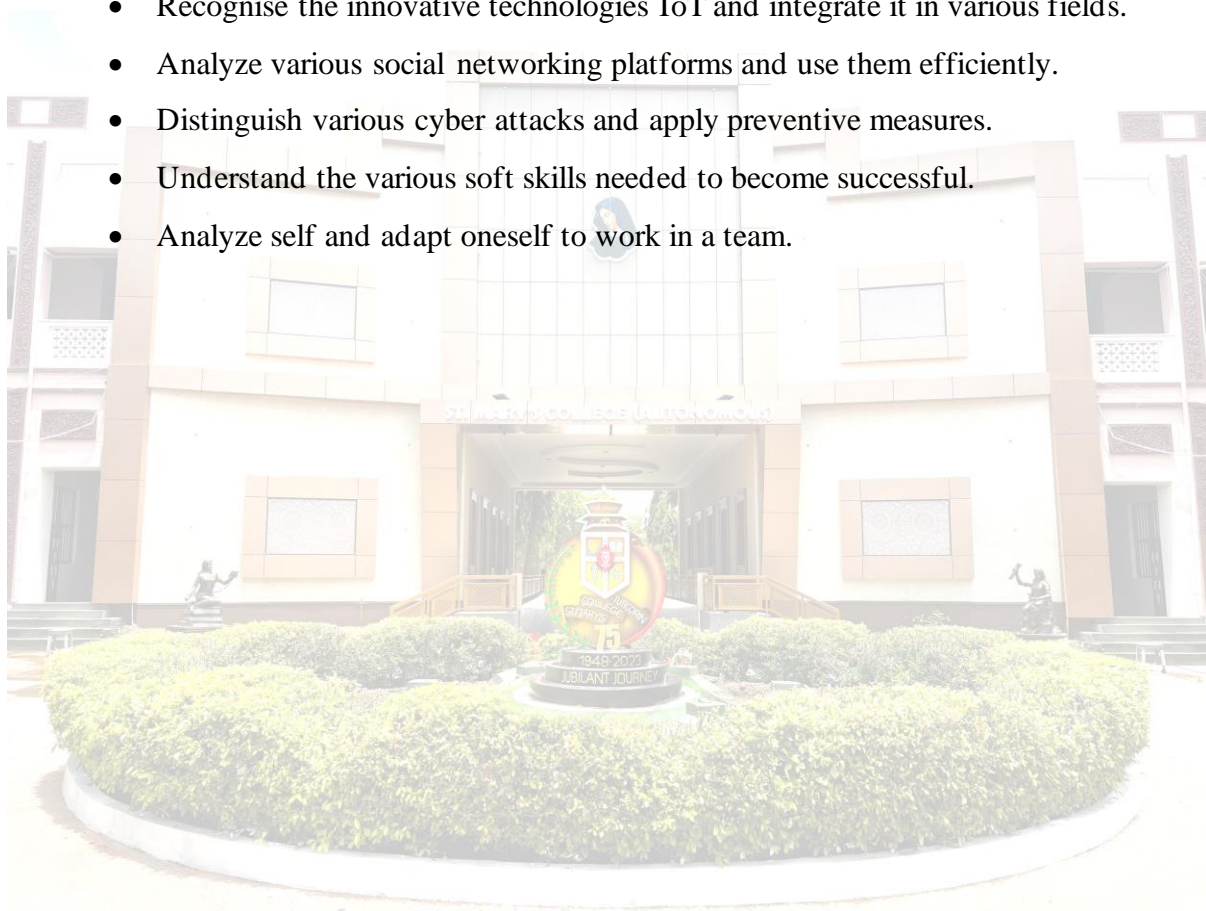
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



**SEMESTER –VI****Part III Core XIV Management Accounting****Code:18UCOC61****Hrs/Week: 6****Hrs/Sem : 90****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic concepts of management accounting and differentiate management accounting from financial accounting and cost accounting.	1,2	Un
CO – 2	understand the contexts where types of ratios can be applied for evaluating the performance and financial position of a firm.	2,5	Un,Ap
CO – 3	evaluate the performance of a firm using fund flow statement.	5,8	Ev,Ap
CO – 4	evaluate the performance of a firm using cash flow statement.	5,8	Ev,Ap
CO - 5	use marginal costing techniques for optimising cost and profit.	2,3,5	Un,Ap
CO - 6	understand the features and importance of budgets and budgetary control	1,5	Un,Ap
CO - 7	prepare various budgets	5,8	An,Ap
CO - 8	identify the significance of standard costing, budgeting and budgetary control in managerial decision making.	2,5	An,Ap

## SEMESTER –VI

### Part III Core XV Income Tax Law and Practice-II

**Code:18UCOC62**

**Hrs/Week: 6**

**Hrs/Sem: 90**

**Credits : 4**

#### Course outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply the concept of clubbing of income	1,2,3	Un
CO – 2	set off and carry forward losses	2,5	Ap
CO – 3	understand and apply deductions U/S 80 C to 80 U	2,5	Ap
CO -4	understand the various assessment procedures	5,8	Ap
CO -5	understand and compute advance tax and TDS	5,8	Ap
CO – 6	understand and apply the tax rate and deductions.	4,5	Ap
CO – 7	compute income of individuals and firms.	2,5	Ap
CO – 8	prepare Income Tax returns of individuals and firms	5,8	Ap



**SEMESTER –VI****Part III Core XVI Industrial Law****Code:18UCOC63****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the disputes of strike, lock out, retrenchment, lay off and compensation	1,2	Un
CO-2	know about the welfare, safety and health of workers.	2,5,8	Ap
CO-3	analyse Women and Factories Act	4,5,8	Ap
CO-4	understand the various act relating to payments.	5,8	Ap
CO-5	understand the rules regarding workmen's compensation.	2,5	Un
CO-6	know the Minimum Wages Act	1,3	An
CO-7	understand the Trade Union Act	1,4	Un
CO-8	know the rights and duties of Employee State Insurance Act.	7,8	Ev



**SEMESTER –VI****Part III Core Integral III Financial Services****Code:18UCOI61****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	know the framework of Financial Markets in India.	1,3	Un
CO-2	be familiar with the functions of Financial Services.	2,4	An
CO-3	gain knowledge on the avenues of financial services	3,6	Un
CO-4	be an expertise in various Financial markets and its Services	1,8	Ev
CO-5	understand the term Merchant Banking	1,8	Ap
CO-6	know Lease Financing	4,6	Un
CO-7	understand the activities and scope of venture capital and also the functions of credit rating	5,7	Ap
CO-8	understand Mutual Funds and its application	1,7	An

**SEMESTER –VI****Part IV Core Integral IV Investment Management****Code:18UCOI62****Hrs/Week: 7****Hrs/Sem: 105****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the sources of investments.	1,3	Un
CO-2	know of various level of risks.	2,4	An
CO-3	adapt with primary market procedures.	3,6	Un
CO-4	be familiarised with various stock exchanges and their functions.	1,8	Ev
CO-5	analyse the securities according to industry.	1,8	Ap
CO-6	analyse the securities technically.	4,6	Un
CO-7	apply the tools to understand the overall marketing.	5,7	Ap
CO-8	know the investment pattern.	1,7	An

## SEMESTER –I

<b>Part III</b>	<b>Core I</b>	<b>Financial Accounting I</b>		
<b>Course Code: 21UCOC11</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>	

### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand book keeping and accounting concepts and conventions as per Accounting Standards of India.	1,2,5	Un
CO – 2	prepare financial statements of sole traders accordance with generally accepted accounting principles.	1,2,5,8	Ap
CO – 3	understand and prepare bank reconciliation statement.	1,5	Ap
CO – 4	demonstrate and compare the various methods of providing depreciation.	2,4,5	Ev
CO – 5	apply appropriate judgment derived from knowledge of accounting theory in charging depreciation for various assets.	1,5	Ev
CO – 6	effectively demonstrate skills relating to rectification of errors.	2,4,5	Ap

## SEMESTER –I

<b>Part III</b>	<b>Core II</b>	<b>Business Organisation</b>		
<b>Course Code:21UCOC12</b>	<b>Hrs/Week: 5</b>	<b>Hrs/ Sem: 75</b>	<b>Credits : 4</b>	

### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO – 1	understand the basic concepts and latest developments in the organisation of business.	1,3,4,6	Un
CO – 2	understand the basic forms of business organisation.	1,2,3	Un
CO – 3	know about the concepts of business ethics, business values and morals.	1,2,4	Un
CO – 4	appraise about MSME, recent changes in MSME sector, development of VSI under the plans, KVIC and its objectives .	1,6	Ev
CO – 5	know about the dominance of MNC in globalisation and globalisation of Indian business.	1,3,6	Un
CO – 6	analyse the pros and cons of globalisation in the business world and create new business models	4,5	An



SEMESTER –I			
<b>Part III</b>	<b>Allied I</b>	<b>Business Information System</b>	
<b>Course Code: 21UCOA11</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

**Course Outcomes :**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	gain thorough knowledge about the fundamentals of MS Word	2,4,5	Un
CO – 2	familiarise with the calculations made in excel sheets	1,2,4	Ap
CO – 3	exhibit skills in power point	1,3,5	Ap
CO – 4	design the documents with various formats and designs	1,3,4,5	Ap
CO – 5	analyse the importance of MS Office in business enterprises.	1,2,6	An
CO – 6	create the methods of forming MS Access	1,3,5	Cr



## SEMESTER I

### Part IV Professional English for Commerce and Management - I

Course Code: 21UCOPE1	Hrs/Week: 2	Hrs/Sem: 30	Credits : 2
-----------------------	-------------	-------------	-------------

#### Course Outcomes :

CO No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO – 1	improve their competence in using the language.	1,5,8	Un
CO – 2	be proficient in reading.	1,5,8	Ap
CO – 3	develop content with Pictures/Hints	1,5,8	Ap
CO – 4	apply their writing skills in academic life	1,5,8	Ap
CO – 5	write without error of spelling or grammar	1,5,8	Ap
CO - 6	identify the difference between brainstorming and brainwriting	1,5,8	Un



## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

**SEMESTER –II****Part III                      Core III                      Financial Accounting II****Course Code: 21UCOC21****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	identify the nature of expenses as capital, revenue and deferred for correct presentation in the final accounts of any company.	1,2,4	Ap
CO – 2	prepare accounts of non-trading concerns and professionals and royalties	1,5,8	Ap
CO – 3	understand the concept related to consignment and joint venture with normal and abnormal losses	1,5	Un
CO – 4	prepare consignment and joint venture account	1,2	Ap
CO – 5	prepare the self-balancing accounts and sectional balancing accounts and its various adjustments	1,3,6	An
CO - 6	evaluate the process of computing royalties with minimum rent, short workings and sub lease	2,4,5	Ev



SEMESTER – II			
<b>Part III</b>	<b>Core-IV</b>	<b>Principles of Marketing</b>	
<b>Course Code:21UCOC22</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>

**Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the nature, importance and classification of markets.	1,2	Un
CO – 2	understand the functions of marketing and marketing mix.	1,2	Un
CO – 3	evaluate the role of wholesalers and retailers.	1,2,3,5	Ev
CO – 4	evaluate the importance of sales promotion and qualities of successful salesmen.	2,3,4	Ev
CO – 5	understand about the product planning, development and product life cycle through modification.	1,4	Un
CO – 6	analyse the pros and cons of the various channels of distribution.	4,5	An

## SEMESTER II

<b>Part III</b>	<b>Allied II</b>	<b>Business Management</b>	
<b>Course Code: 21UCOA21</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various concepts in business.	1,2,3	Ap
CO – 3	assess the principles of direction and its importance.	1,4	Ev
CO – 4	familiarise with the controlling and co-ordination techniques.	1,4	An
CO - 5	analyse the importance of decision making in business.	1,2,3	An
CO - 6	exhibit knowledge and skills relevant to principles of direction	2,4,5	Ap



## SEMESTER II

### Part IV Professional English for Commerce and Management - II

<b>Course Code: 21UCOPE2</b>	<b>Hrs/Week: 2</b>	<b>Hrs/Sem: 30</b>	<b>Credits : 2</b>
------------------------------	--------------------	--------------------	--------------------

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the role of internet in business	1,5,8	Un
CO – 2	examine the different modes of online communication	1,5,8	An
CO – 3	draft letters pertaining to business activities	1,5,8	Ap
CO – 4	demonstrate in dignified self presentation	1,5,8	Ap
CO – 5	evaluate the difference between public speaking and talking	1,5,8	Ev
CO -6	use language for speaking with confidence in an intelligible and acceptable manner	1,5,8	Ev



**SEMESTER –III****Part III Core V****Advanced Financial Accounting****Course Code: 21UCOC31****Hrs/Week: 6****Hrs/ Sem: 90****Credits : 4****Course Outcomes:**

<b>CO. No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	prepare partnership accounts in case of admission.	1,2, 5	Ap
CO – 2	have practical knowledge regarding the maintenance of partnership accounts in case of retirement and death of a partner.	1,2,5	Ap
CO – 3	work on partnership accounts in case of dissolution of a firm.	1,2,5	Ap
CO - 4	know about the maintenance of accounts relating to branch accounts and departmental accounts.	1,2,5	Un
CO – 5	calculate profits involved in sending goods at invoice price.	1,5,8	Ap
CO – 6	have working knowledge on the accounts prepared under hire purchase system.	1,5,6	Ap



**SEMESTER –III****Part III Allied****Business Mathematics****Course Code: 21UCOA31****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the theory of indices	6,8	Un
CO – 2	use formulae, logarithms and mathematical expressions problems in equations	2,4	Ap
CO – 3	evaluate the methods of interest account and their basic applications in practice	1,5	Ev
CO – 4	analyse the mathematical skills required in mathematically intensive areas of business	4,7	An
CO – 5	measure the matrix rule	2,3	Ev
CO – 6	appraise the acquired knowledge and skills with practical problems in business mathematics	3,5	An



**SEMESTER –III****Part III Core SB****E – Accounting****Course Code: 21UCOS31****Hrs/Week: 4****Hrs/Sem: 60****Credits : 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	develop the computerized knowledge in accounting	1,2,3	Un
CO-2	impart the basic principles and concepts of computerized accounting	1,2	Un
CO-3	assess on the use and application of Tally	1,2	Ev
CO-4	describe about the concept of vouchers	2,4	Un
CO-5	prepare inventory accounting and prepare final accounts	1,5,8	Ap
CO-6	make use of cost category and cost centers in voucher	1,5	Ap



### SEMESTER –III

#### Part III Non Major Elective Principles of Accountancy

**Course Code: 21UCON31**

**Hrs/Week: 2**

**Hrs/Sem: 30**

**Credits : 2**

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO Addressed	Cognitive Level
CO – 1	have a fundamental knowledge on basic rules of Accounting.	1,2,5	Un
CO – 2	prepare the Trial balance.	1,2,3,8	Ap
CO – 3	prepare the journal	1,2	Ap
CO – 4	prepare the ledger	2,8	Ap
CO – 5	prepare the subsidiary books	2,8	Ap
CO – 6	prepare Trading, Profit and Loss account and Balance Sheet	2,5	Ap



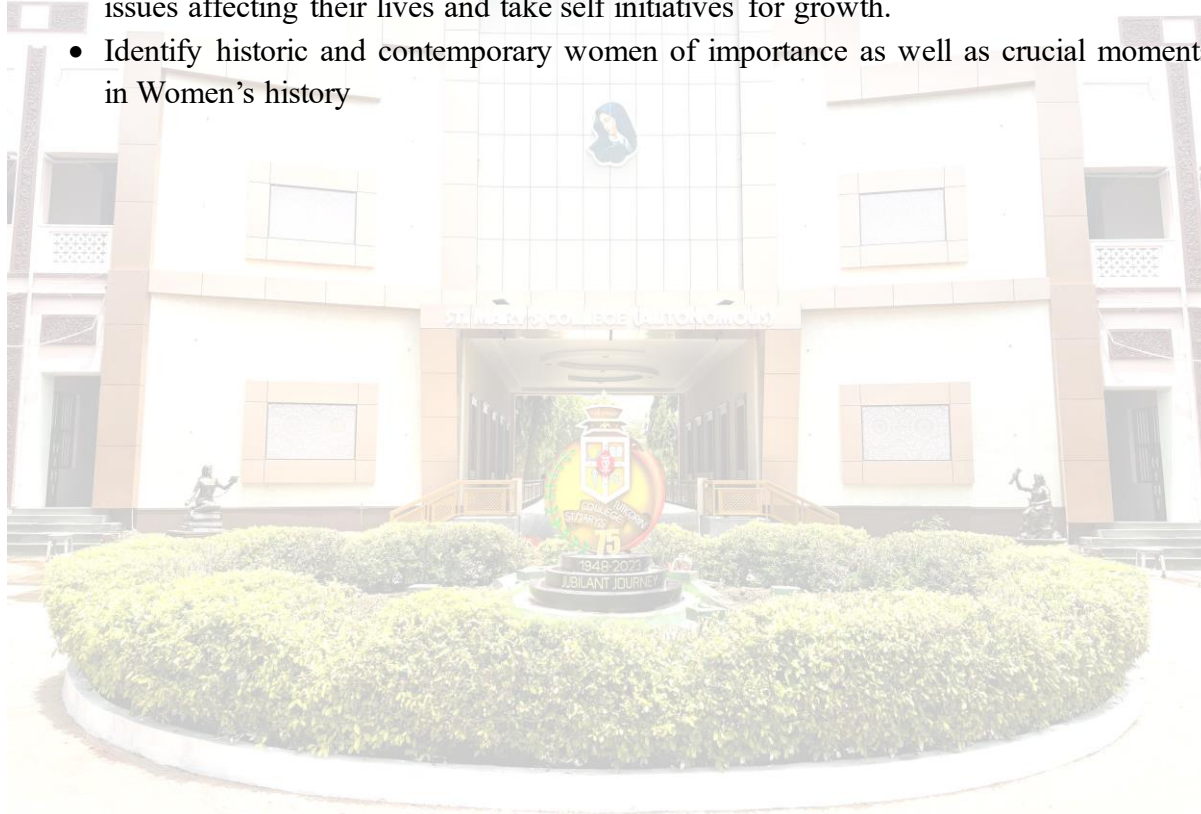
### Semester – III

#### Women's Synergy

Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





**SEMESTER –IV****Part III Core VI****Corporate Accounting****Course Code: 21UCOC41****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the procedures on issue of shares.	1,2	Un
CO – 2	have working knowledge on redemption of preference shares and debentures.	1,4, 5	Ap
CO – 3	calculate profit prior to incorporation.	2,5, 8	Ap
CO - 4	have practical knowledge on the accounting for amalgamation and external reconstruction.	2,5,8	Ap
CO – 5	analyse the various schemes for capital reduction.	2,5,8	An
CO – 6	apply the procedures for the preparation of liquidator's financial statements.	2,5,8	Ap

SEMESTER –IV			
Part III	Allied	Business Statistics	
Course Code 21UCOA41	Hrs/Week: 5	Hrs/Sem: 75	Credits : 5

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the basic concepts of statistics and statistical tools.	6,8	Un
CO – 2	know the measures of central tendency and assess statistical averages.	2,4	An
CO – 3	test the tools on measures of dispersion that are useful for estimating variations.	3,7	Ev
CO – 4	evaluate whether there is correlation between two variables or not and relate regression for values with period.	1,5	Ev
CO – 5	apply the statistical tools for doing the project work.	1,6	Ap
CO – 6	appraise acquired knowledge and skills with practical problems in business statistics	5,8	An



**SEMESTER-IV****Part III      Core Skill Based      Company Law****Course Code: 21UCOC41****Hrs/Week:4****Hrs/Sem:60****Credits:4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	discuss the provisions related to the formation of different types of companies.	1,2	Un
CO-2	understand the statutory requirements of Incorporation of a company like registration of memorandum, articles, issue of prospectus etc.	3,4	Un
CO-3	analyse the difference between shares and debentures and the procedure for declaration and payment of dividend.	2,5	An
CO-4	understand the role of administrative executives in a company and the procedure for conducting meetings.	1,5	Un
CO-5	know the various requisites for conducting a valid meeting under the Companies Act,2013.	2,5	Un
CO-6	analyze the statutory procedure for the winding up of the company	2,7	An

## SEMESTER –IV

### Part III Non Major Elective E-Banking

**Course Code: 21UCON41**

**Hrs/Week: 2**

**Hrs/Sem.: 30**

**Credits : 2**

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO Addressed	Cognitive Level
CO – 1	have a fundamental knowledge about banking system	1,2,5	Un
CO – 2	fill the forms used in banks	1,2,3,8	Ap
CO – 3	gain fundamental idea about e-banking	1,2	Un
CO – 4	use ATM, PoS and CDM	2,8	Ap
CO – 5	understand about Internet Banking	2,8	Un
CO – 6	describe about Mobile Banking	2,5	Un





## SEMESTER –V

### Part III Core VIII Income Tax Law & Practice I

<b>Course Code: 21UCOC51</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>
------------------------------	--------------------	--------------------	--------------------

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply basic concept and provisions of the Income Tax Act 1961, exempted incomes and calculate Residential status.	1,2,3	Un
CO – 2	compute Salary income	4,5	Ap
CO – 3	compute Income from House property.	2,5	Ap
CO – 4	compute Profits and Gains	5,8	Ap
CO – 5	compute Capital Gains	5,8	Ap
CO – 6	compute Income from other sources.	5,8	Ap



SEMESTER–V			
Part III	Core X	Special Accounts	
Course Code: 21UCOC53	Hrs/Week:6	Hrs/Sem:75	Credits:4

**Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the format of final accounts of Banking Cost, Insurance Cost and Social Responsibility Accounting	4,5	Un
CO-2	prepare the accounts for investments	1,2,5	Ap
CO-3	understand investment accounts, fixed interest securities and variable income securities.	5,8	An
CO-4	prepare voyage accounts	2,5,8	Ap
CO-5	know the statutory provisions relating to banking companies accounts and Insurance company accounts.	1,3,8	Un
CO-6	understand and prepare accounts for Social Responsibility accounting	1,8	Ap



**SEMESTER –V****Part III Core Elective Cost Accounting****Course Code: 21UCOE51****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the objectives and functions of cost accounting and prepare cost sheet	1,5	Un
CO – 2	determine the elements of cost and the techniques of material control.	4,5	Ap
CO – 3	know the concepts of labour cost computation and control	1,5,8	Ap
CO - 4	make overhead allocation, apportionment and absorption of overheads.	1,5	Ap
CO – 5	understand the techniques of Contract costing and prepare contract account.	5,8	Ap
CO - 6	gain knowledge on the techniques of Process costing and prepare process accounts.	5,8	Ap

### Semester - V

#### Common Skill Based Core

#### Computer for Digital Era and Soft Skills

Code : 21UCSB51

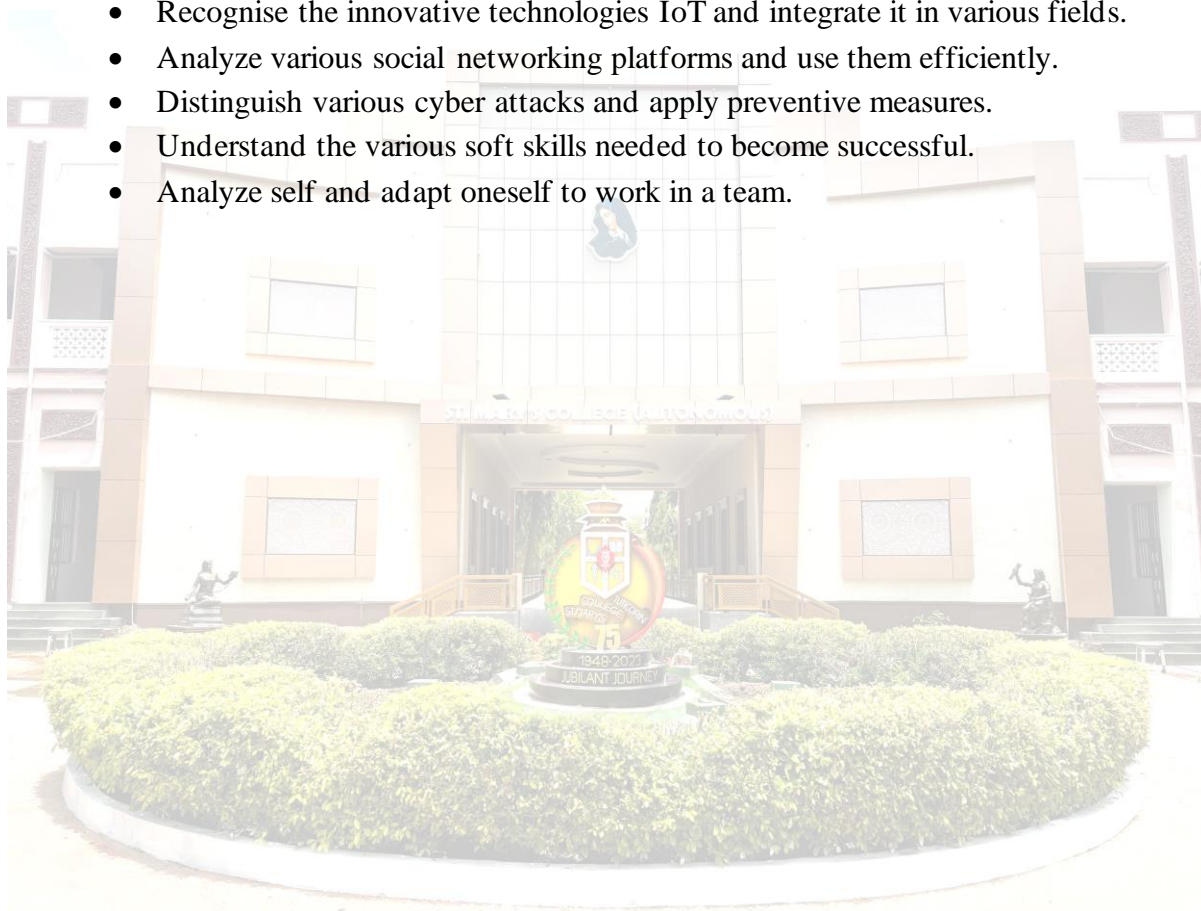
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.





## SEMESTER –VI

### Part III Core XI Income Tax Law and Practice-II

<b>Course Code: 21UCOC61</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>
------------------------------	--------------------	--------------------	--------------------

#### Course outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply the concept of clubbing of income	1,2,3	Ap
CO – 2	set off and carry forward losses	2,5	Ap
CO – 3	understand and apply deductions U/S 80 C to 80 U	2,5	Ap
CO -4	understand the various assessment procedures	5,8	Un
CO -5	compute advance tax and TDS	5,8	Ap
CO – 6	compute income of individuals and firms and prepare the returns	2,5	Ap



**SEMESTER –VI****Part III Core XIII Management Accounting****Course Code: 21UCOC63****Hrs/Week: 6****Hrs/Sem : 90****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	discuss the basic concepts of management accounting and differentiate management accounting from financial accounting and cost accounting.	1,2	Un
CO – 2	examine the contexts where types of ratios can be applied for evaluating the performance and financial position of a firm.	2,5	Ap
CO – 3	evaluate the performance of a firm using funds flow statement and cash flow statement.	5,8	Ev
CO – 4	use marginal costing techniques for optimising cost and profit.	2,3,5	Ap
CO – 5	prepare different types of budgets	1,5	Ap
CO – 6	use the significance of standard costing, budgeting and budgetary control in managerial decision making.	2,5	Ap



## SEMESTER –VI

<b>Part III Core XV</b>	<b>Investment Management</b>		
<b>Course Code: 21UCOC65</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>

### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the sources of investments.	1,3	Un
CO-2	appraise various level of risks.	2,4	An
CO-3	discuss with primary market procedures.	3,6	Un
CO-4	assess the various stock exchanges and their functions.	1,8	Ev
CO-5	analyse the securities according to industry.	1,8	An
CO-6	apply the tools to understand the overall marketing.	5,7	Ap



**Programme: B. Com – Batch II**

<b>SEMESTER –I</b>			
<b>Part III</b>	<b>Core I</b>	<b>Financial Accounting I</b>	
<b>Code:18UCOC11</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>

**Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand book keeping and accounting concepts, conventions and accounting information.	1,2,5	Un
CO – 2	prepare financial statements in accordance with generally accepted accounting principles.	1,2,5,8	Ap
CO – 3	employ critical thinking skills on the effects of different accounting methods on the financial statements.	1,2,4,5	Ap
CO – 4	understand about the preparation of bank reconciliation statement.	1,5	Ap
CO – 5	know about the differences between bill of exchange and promissory note.	1,5	Ap
CO - 6	demonstrate an understanding of the various methods of providing depreciation.	2,4,5	Ev
CO - 7	apply appropriate judgement derived from knowledge of accounting theory in charging depreciation for various assets.	1,5	Ap
CO - 8	effectively calculate the 'no profit/ no loss' date of settlement.	2,4,5	Ev



**SEMESTER –I****Part III Core II****Business Organisation****Code:18UCOC12****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand the basic concepts of business organization and latest developments in the organization of business.	1,3,4,6	Un
CO – 2	understand the basic forms of business organization.	1,2,3	Un
CO – 3	know about the concepts of business ethics, business values and morals.	1,2,4	An
CO – 4	understand about village and small industry sector, development of VSI under the plans, KVIC and its objectives and MSME.	1,6	Ev
CO – 5	know about the dominance of MNC's globalization and globalization of Indian business.	1,3,6	An
CO - 6	demonstrate women entrepreneurship skills.	2,4,5	Ev
CO -7	gain knowledge on the promotional measures relating to KVIC.	1.2.3	Un
CO - 8	analyse the pros and cons of globalisation in the business world.	4,5	Cr

SEMESTER –I			
Part III	Allied I	Business Economics	
Code:18UCOA11	Hrs/Week: 3	Hrs/Sem: 45	Credits : 3

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the various theories of Economics	1,2,3	Re
CO – 2	understand business economics and importance of business economics for managerial decision making.	1,2,4	Un
CO – 3	determine the position of firms using demand and supply conditions.	2,3	Ev
CO – 4	economies of large scale and small scale production.	1,6	Un
CO – 5	analyze Cost Effective Production techniques	5,6	An
CO- 6	determine pricing and costing strategies according to the nature of product and market conditions.	2,4	Ev
CO – 7	use economic theories related with supply and demand	2,7	Ap
CO-8	make optimal business decisions to minimise cost and maximise profit	7,8	Cr

**SEMESTER –I****Part III Allied II Business Information System****Code:18UCOA12****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome :**

CO No.	Upon completion of this course, students will be able to:	PSO addressed	CL
CO – 1	gain thorough knowledge about the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various functions in business.	1,2,3	Ap
CO – 3	know about principles of organization and its forms.	1,4	Ev
CO – 4	understand the motivational theories.	1,2,6	Ap
CO – 5	familiarise with the controlling and co-ordination techniques.	1,4	Ap
CO – 6	exhibit knowledge on importance of controlling and techniques of controlling.	2,7	Ap
CO - 7	analyse the importance of decision making in business.	1,2,6	An
CO - 8	outline the methods of motivation.	7,8	Cr

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct



**SEMESTER –II****Part III    Core III            Financial Accounting II****Code:18UCOC21****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	know the difference between consignment and joint venture.	1,2,4	Ap
CO – 2	prepare various accounts namely accounts of non-trading concerns and professionals, royalties and single entry system.	1,5,8	Ap
CO – 3	understand about the self balancing system and sectional balancing system and its various adjustment accounts.	1,5	Ap
CO – 4	know about the loss of stock and loss of profit under insurance claims.	1,5	Ap
CO – 5	know about the preparation of balance sheet in income and expenditure account.	1,2	Ap
CO - 6	identify the nature of expenses as capital, revenue and deferred for correct presentation in the final accounts of any company.	1,3,6	An
CO - 7	understand the facts related to consignment and joint venture with normal and abnormal losses.	1.2.3	Un
CO - 8	evaluate the process of royalties with minimum rent, short workings and sub lease.	2,4,5	Ev

**SEMESTER –II****Part III Core IV Principles of Marketing****Code:18UCOC22****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to:	PSO addressed	CL
CO – 1	understand the nature, importance and classification of markets.	1,2	Un
CO – 2	understand the functions of marketing and marketing mix.	1,2	Un
CO – 3	evaluate the life cycle of products.	1,2,3,5	Ev
CO - 4	know the importance of sales promotion, advertising and qualities of successful salesmen.	2,3,4	Ap
CO - 5	understand about the product line and product life cycle through modification.	1,4	Ap
CO - 6	demonstrate the importance of branding and packaging.	2,4,5	Ev
CO - 7	know the objectives and methods of pricing.	1,2,3	Un
CO - 8	analyse the pros and cons of the various channels of distribution.	4,5	Cr

**SEMESTER –II****Part III Allied III Business Management****Code:18UCOA21****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	gain thorough knowledge about the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various functions in business.	1,2,3	Ap
CO – 3	know about principles of organization and its forms.	1,4	Ev
CO – 4	understand the motivational theories.	1,2,6	Ap
CO - 5	familiarise with the controlling and co-ordination techniques.	1,4	Ap
CO - 6	exhibit knowledge on importance of controlling and techniques of controlling.	2,4,5	Ev
CO - 7	analyse the importance of decision making in business.	1,2,3	Un
CO - 8	outline the methods of motivation.	4,5	Cr

**SEMESTER –II****Part III                      Allied IV                      Principles of Life Insurance****Code:18UCOA22****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	know the Indian Market System	1,2	Re
CO – 2	understand the Concept of Life Insurance	1,2	Un
CO – 3	effectively calculate premium and bonus for various kinds of policies	1,2,3	Ap
CO – 4	have an insight into the different types of life insurance plans	1,2,4	Ap
CO-5	acquire knowledge about LIC products, and its variations.	1,2,3	Ap
CO - 6	demonstrate knowledge on the different types of annuity plans, group insurance plans etc.	5,6	An
CO - 7	organisational structure at various level	1,8	Ev
CO - 8	take up Licentiate Examination with confidence	5,6,7	Cr



**SEMESTER –III****Part III Core V Advanced Financial Accounting****Code:18UCOC31****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO Addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic accounting issues.	1,2	Ap
CO – 2	gain knowledge regarding the maintenance of partnership accounts in case of admission.	1,2, 5	Ap
CO – 3	have practical knowledge regarding the maintenance of partnership accounts in case of retirement.	1,2, 5	Ap
CO - 4	understand the maintenance of partnership accounts in case of dissolution of a firm.	1,2, 5	Ap
CO – 5	know about the maintenance of accounts relating to branch accounts.	1,2,5	Un
CO – 6	understand the calculation of profit involved in sending goods at invoice price.	1,5,8	Ap
CO – 7	understand about the hire purchase system.	1,5,6	Ap
CO - 8	understand about installment system.	1,8	Ap

**SEMESTER –III****Part III Core-VII****E - Accounting****Code:18UCOC33****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO Addressed</b>	<b>Cognitive Level</b>
CO-1	develop the computerized knowledge in accounting	1,2,3	Un
CO-2	impart the students with the basic principles and concepts of computerized accounting	1,2	Un
CO-3	provide knowledge on the use and application of Tally	1,2	Ev
CO-4	learn about the concept of vouchers	2,4	Un
CO-5	create company in Tally	5,8	Ap
CO-6	create knowledge of inventory accounting	1,5,8	Ev
CO-7	create knowledge of budget control	1,4	An
CO-8	make use of cost category and cost centers in voucher	1,5	Ap

**SEMESTER –III****Part III Allied V Business Communication****Code:18UCOA31****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	gain knowledge on the basic concepts of business communication and help them to understand basic techniques of business.	1,2	Un
CO – 2	understand the basic principle of effective communication and barriers of communication.	1,2,3	Un
CO – 3	help the students write letters on enquiries, offers and quotations, orders and execution.	2,3,4	Ap
CO – 4	know about the collection letters and sales letters.	2,3,5	Ap
CO – 5	understand about bank correspondence.	3,4	Ap
CO – 6	understand about Insurance correspondence	3,4	Ap
CO – 7	know about the public grievance letters.	3,4,5	Ap
CO – 8	know about the letters to the editor and through email.	3,4,5	Ap

**SEMESTER –III****Part III Allied VI Customer Relationship Management****Code:18UCOA32****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of customer relationship management	2,3	Un
CO-2	know the emerging trends in CRM	2,4,6	Un
CO-3	analyze the customer relationship management issues and problems	2,3	An
CO-4	gain the knowledge about the e- CRM	1,2	Ev
CO-5	understand the customer relationship management process	1,2,3	An
CO-6	analyze the technology of integrating CRM with ERP	5,6	An
CO-7	integration of CRM with data warehouse	4,8	Ev
CO-8	learn the concept of Market Basket Analysis	3	Un



**SEMESTER –III****Part III      Core SB      Business Mathematics****Code:18UCOS31****Hrs/Week: 4****Hrs/Sem: 60****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic principles and techniques of mathematics.	1,2	Un
CO – 2	understand how quadratic equations are solved.	2,5	Ap
CO – 3	understand how simultaneous equations are solved with two or more variables.	2,5	Ap
CO – 4	understand indices	1,2	Ap
CO – 5	understand the theory of logarithms.	1,2	Ap
CO – 6	apply matrix rule.	1,2,4,5	Ap
CO – 7	understand how linear equations are solved using matrices.	2,5	Ap
CO – 8	understand calculation of interests (simple, compound), discounts both for cash and credit transactions. (trade, cash, true , banker's discount).	1,2,4,5	Ap

### SEMESTER –III

#### Part III Non Major Elective I Principles of Accountancy

<b>Code:18UCON31</b>	<b>Hrs/Week: 2</b>	<b>Hrs/Sem: 30</b>	<b>Credits : 2</b>
----------------------	--------------------	--------------------	--------------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO – 1	have a fundamental knowledge on basic rules of Accounting.	1,2,5	Un
CO – 2	prepare the Trial balance.	1,2,3,8	Ap
CO – 3	prepare the various subsidiary books	1,2	Ap
CO – 4	prepare the Types of cashbook	2,8	Ap
CO – 5	prepare the petty cash book.	2,8	Ap
CO – 6	prepare the Trading account.	2,5	Ap
CO – 7	prepare the profit and loss account	2,5	Ap
CO – 8	prepare the balance sheet	2,5	Ap



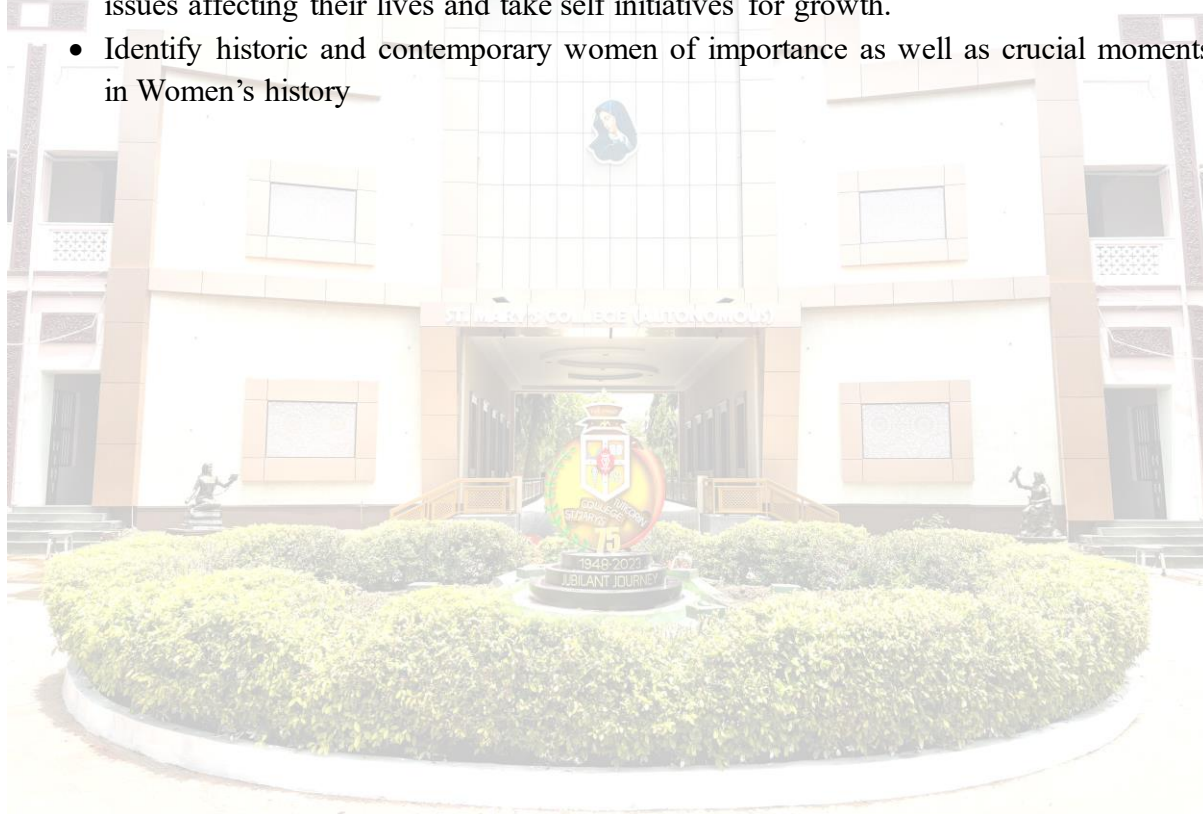
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER –IV****Part III      Core VIII      Corporate Accounting****Code:18UCOC41****Hrs/Week: 6****Hrs / Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand about the issue of shares.	1,2	Un
CO – 2	understand about the redemption of preference shares.	1,4,5	Ap
CO – 3	understand about the issue of shares and debentures.	5,8	Ap
CO – 4	understand the calculation of profit prior to incorporation.	2,5,8	Ap
CO – 5	Practice the maintenance of company final accounts as per revised accounting standards.	1,2	Ap
CO – 6	understand the accounting for amalgamation and external reconstruction.	2,5,8	Ap
CO – 7	analyse the various schemes for capital reduction.	2,5,8	Ap
CO – 8	evaluate the preparation of liquidator's financial statements.	2,5,8	Ap



**SEMESTER –IV****Part III      Core IX                      Company Law****Code:18UCOC42****Hrs/Week: 6****Hrs/ Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the various provisions of Companies Act 2013.	1,2	Un
CO – 2	know the provisions related to the formation of different types of companies.	1,2	Un
CO – 3	differentiate private and public companies.	2,3	An
CO – 4	understand the statutory requirements of Incorporation of a company like registration of memorandum, articles, issue of prospectus etc.	3,4	Un
CO – 5	know the difference between shares and debentures and the procedure for declaration and payment of dividend.	2,5	An
CO – 6	understand the role of administrative executives in a company and the procedure for conducting meetings.	1,5	Un
CO – 7	know the various requisites for conducting a valid meeting under the Companies Act , 2013.	2,5	Un
CO – 8	analyse the statutory procedure for the winding up of the company	2, 7	An

**SEMESTER –IV****Part III Core SB****Business Statistics****Code:18UCOS41****Hrs/Week: 4****Hrs/Sem: 60****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic concepts of statistics and statistical tools.	2,5	Un
CO – 2	understand how statistical tools are applied for doing the project work.	2,5	Un
CO – 3	know the measures of central tendency and apply to measure averages.	2,3	Ev
CO – 4	apply the tools on measures of dispersion that are useful for estimating variations.	2,4,5,8	Ap
CO – 5	evaluate whether there is correlation between two variables or not.	2,3	Ev
CO – 6	apply the various methods for calculating correlation coefficient.	2,4,5,8	Ap
CO – 7	apply regression analysis for estimating values for future period.	2,4,5,8	Ap
CO – 8	apply the various methods for calculating regression coefficient.	2,4,5,8	Ap

**Semester IV****Part III Non Major Elective II Introduction To Cost Accounting****Code:18UCON41****Hrs/Week: 2****Hrs/Sem 30****Credits : 2****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the objectives of cost accounting	1	Un
CO – 2	understand the functions of cost accounting	1	Un
CO – 3	understand the various classifications of cost	1	Un
CO – 4	understand the preparation of cost sheet.	1,2,8	Un,Ap
CO – 5	determine the elements of materials and its types	3,4	Re,Ap
CO – 6	know the various methods of remuneration.	1,8	An
CO – 7	understand the overhead absorption methods.	1,3	Un,Ap
CO – 8	understand overhead allocation and apportionment.	1,3	Un,Ap



**SEMESTER –V****Part III Core XII Income Tax Law & Practice I****Code:18UCOC52****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand and apply basic concept and provisions of the Income Tax Act 1961.	1,2,3	Un
CO – 2	understand the various exempted income and residential status.	2,5	Ap
CO – 3	understand and compute Salary income	4,5	Ap
CO – 4	understand and compute Income from House property.	2,5	Ap
CO – 5	compute Capital gains	5,8	Ap
CO – 6	compute Profits and gains	5,8	Ap
CO -7	compute Income from other sources.	5,8	Ap
CO -8	compute different heads of income.	2,5	Ap



**SEMESTER –V****Part III Core XIII****Business Law****Code:18UCOC53****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Vision:**

To expose students to various business laws.

**Mission:**

To enable students to have adequate knowledge on rules and regulations of commercial laws.

**Course Outcome:**

<b>Co.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the essentials and steps to enter into a contract.	1,2	Un
CO-2	familiarize with the terminology used in contract Act	1,4	Un
CO-3	know about the remedies of breach of contract.	1,2,3	An
CO-4	understand the contract of indemnity and its kinds.	1, 2,5	Un
CO-5	know the performance of Contract	1,4,5	Ap
CO-6	understand the contract of Contract of Guarantee	1,2,8	Un
CO-7	understand the types of bailment, rights and its duties.	1,4	Un
CO-8	know the rights of buyers and sellers, its conditions and warranties regarding Sale of Goods Act.	6,7	Ap

**SEMESTER –V****Part III Core Integral I Special Accounts****Code:18UCOI51****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course outcome:**

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	gain in-depth knowledge in corporate accounting	2,4,5	Un
CO-2	know the format of final accounts of Banking, Insurance and Holding companies	4,5	Ap
CO-3	prepare the accounts for public limited companies	1,2,5	Ev, Ap
CO-4	understand investment accounts, fixed interest securities and variable income securities.	5,8	An
CO-5	understand and prepare voyage accounts	5,8	Un
CO-6	know about statutory laws relating to banking companies accounts	1,3,8	Un, Ap
CO-7	know about statutory laws relating to insurance company accounts.	1,2,5	Un, Ap
CO-8	understand and prepare accounts of holding companies.	1,8	Un, Ap

SEMESTER –V			
Part III Core Integral II		Cost Accounting	
Code:18UCOI52	Hrs/Week: 5	Hrs/Sem: 75	Credits : 4

**Course Outcome :**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the objectives and functions of cost accounting	1,5	Un
CO – 2	understand the preparation of cost sheet.	1,5,8	Ap
CO – 3	determine the elements of material and the techniques of material control	4,5	Un,Ap
CO - 4	know the concepts of labour cost computation and control.	1,5,8	Un,Ap
CO – 5	understand the overhead allocation and apportionment.	1,5	Un,Ap
CO - 6	gain knowledge on absorption of overheads	1,7,8	Un,Ap
CO – 7	understand the techniques of Contract costing	5,8	Un,Ap
CO – 8	gain knowledge on the techniques of Process costing and prepare process accounts.	5,8	Un,Ap

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

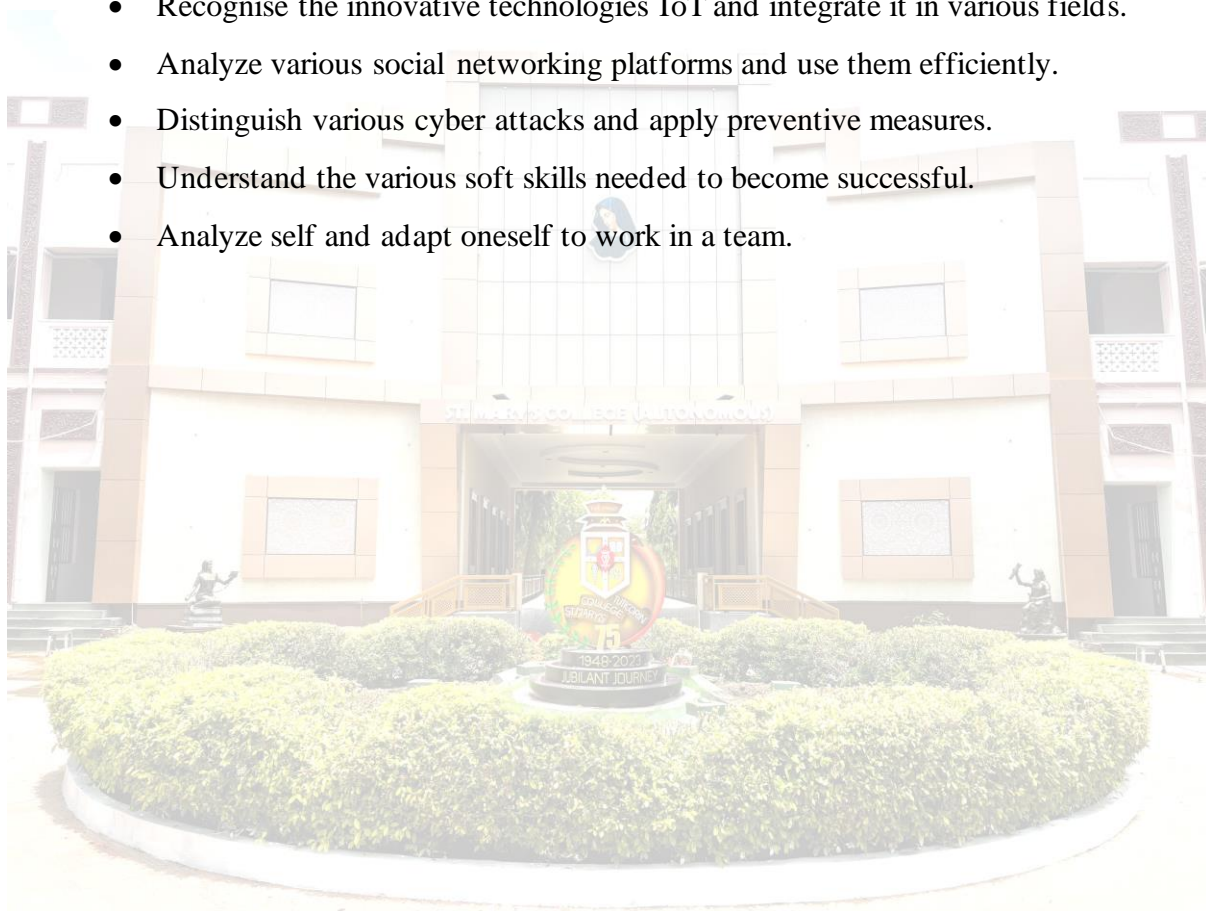
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.





**SEMESTER –VI****Part III Core XIV Management Accounting****Code:18UCOC61****Hrs/Week: 6****Hrs/Sem : 90****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic concepts of management accounting and differentiate management accounting from financial accounting and cost accounting.	1,2	Un
CO – 2	understand the contexts where types of ratios can be applied for evaluating the performance and financial position of a firm.	2,5	Un,Ap
CO – 3	evaluate the performance of a firm using fund flow statement.	5,8	Ev,Ap
CO – 4	evaluate the performance of a firm using cash flow statement.	5,8	Ev,Ap
CO - 5	use marginal costing techniques for optimising cost and profit.	2,3,5	Un,Ap
CO - 6	understand the features and importance of budgets and budgetary control	1,5	Un,Ap
CO - 7	prepare various budgets	5,8	An,Ap
CO - 8	identify the significance of standard costing, budgeting and budgetary control in managerial decision making.	2,5	An,Ap

## SEMESTER –VI

### Part III Core XV Income Tax Law and Practice-II

**Code:18UCOC62**

**Hrs/Week: 6**

**Hrs/Sem: 90**

**Credits : 4**

#### Course outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply the concept of clubbing of income	1,2,3	Un
CO – 2	set off and carry forward losses	2,5	Ap
CO – 3	understand and apply deductions U/S 80 C to 80 U	2,5	Ap
CO -4	understand the various assessment procedures	5,8	Ap
CO -5	understand and compute advance tax and TDS	5,8	Ap
CO – 6	understand and apply the tax rate and deductions.	4,5	Ap
CO – 7	compute income of individuals and firms.	2,5	Ap
CO – 8	prepare Income Tax returns of individuals and firms	5,8	Ap



**SEMESTER –VI****Part III Core XVI Industrial Law****Code:18UCOC63****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the disputes of strike, lock out, retrenchment, lay off and compensation	1,2	Un
CO-2	know about the welfare, safety and health of workers.	2,5,8	Ap
CO-3	analyse Women and Factories Act	4,5,8	Ap
CO-4	understand the various act relating to payments.	5,8	Ap
CO-5	understand the rules regarding workmen's compensation.	2,5	Un
CO-6	know the Minimum Wages Act	1,3	An
CO-7	understand the Trade Union Act	1,4	Un
CO-8	know the rights and duties of Employee State Insurance Act.	7,8	Ev

**SEMESTER –VI****Part III Core Integral III Financial Services****Code:18UCOI61****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	know the framework of Financial Markets in India.	1,3	Un
CO-2	be familiar with the functions of Financial Services.	2,4	An
CO-3	gain knowledge on the avenues of financial services	3,6	Un
CO-4	be an expertise in various Financial markets and its Services	1,8	Ev
CO-5	understand the term Merchant Banking	1,8	Ap
CO-6	know Lease Financing	4,6	Un
CO-7	understand the activities and scope of venture capital and also the functions of credit rating	5,7	Ap
CO-8	understand Mutual Funds and its application	1,7	An



**SEMESTER –VI****Part IV Core Integral IV Investment Management****Code:18UCOI62****Hrs/Week: 7****Hrs/Sem: 105****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the sources of investments.	1,3	Un
CO-2	know of various level of risks.	2,4	An
CO-3	adapt with primary market procedures.	3,6	Un
CO-4	be familiarised with various stock exchanges and their functions.	1,8	Ev
CO-5	analyse the securities according to industry.	1,8	Ap
CO-6	analyse the securities technically.	4,6	Un
CO-7	apply the tools to understand the overall marketing.	5,7	Ap
CO-8	know the investment pattern.	1,7	An

## SEMESTER –I

<b>Part III</b>	<b>Core I</b>	<b>Financial Accounting I</b>		
<b>Course Code: 21UCOC11</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>	

### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand book keeping and accounting concepts and conventions as per Accounting Standards of India.	1,2,5	Un
CO – 2	prepare financial statements of sole traders accordance with generally accepted accounting principles.	1,2,5,8	Ap
CO – 3	understand and prepare bank reconciliation statement.	1,5	Ap
CO – 4	demonstrate and compare the various methods of providing depreciation.	2,4,5	Ev
CO – 5	apply appropriate judgment derived from knowledge of accounting theory in charging depreciation for various assets.	1,5	Ev
CO – 6	effectively demonstrate skills relating to rectification of errors.	2,4,5	Ap

## SEMESTER –I

<b>Part III                      Core II                      Business Organisation</b>			
<b>Course Code:21UCOC12</b>	<b>Hrs/Week: 5</b>	<b>Hrs/ Sem: 75</b>	<b>Credits : 4</b>

### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO – 1	understand the basic concepts and latest developments in the organisation of business.	1,3,4,6	Un
CO – 2	understand the basic forms of business organisation.	1,2,3	Un
CO – 3	know about the concepts of business ethics, business values and morals.	1,2,4	Un
CO – 4	appraise about MSME, recent changes in MSME sector, development of VSI under the plans, KVIC and its objectives .	1,6	Ev
CO – 5	know about the dominance of MNC in globalisation and globalisation of Indian business.	1,3,6	Un
CO – 6	analyse the pros and cons of globalisation in the business world and create new business models	4,5	An

SEMESTER –I			
<b>Part III</b>	<b>Allied I</b>	<b>Business Information System</b>	
<b>Course Code: 21UCOA11</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

**Course Outcomes :**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	gain thorough knowledge about the fundamentals of MS Word	2,4,5	Un
CO – 2	familiarise with the calculations made in excel sheets	1,2,4	Ap
CO – 3	exhibit skills in power point	1,3,5	Ap
CO – 4	design the documents with various formats and designs	1,3,4,5	Ap
CO – 5	analyse the importance of MS Office in business enterprises.	1,2,6	An
CO – 6	create the methods of forming MS Access	1,3,5	Cr





## SEMESTER I

### Part IV Professional English for Commerce and Management - I

<b>Course Code: 21UCOPE1</b>	<b>Hrs/Week: 2</b>	<b>Hrs/Sem: 30</b>	<b>Credits : 2</b>
------------------------------	--------------------	--------------------	--------------------

#### Course Outcomes :

CO No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO – 1	improve their competence in using the language.	1,5,8	Un
CO – 2	be proficient in reading.	1,5,8	Ap
CO – 3	develop content with Pictures/Hints	1,5,8	Ap
CO – 4	apply their writing skills in academic life	1,5,8	Ap
CO – 5	write without error of spelling or grammar	1,5,8	Ap
CO - 6	identify the difference between brainstorming and brainwriting	1,5,8	Un



## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

**SEMESTER –II****Part III                      Core III                      Financial Accounting II****Course Code: 21UCOC21****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	identify the nature of expenses as capital, revenue and deferred for correct presentation in the final accounts of any company.	1,2,4	Ap
CO – 2	prepare accounts of non-trading concerns and professionals and royalties	1,5,8	Ap
CO – 3	understand the concept related to consignment and joint venture with normal and abnormal losses	1,5	Un
CO – 4	prepare consignment and joint venture account	1,2	Ap
CO – 5	prepare the self-balancing accounts and sectional balancing accounts and its various adjustments	1,3,6	An
CO - 6	evaluate the process of computing royalties with minimum rent, short workings and sub lease	2,4,5	Ev

SEMESTER – II			
<b>Part III</b>	<b>Core-IV</b>	<b>Principles of Marketing</b>	
<b>Course Code:21UCOC22</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>

**Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the nature, importance and classification of markets.	1,2	Un
CO – 2	understand the functions of marketing and marketing mix.	1,2	Un
CO – 3	evaluate the role of wholesalers and retailers.	1,2,3,5	Ev
CO – 4	evaluate the importance of sales promotion and qualities of successful salesmen.	2,3,4	Ev
CO – 5	understand about the product planning, development and product life cycle through modification.	1,4	Un
CO – 6	analyse the pros and cons of the various channels of distribution.	4,5	An



## SEMESTER II

<b>Part III</b>	<b>Allied II</b>	<b>Business Management</b>	
<b>Course Code: 21UCOA21</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various concepts in business.	1,2,3	Ap
CO – 3	assess the principles of direction and its importance.	1,4	Ev
CO – 4	familiarise with the controlling and co-ordination techniques.	1,4	An
CO - 5	analyse the importance of decision making in business.	1,2,3	An
CO - 6	exhibit knowledge and skills relevant to principles of direction	2,4,5	Ap



## SEMESTER II

### Part IV Professional English for Commerce and Management - II

Course Code: 21UCOPE2

Hrs/Week: 2

Hrs/Sem: 30

Credits : 2

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the role of internet in business	1,5,8	Un
CO – 2	examine the different modes of online communication	1,5,8	An
CO – 3	draft letters pertaining to business activities	1,5,8	Ap
CO – 4	demonstrate in dignified self presentation	1,5,8	Ap
CO – 5	evaluate the difference between public speaking and talking	1,5,8	Ev
CO -6	use language for speaking with confidence in an intelligible and acceptable manner	1,5,8	Ev



**SEMESTER –III****Part III Core V****Advanced Financial Accounting****Course Code: 21UCOC31****Hrs/Week: 6****Hrs/ Sem: 90****Credits : 4****Course Outcomes:**

<b>CO. No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	prepare partnership accounts in case of admission.	1,2, 5	Ap
CO – 2	have practical knowledge regarding the maintenance of partnership accounts in case of retirement and death of a partner.	1,2,5	Ap
CO – 3	work on partnership accounts in case of dissolution of a firm.	1,2,5	Ap
CO - 4	know about the maintenance of accounts relating to branch accounts and departmental accounts.	1,2,5	Un
CO – 5	calculate profits involved in sending goods at invoice price.	1,5,8	Ap
CO – 6	have working knowledge on the accounts prepared under hire purchase system.	1,5,6	Ap

**SEMESTER –III****Part III Allied****Business Mathematics****Course Code: 21UCOA31****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the theory of indices	6,8	Un
CO – 2	use formulae, logarithms and mathematical expressions problems in equations	2,4	Ap
CO – 3	evaluate the methods of interest account and their basic applications in practice	1,5	Ev
CO – 4	analyse the mathematical skills required in mathematically intensive areas of business	4,7	An
CO – 5	measure the matrix rule	2,3	Ev
CO – 6	appraise the acquired knowledge and skills with practical problems in business mathematics	3,5	An





### SEMESTER –III

<b>Part III</b>	<b>Core SB</b>	<b>E – Accounting</b>	
<b>Course Code: 21UCOS31</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	develop the computerized knowledge in accounting	1,2,3	Un
CO-2	impart the basic principles and concepts of computerized accounting	1,2	Un
CO-3	assess on the use and application of Tally	1,2	Ev
CO-4	describe about the concept of vouchers	2,4	Un
CO-5	prepare inventory accounting and prepare final accounts	1,5,8	Ap
CO-6	make use of cost category and cost centers in voucher	1,5	Ap



### SEMESTER –III

#### Part III Non Major Elective Principles of Accountancy

**Course Code: 21UCON31**

**Hrs/Week: 2**

**Hrs/Sem: 30**

**Credits : 2**

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO Addressed	Cognitive Level
CO – 1	have a fundamental knowledge on basic rules of Accounting.	1,2,5	Un
CO – 2	prepare the Trial balance.	1,2,3,8	Ap
CO – 3	prepare the journal	1,2	Ap
CO – 4	prepare the ledger	2,8	Ap
CO – 5	prepare the subsidiary books	2,8	Ap
CO – 6	prepare Trading, Profit and Loss account and Balance Sheet	2,5	Ap



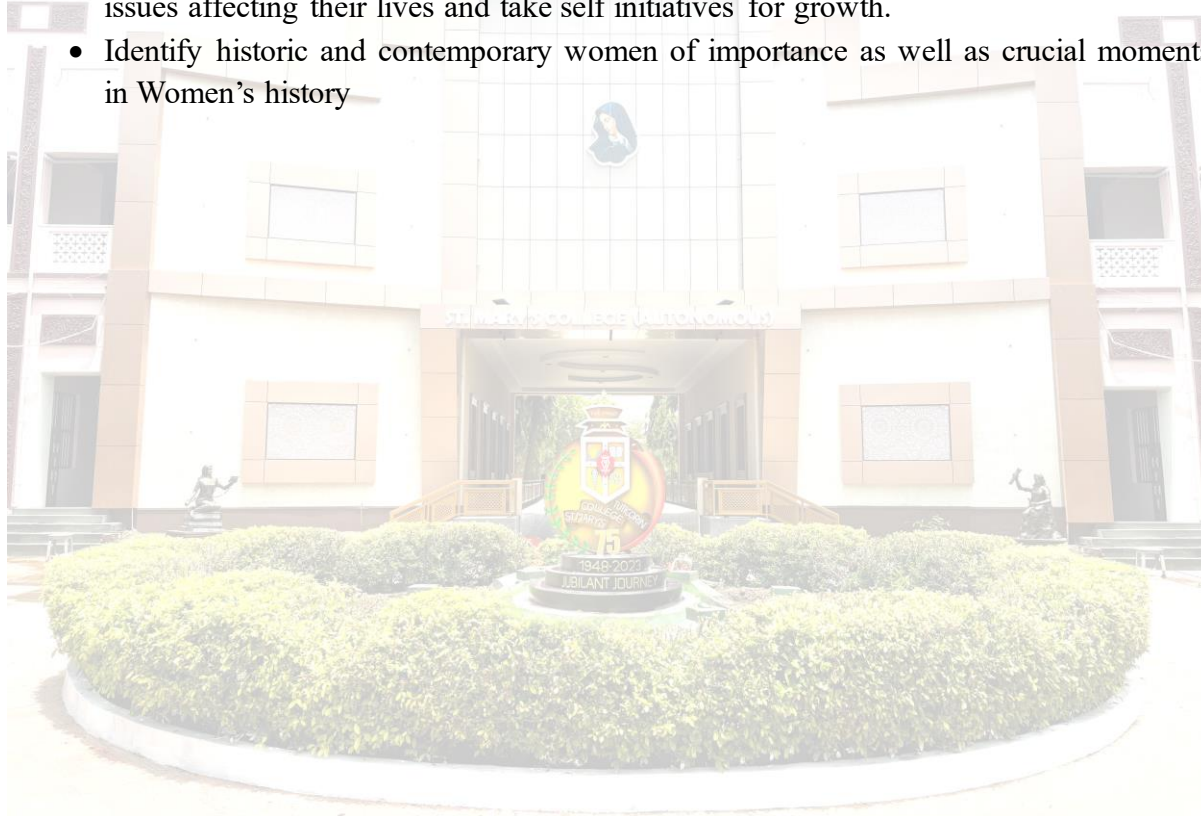
### Semester – III

#### Women's Synergy

Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER –IV****Part III      Core VI****Corporate Accounting****Course Code: 21UCOC41****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the procedures on issue of shares.	1,2	Un
CO – 2	have working knowledge on redemption of preference shares and debentures.	1,4, 5	Ap
CO – 3	calculate profit prior to incorporation.	2,5, 8	Ap
CO - 4	have practical knowledge on the accounting for amalgamation and external reconstruction.	2,5,8	Ap
CO – 5	analyse the various schemes for capital reduction.	2,5,8	An
CO – 6	apply the procedures for the preparation of liquidator's financial statements.	2,5,8	Ap



SEMESTER –IV			
Part III	Allied	Business Statistics	
Course Code 21UCOA41	Hrs/Week: 5	Hrs/Sem: 75	Credits : 5

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the basic concepts of statistics and statistical tools.	6,8	Un
CO – 2	know the measures of central tendency and assess statistical averages.	2,4	An
CO – 3	test the tools on measures of dispersion that are useful for estimating variations.	3,7	Ev
CO – 4	evaluate whether there is correlation between two variables or not and relate regression for values with period.	1,5	Ev
CO – 5	apply the statistical tools for doing the project work.	1,6	Ap
CO – 6	appraise acquired knowledge and skills with practical problems in business statistics	5,8	An



**SEMESTER-IV****Part III      Core Skill Based      Company Law****Course Code: 21UCOC41****Hrs/Week:4****Hrs/Sem:60****Credits:4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	discuss the provisions related to the formation of different types of companies.	1,2	Un
CO-2	understand the statutory requirements of Incorporation of a company like registration of memorandum, articles, issue of prospectus etc.	3,4	Un
CO-3	analyse the difference between shares and debentures and the procedure for declaration and payment of dividend.	2,5	An
CO-4	understand the role of administrative executives in a company and the procedure for conducting meetings.	1,5	Un
CO-5	know the various requisites for conducting a valid meeting under the Companies Act,2013.	2,5	Un
CO-6	analyze the statutory procedure for the winding up of the company	2,7	An

## SEMESTER –IV

### Part III Non Major Elective E-Banking

**Course Code: 21UCON41**

**Hrs/Week: 2**

**Hrs/Sem.: 30**

**Credits : 2**

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO Addressed	Cognitive Level
CO – 1	have a fundamental knowledge about banking system	1,2,5	Un
CO – 2	fill the forms used in banks	1,2,3,8	Ap
CO – 3	gain fundamental idea about e-banking	1,2	Un
CO – 4	use ATM, PoS and CDM	2,8	Ap
CO – 5	understand about Internet Banking	2,8	Un
CO – 6	describe about Mobile Banking	2,5	Un



**SEMESTER –V****Part III Core VIII Income Tax Law & Practice I****Course Code: 21UCOC51****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply basic concept and provisions of the Income Tax Act 1961, exempted incomes and calculate Residential status.	1,2,3	Un
CO – 2	compute Salary income	4,5	Ap
CO – 3	compute Income from House property.	2,5	Ap
CO – 4	compute Profits and Gains	5,8	Ap
CO – 5	compute Capital Gains	5,8	Ap
CO – 6	compute Income from other sources.	5,8	Ap





SEMESTER–V			
Part III	Core X	Special Accounts	
Course Code: 21UCOC53	Hrs/Week:6	Hrs/Sem:75	Credits:4

**Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the format of final accounts of Banking Cost, Insurance Cost and Social Responsibility Accounting	4,5	Un
CO-2	prepare the accounts for investments	1,2,5	Ap
CO-3	understand investment accounts, fixed interest securities and variable income securities.	5,8	An
CO-4	prepare voyage accounts	2,5,8	Ap
CO-5	know the statutory provisions relating to banking companies accounts and Insurance company accounts.	1,3,8	Un
CO-6	understand and prepare accounts for Social Responsibility accounting	1,8	Ap



**SEMESTER –V****Part III Core Elective Cost Accounting****Course Code: 21UCOE51****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the objectives and functions of cost accounting and prepare cost sheet	1,5	Un
CO – 2	determine the elements of cost and the techniques of material control.	4,5	Ap
CO – 3	know the concepts of labour cost computation and control	1,5,8	Ap
CO - 4	make overhead allocation, apportionment and absorption of overheads.	1,5	Ap
CO – 5	understand the techniques of Contract costing and prepare contract account.	5,8	Ap
CO - 6	gain knowledge on the techniques of Process costing and prepare process accounts.	5,8	Ap

### Semester - V

#### Common Skill Based Core

#### Computer for Digital Era and Soft Skills

Code : 21UCSB51

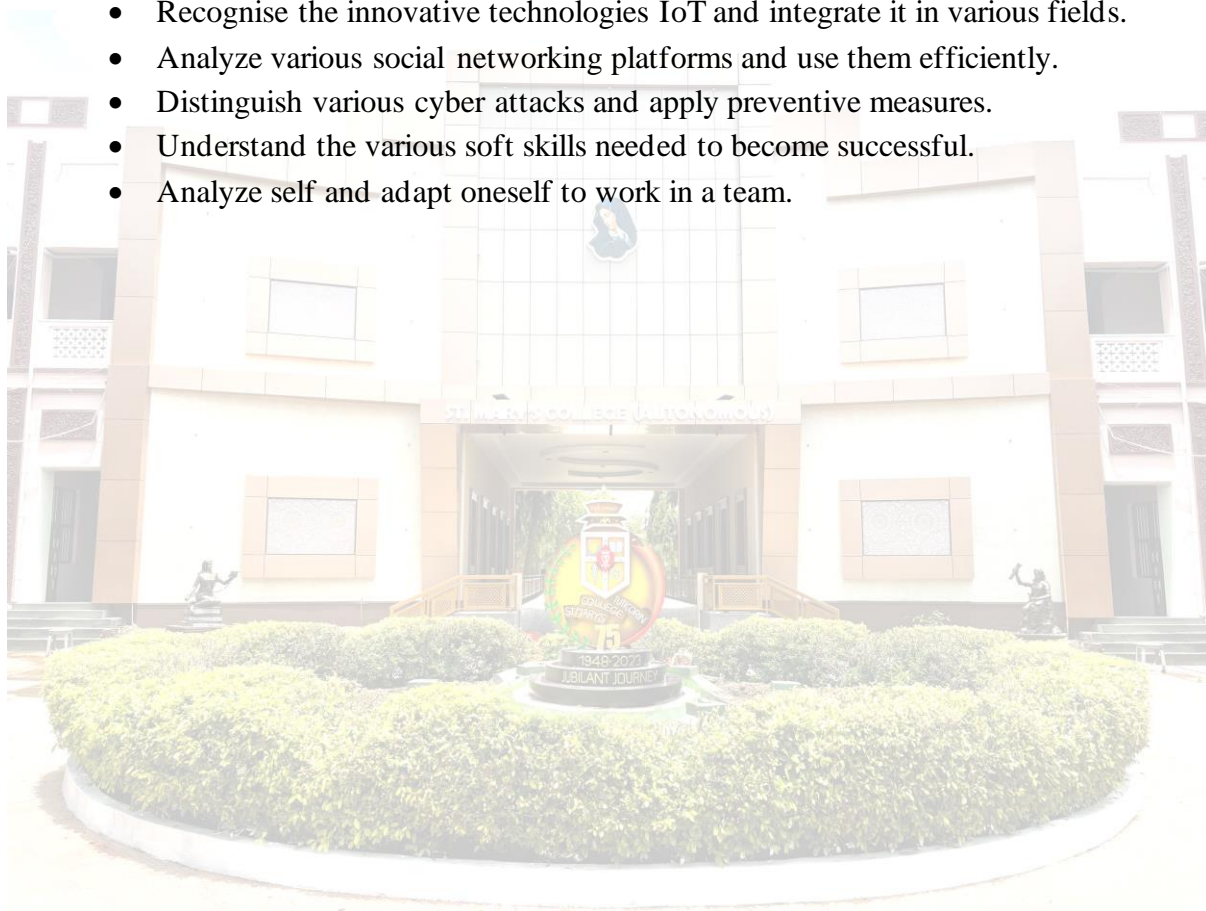
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



## SEMESTER –VI

### Part III Core XI Income Tax Law and Practice-II

<b>Course Code: 21UCOC61</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>
------------------------------	--------------------	--------------------	--------------------

#### Course outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply the concept of clubbing of income	1,2,3	Ap
CO – 2	set off and carry forward losses	2,5	Ap
CO – 3	understand and apply deductions U/S 80 C to 80 U	2,5	Ap
CO -4	understand the various assessment procedures	5,8	Un
CO -5	compute advance tax and TDS	5,8	Ap
CO – 6	compute income of individuals and firms and prepare the returns	2,5	Ap





## SEMESTER –VI

### Part III Core XIII Management Accounting

Course Code: 21UCOC63	Hrs/Week: 6	Hrs/Sem : 90	Credits : 4
-----------------------	-------------	--------------	-------------

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	discuss the basic concepts of management accounting and differentiate management accounting from financial accounting and cost accounting.	1,2	Un
CO – 2	examine the contexts where types of ratios can be applied for evaluating the performance and financial position of a firm.	2,5	Ap
CO – 3	evaluate the performance of a firm using funds flow statement and cash flow statement.	5,8	Ev
CO – 4	use marginal costing techniques for optimising cost and profit.	2,3,5	Ap
CO – 5	prepare different types of budgets	1,5	Ap
CO – 6	use the significance of standard costing, budgeting and budgetary control in managerial decision making.	2,5	Ap



## SEMESTER –VI

<b>Part III Core XV</b>		<b>Investment Management</b>	
<b>Course Code: 21UCOC65</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>

### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the sources of investments.	1,3	Un
CO-2	appraise various level of risks.	2,4	An
CO-3	discuss with primary market procedures.	3,6	Un
CO-4	assess the various stock exchanges and their functions.	1,8	Ev
CO-5	analyse the securities according to industry.	1,8	An
CO-6	apply the tools to understand the overall marketing.	5,7	Ap



**Programme: B. Com – Batch III**

<b>SEMESTER –I</b>			
<b>Part III</b>	<b>Core I</b>	<b>Financial Accounting I</b>	
<b>Code:18UCOC11</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>

**Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand book keeping and accounting concepts, conventions and accounting information.	1,2,5	Un
CO – 2	prepare financial statements in accordance with generally accepted accounting principles.	1,2,5,8	Ap
CO – 3	employ critical thinking skills on the effects of different accounting methods on the financial statements.	1,2,4,5	Ap
CO – 4	understand about the preparation of bank reconciliation statement.	1,5	Ap
CO – 5	know about the differences between bill of exchange and promissory note.	1,5	Ap
CO - 6	demonstrate an understanding of the various methods of providing depreciation.	2,4,5	Ev
CO - 7	apply appropriate judgement derived from knowledge of accounting theory in charging depreciation for various assets.	1,5	Ap
CO - 8	effectively calculate the 'no profit/ no loss' date of settlement.	2,4,5	Ev

**SEMESTER –I****Part III Core II Business Organisation****Code:18UCOC12****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand the basic concepts of business organization and latest developments in the organization of business.	1,3,4,6	Un
CO – 2	understand the basic forms of business organization.	1,2,3	Un
CO – 3	know about the concepts of business ethics, business values and morals.	1,2,4	An
CO – 4	understand about village and small industry sector, development of VSI under the plans, KVIC and its objectives and MSME.	1,6	Ev
CO – 5	know about the dominance of MNC's globalization and globalization of Indian business.	1,3,6	An
CO - 6	demonstrate women entrepreneurship skills.	2,4,5	Ev
CO -7	gain knowledge on the promotional measures relating to KVIC.	1.2.3	Un
CO - 8	analyse the pros and cons of globalisation in the business world.	4,5	Cr



SEMESTER –I			
Part III	Allied I	Business Economics	
Code:18UCOA11	Hrs/Week: 3	Hrs/Sem: 45	Credits : 3

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the various theories of Economics	1,2,3	Re
CO – 2	understand business economics and importance of business economics for managerial decision making.	1,2,4	Un
CO – 3	determine the position of firms using demand and supply conditions.	2,3	Ev
CO – 4	economies of large scale and small scale production.	1,6	Un
CO – 5	analyze Cost Effective Production techniques	5,6	An
CO- 6	determine pricing and costing strategies according to the nature of product and market conditions.	2,4	Ev
CO – 7	use economic theories related with supply and demand	2,7	Ap
CO-8	make optimal business decisions to minimise cost and maximise profit	7,8	Cr

**SEMESTER –I****Part III Allied II Business Information System****Code:18UCOA12****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome :**

CO No.	Upon completion of this course, students will be able to:	PSO addressed	CL
CO – 1	gain thorough knowledge about the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various functions in business.	1,2,3	Ap
CO – 3	know about principles of organization and its forms.	1,4	Ev
CO – 4	understand the motivational theories.	1,2,6	Ap
CO – 5	familiarise with the controlling and co-ordination techniques.	1,4	Ap
CO – 6	exhibit knowledge on importance of controlling and techniques of controlling.	2,7	Ap
CO - 7	analyse the importance of decision making in business.	1,2,6	An
CO - 8	outline the methods of motivation.	7,8	Cr

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER –II****Part III    Core III            Financial Accounting II****Code:18UCOC21****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	know the difference between consignment and joint venture.	1,2,4	Ap
CO – 2	prepare various accounts namely accounts of non-trading concerns and professionals, royalties and single entry system.	1,5,8	Ap
CO – 3	understand about the self balancing system and sectional balancing system and its various adjustment accounts.	1,5	Ap
CO – 4	know about the loss of stock and loss of profit under insurance claims.	1,5	Ap
CO – 5	know about the preparation of balance sheet in income and expenditure account.	1,2	Ap
CO - 6	identify the nature of expenses as capital, revenue and deferred for correct presentation in the final accounts of any company.	1,3,6	An
CO - 7	understand the facts related to consignment and joint venture with normal and abnormal losses.	1.2.3	Un
CO - 8	evaluate the process of royalties with minimum rent, short workings and sub lease.	2,4,5	Ev



**SEMESTER –II****Part III Core IV Principles of Marketing****Code:18UCOC22****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to:	PSO addressed	CL
CO – 1	understand the nature, importance and classification of markets.	1,2	Un
CO – 2	understand the functions of marketing and marketing mix.	1,2	Un
CO – 3	evaluate the life cycle of products.	1,2,3,5	Ev
CO - 4	know the importance of sales promotion, advertising and qualities of successful salesmen.	2,3,4	Ap
CO - 5	understand about the product line and product life cycle through modification.	1,4	Ap
CO - 6	demonstrate the importance of branding and packaging.	2,4,5	Ev
CO - 7	know the objectives and methods of pricing.	1,2,3	Un
CO - 8	analyse the pros and cons of the various channels of distribution.	4,5	Cr

**SEMESTER –II****Part III Allied III****Business Management****Code:18UCOA21****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	gain thorough knowledge about the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various functions in business.	1,2,3	Ap
CO – 3	know about principles of organization and its forms.	1,4	Ev
CO – 4	understand the motivational theories.	1,2,6	Ap
CO - 5	familiarise with the controlling and co-ordination techniques.	1,4	Ap
CO - 6	exhibit knowledge on importance of controlling and techniques of controlling.	2,4,5	Ev
CO - 7	analyse the importance of decision making in business.	1,2,3	Un
CO - 8	outline the methods of motivation.	4,5	Cr

**SEMESTER –II****Part III                      Allied IV                      Principles of Life Insurance****Code:18UCOA22****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	know the Indian Market System	1,2	Re
CO – 2	understand the Concept of Life Insurance	1,2	Un
CO – 3	effectively calculate premium and bonus for various kinds of policies	1,2,3	Ap
CO – 4	have an insight into the different types of life insurance plans	1,2,4	Ap
CO-5	acquire knowledge about LIC products, and its variations.	1,2,3	Ap
CO - 6	demonstrate knowledge on the different types of annuity plans, group insurance plans etc.	5,6	An
CO - 7	organisational structure at various level	1,8	Ev
CO - 8	take up Licentiate Examination with confidence	5,6,7	Cr

**SEMESTER –III****Part III    Core V    Advanced Financial Accounting****Code:18UCOC31****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO Addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic accounting issues.	1,2	Ap
CO – 2	gain knowledge regarding the maintenance of partnership accounts in case of admission.	1,2, 5	Ap
CO – 3	have practical knowledge regarding the maintenance of partnership accounts in case of retirement.	1,2, 5	Ap
CO - 4	understand the maintenance of partnership accounts in case of dissolution of a firm.	1,2, 5	Ap
CO – 5	know about the maintenance of accounts relating to branch accounts.	1,2,5	Un
CO – 6	understand the calculation of profit involved in sending goods at invoice price.	1,5,8	Ap
CO – 7	understand about the hire purchase system.	1,5,6	Ap
CO - 8	understand about installment system.	1,8	Ap



**SEMESTER –III****Part III Core-VII****E - Accounting****Code:18UCOC33****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO-1	develop the computerized knowledge in accounting	1,2,3	Un
CO-2	impart the students with the basic principles and concepts of computerized accounting	1,2	Un
CO-3	provide knowledge on the use and application of Tally	1,2	Ev
CO-4	learn about the concept of vouchers	2,4	Un
CO-5	create company in Tally	5,8	Ap
CO-6	create knowledge of inventory accounting	1,5,8	Ev
CO-7	create knowledge of budget control	1,4	An
CO-8	make use of cost category and cost centers in voucher	1,5	Ap

**SEMESTER –III****Part III Allied V Business Communication****Code:18UCOA31****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	gain knowledge on the basic concepts of business communication and help them to understand basic techniques of business.	1,2	Un
CO – 2	understand the basic principle of effective communication and barriers of communication.	1,2,3	Un
CO – 3	help the students write letters on enquiries, offers and quotations, orders and execution.	2,3,4	Ap
CO – 4	know about the collection letters and sales letters.	2,3,5	Ap
CO – 5	understand about bank correspondence.	3,4	Ap
CO – 6	understand about Insurance correspondence	3,4	Ap
CO – 7	know about the public grievance letters.	3,4,5	Ap
CO – 8	know about the letters to the editor and through email.	3,4,5	Ap

**SEMESTER –III****Part III Allied VI Customer Relationship Management****Code:18UCOA32****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of customer relationship management	2,3	Un
CO-2	know the emerging trends in CRM	2,4,6	Un
CO-3	analyze the customer relationship management issues and problems	2,3	An
CO-4	gain the knowledge about the e- CRM	1,2	Ev
CO-5	understand the customer relationship management process	1,2,3	An
CO-6	analyze the technology of integrating CRM with ERP	5,6	An
CO-7	integration of CRM with data warehouse	4,8	Ev
CO-8	learn the concept of Market Basket Analysis	3	Un

**SEMESTER –III**

<b>Part III</b>	<b>Core SB</b>	<b>Business Mathematics</b>	
<b>Code:18UCOS31</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic principles and techniques of mathematics.	1,2	Un
CO – 2	understand how quadratic equations are solved.	2,5	Ap
CO – 3	understand how simultaneous equations are solved with two or more variables.	2,5	Ap
CO – 4	understand indices	1,2	Ap
CO – 5	understand the theory of logarithms.	1,2	Ap
CO – 6	apply matrix rule.	1,2,4,5	Ap
CO – 7	understand how linear equations are solved using matrices.	2,5	Ap
CO – 8	understand calculation of interests (simple, compound), discounts both for cash and credit transactions. (trade, cash, true , banker's discount).	1,2,4,5	Ap



**SEMESTER –III****Part III Non Major Elective I Principles of Accountancy****Code:18UCON31****Hrs/Week: 2****Hrs/Sem: 30****Credits : 2****Course Outcome:**

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO – 1	have a fundamental knowledge on basic rules of Accounting.	1,2,5	Un
CO – 2	prepare the Trial balance.	1,2,3,8	Ap
CO – 3	prepare the various subsidiary books	1,2	Ap
CO – 4	prepare the Types of cashbook	2,8	Ap
CO – 5	prepare the petty cash book.	2,8	Ap
CO – 6	prepare the Trading account.	2,5	Ap
CO – 7	prepare the profit and loss account	2,5	Ap
CO – 8	prepare the balance sheet	2,5	Ap



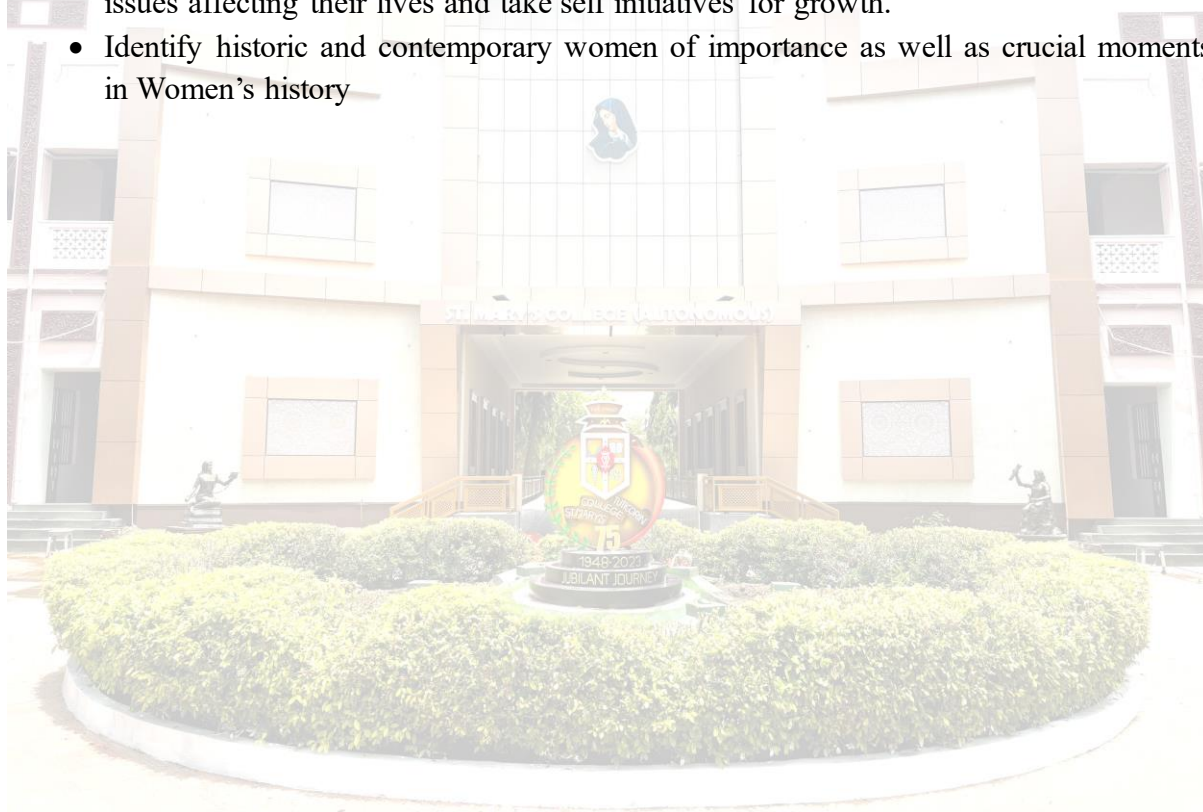
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER –IV****Part III      Core VIII      Corporate Accounting****Code:18UCOC41****Hrs/Week: 6****Hrs / Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand about the issue of shares.	1,2	Un
CO – 2	understand about the redemption of preference shares.	1,4,5	Ap
CO – 3	understand about the issue of shares and debentures.	5,8	Ap
CO – 4	understand the calculation of profit prior to incorporation.	2,5,8	Ap
CO – 5	Practice the maintenance of company final accounts as per revised accounting standards.	1,2	Ap
CO – 6	understand the accounting for amalgamation and external reconstruction.	2,5,8	Ap
CO – 7	analyse the various schemes for capital reduction.	2,5,8	Ap
CO – 8	evaluate the preparation of liquidator's financial statements.	2,5,8	Ap

**SEMESTER –IV****Part III      Core IX                      Company Law****Code:18UCOC42****Hrs/Week: 6****Hrs/ Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the various provisions of Companies Act 2013.	1,2	Un
CO – 2	know the provisions related to the formation of different types of companies.	1,2	Un
CO – 3	differentiate private and public companies.	2,3	An
CO – 4	understand the statutory requirements of Incorporation of a company like registration of memorandum, articles, issue of prospectus etc.	3,4	Un
CO – 5	know the difference between shares and debentures and the procedure for declaration and payment of dividend.	2,5	An
CO – 6	understand the role of administrative executives in a company and the procedure for conducting meetings.	1,5	Un
CO – 7	know the various requisites for conducting a valid meeting under the Companies Act , 2013.	2,5	Un
CO – 8	analyse the statutory procedure for the winding up of the company	2, 7	An



**SEMESTER –IV****Part III Core SB****Business Statistics****Code:18UCOS41****Hrs/Week: 4****Hrs/Sem: 60****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic concepts of statistics and statistical tools.	2,5	Un
CO – 2	understand how statistical tools are applied for doing the project work.	2,5	Un
CO – 3	know the measures of central tendency and apply to measure averages.	2,3	Ev
CO – 4	apply the tools on measures of dispersion that are useful for estimating variations.	2,4,5,8	Ap
CO – 5	evaluate whether there is correlation between two variables or not.	2,3	Ev
CO – 6	apply the various methods for calculating correlation coefficient.	2,4,5,8	Ap
CO – 7	apply regression analysis for estimating values for future period.	2,4,5,8	Ap
CO – 8	apply the various methods for calculating regression coefficient.	2,4,5,8	Ap

**Semester IV****Part III Non Major Elective II Introduction To Cost Accounting****Code:18UCON41****Hrs/Week: 2****Hrs/Sem 30****Credits : 2****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the objectives of cost accounting	1	Un
CO – 2	understand the functions of cost accounting	1	Un
CO – 3	understand the various classifications of cost	1	Un
CO – 4	understand the preparation of cost sheet.	1,2,8	Un,Ap
CO – 5	determine the elements of materials and its types	3,4	Re,Ap
CO – 6	know the various methods of remuneration.	1,8	An
CO – 7	understand the overhead absorption methods.	1,3	Un,Ap
CO – 8	understand overhead allocation and apportionment.	1,3	Un,Ap



**SEMESTER –V****Part III Core XII Income Tax Law & Practice I****Code:18UCOC52****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand and apply basic concept and provisions of the Income Tax Act 1961.	1,2,3	Un
CO – 2	understand the various exempted income and residential status.	2,5	Ap
CO – 3	understand and compute Salary income	4,5	Ap
CO – 4	understand and compute Income from House property.	2,5	Ap
CO – 5	compute Capital gains	5,8	Ap
CO – 6	compute Profits and gains	5,8	Ap
CO -7	compute Income from other sources.	5,8	Ap
CO -8	compute different heads of income.	2,5	Ap

**SEMESTER –V****Part III Core XIII****Business Law****Code:18UCOC53****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Vision:**

To expose students to various business laws.

**Mission:**

To enable students to have adequate knowledge on rules and regulations of commercial laws.

**Course Outcome:**

<b>Co.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the essentials and steps to enter into a contract.	1,2	Un
CO-2	familiarize with the terminology used in contract Act	1,4	Un
CO-3	know about the remedies of breach of contract.	1,2,3	An
CO-4	understand the contract of indemnity and its kinds.	1, 2,5	Un
CO-5	know the performance of Contract	1,4,5	Ap
CO-6	understand the contract of Contract of Guarantee	1,2,8	Un
CO-7	understand the types of bailment, rights and its duties.	1,4	Un
CO-8	know the rights of buyers and sellers, its conditions and warranties regarding Sale of Goods Act.	6,7	Ap



**SEMESTER –V****Part III Core Integral I Special Accounts****Code:18UCOI51****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course outcome:**

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	gain in-depth knowledge in corporate accounting	2,4,5	Un
CO-2	know the format of final accounts of Banking, Insurance and Holding companies	4,5	Ap
CO-3	prepare the accounts for public limited companies	1,2,5	Ev, Ap
CO-4	understand investment accounts, fixed interest securities and variable income securities.	5,8	An
CO-5	understand and prepare voyage accounts	5,8	Un
CO-6	know about statutory laws relating to banking companies accounts	1,3,8	Un, Ap
CO-7	know about statutory laws relating to insurance company accounts.	1,2,5	Un, Ap
CO-8	understand and prepare accounts of holding companies.	1,8	Un, Ap

SEMESTER –V			
Part III Core Integral II		Cost Accounting	
Code:18UCOI52	Hrs/Week: 5	Hrs/Sem: 75	Credits : 4

**Course Outcome :**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the objectives and functions of cost accounting	1,5	Un
CO – 2	understand the preparation of cost sheet.	1,5,8	Ap
CO – 3	determine the elements of material and the techniques of material control	4,5	Un,Ap
CO - 4	know the concepts of labour cost computation and control.	1,5,8	Un,Ap
CO – 5	understand the overhead allocation and apportionment.	1,5	Un,Ap
CO - 6	gain knowledge on absorption of overheads	1,7,8	Un,Ap
CO – 7	understand the techniques of Contract costing	5,8	Un,Ap
CO – 8	gain knowledge on the techniques of Process costing and prepare process accounts.	5,8	Un,Ap

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

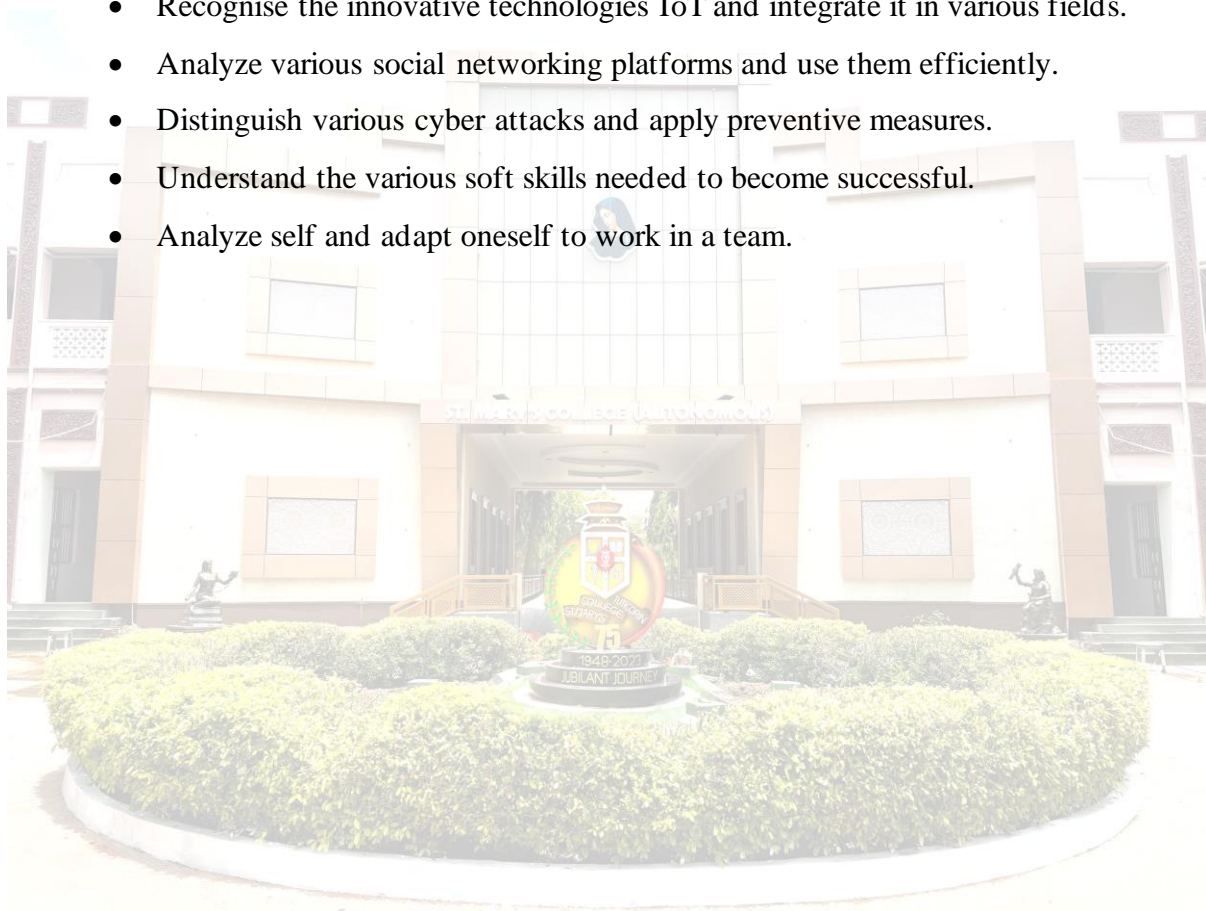
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



**SEMESTER –VI****Part III Core XIV Management Accounting****Code:18UCOC61****Hrs/Week: 6****Hrs/Sem : 90****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic concepts of management accounting and differentiate management accounting from financial accounting and cost accounting.	1,2	Un
CO – 2	understand the contexts where types of ratios can be applied for evaluating the performance and financial position of a firm.	2,5	Un,Ap
CO – 3	evaluate the performance of a firm using fund flow statement.	5,8	Ev,Ap
CO – 4	evaluate the performance of a firm using cash flow statement.	5,8	Ev,Ap
CO - 5	use marginal costing techniques for optimising cost and profit.	2,3,5	Un,Ap
CO - 6	understand the features and importance of budgets and budgetary control	1,5	Un,Ap
CO - 7	prepare various budgets	5,8	An,Ap
CO - 8	identify the significance of standard costing, budgeting and budgetary control in managerial decision making.	2,5	An,Ap



## SEMESTER –VI

### Part III Core XV Income Tax Law and Practice-II

**Code:18UCOC62**

**Hrs/Week: 6**

**Hrs/Sem: 90**

**Credits : 4**

#### Course outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply the concept of clubbing of income	1,2,3	Un
CO – 2	set off and carry forward losses	2,5	Ap
CO – 3	understand and apply deductions U/S 80 C to 80 U	2,5	Ap
CO -4	understand the various assessment procedures	5,8	Ap
CO -5	understand and compute advance tax and TDS	5,8	Ap
CO – 6	understand and apply the tax rate and deductions.	4,5	Ap
CO – 7	compute income of individuals and firms.	2,5	Ap
CO – 8	prepare Income Tax returns of individuals and firms	5,8	Ap



**SEMESTER –VI****Part III Core XVI Industrial Law****Code:18UCOC63****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the disputes of strike, lock out, retrenchment, lay off and compensation	1,2	Un
CO-2	know about the welfare, safety and health of workers.	2,5,8	Ap
CO-3	analyse Women and Factories Act	4,5,8	Ap
CO-4	understand the various act relating to payments.	5,8	Ap
CO-5	understand the rules regarding workmen's compensation.	2,5	Un
CO-6	know the Minimum Wages Act	1,3	An
CO-7	understand the Trade Union Act	1,4	Un
CO-8	know the rights and duties of Employee State Insurance Act.	7,8	Ev

**SEMESTER –VI****Part III Core Integral III Financial Services****Code:18UCOI61****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	know the framework of Financial Markets in India.	1,3	Un
CO-2	be familiar with the functions of Financial Services.	2,4	An
CO-3	gain knowledge on the avenues of financial services	3,6	Un
CO-4	be an expertise in various Financial markets and its Services	1,8	Ev
CO-5	understand the term Merchant Banking	1,8	Ap
CO-6	know Lease Financing	4,6	Un
CO-7	understand the activities and scope of venture capital and also the functions of credit rating	5,7	Ap
CO-8	understand Mutual Funds and its application	1,7	An

**SEMESTER –VI****Part IV Core Integral IV Investment Management****Code:18UCOI62****Hrs/Week: 7****Hrs/Sem: 105****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the sources of investments.	1,3	Un
CO-2	know of various level of risks.	2,4	An
CO-3	adapt with primary market procedures.	3,6	Un
CO-4	be familiarised with various stock exchanges and their functions.	1,8	Ev
CO-5	analyse the securities according to industry.	1,8	Ap
CO-6	analyse the securities technically.	4,6	Un
CO-7	apply the tools to understand the overall marketing.	5,7	Ap
CO-8	know the investment pattern.	1,7	An



**SEMESTER –I**

<b>Part III</b>	<b>Core I</b>	<b>Financial Accounting I</b>		
<b>Course Code: 21UCOC11</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>	

**Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand book keeping and accounting concepts and conventions as per Accounting Standards of India.	1,2,5	Un
CO – 2	prepare financial statements of sole traders accordance with generally accepted accounting principles.	1,2,5,8	Ap
CO – 3	understand and prepare bank reconciliation statement.	1,5	Ap
CO – 4	demonstrate and compare the various methods of providing depreciation.	2,4,5	Ev
CO – 5	apply appropriate judgment derived from knowledge of accounting theory in charging depreciation for various assets.	1,5	Ev
CO – 6	effectively demonstrate skills relating to rectification of errors.	2,4,5	Ap

## SEMESTER –I

<b>Part III                      Core II                      Business Organisation</b>			
<b>Course Code:21UCOC12</b>	<b>Hrs/Week: 5</b>	<b>Hrs/ Sem: 75</b>	<b>Credits : 4</b>

### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO – 1	understand the basic concepts and latest developments in the organisation of business.	1,3,4,6	Un
CO – 2	understand the basic forms of business organisation.	1,2,3	Un
CO – 3	know about the concepts of business ethics, business values and morals.	1,2,4	Un
CO – 4	appraise about MSME, recent changes in MSME sector, development of VSI under the plans, KVIC and its objectives .	1,6	Ev
CO – 5	know about the dominance of MNC in globalisation and globalisation of Indian business.	1,3,6	Un
CO – 6	analyse the pros and cons of globalisation in the business world and create new business models	4,5	An

SEMESTER –I			
<b>Part III</b>	<b>Allied I</b>	<b>Business Information System</b>	
<b>Course Code: 21UCOA11</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

**Course Outcomes :**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	gain thorough knowledge about the fundamentals of MS Word	2,4,5	Un
CO – 2	familiarise with the calculations made in excel sheets	1,2,4	Ap
CO – 3	exhibit skills in power point	1,3,5	Ap
CO – 4	design the documents with various formats and designs	1,3,4,5	Ap
CO – 5	analyse the importance of MS Office in business enterprises.	1,2,6	An
CO – 6	create the methods of forming MS Access	1,3,5	Cr



## SEMESTER I

### Part IV Professional English for Commerce and Management - I

<b>Course Code: 21UCOPE1</b>	<b>Hrs/Week: 2</b>	<b>Hrs/Sem: 30</b>	<b>Credits : 2</b>
------------------------------	--------------------	--------------------	--------------------

#### Course Outcomes :

CO No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO – 1	improve their competence in using the language.	1,5,8	Un
CO – 2	be proficient in reading.	1,5,8	Ap
CO – 3	develop content with Pictures/Hints	1,5,8	Ap
CO – 4	apply their writing skills in academic life	1,5,8	Ap
CO – 5	write without error of spelling or grammar	1,5,8	Ap
CO - 6	identify the difference between brainstorming and brainwriting	1,5,8	Un





## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

## SEMESTER –II

<b>Part III</b>	<b>Core III</b>	<b>Financial Accounting II</b>	
<b>Course Code: 21UCOC21</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>

### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	identify the nature of expenses as capital, revenue and deferred for correct presentation in the final accounts of any company.	1,2,4	Ap
CO – 2	prepare accounts of non-trading concerns and professionals and royalties	1,5,8	Ap
CO – 3	understand the concept related to consignment and joint venture with normal and abnormal losses	1,5	Un
CO – 4	prepare consignment and joint venture account	1,2	Ap
CO – 5	prepare the self-balancing accounts and sectional balancing accounts and its various adjustments	1,3,6	An
CO - 6	evaluate the process of computing royalties with minimum rent, short workings and sub lease	2,4,5	Ev

SEMESTER – II			
<b>Part III</b>	<b>Core-IV</b>	<b>Principles of Marketing</b>	
<b>Course Code:21UCOC22</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>

**Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the nature, importance and classification of markets.	1,2	Un
CO – 2	understand the functions of marketing and marketing mix.	1,2	Un
CO – 3	evaluate the role of wholesalers and retailers.	1,2,3,5	Ev
CO – 4	evaluate the importance of sales promotion and qualities of successful salesmen.	2,3,4	Ev
CO – 5	understand about the product planning, development and product life cycle through modification.	1,4	Un
CO – 6	analyse the pros and cons of the various channels of distribution.	4,5	An

## SEMESTER II

<b>Part III</b>	<b>Allied II</b>	<b>Business Management</b>	
<b>Course Code: 21UCOA21</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various concepts in business.	1,2,3	Ap
CO – 3	assess the principles of direction and its importance.	1,4	Ev
CO – 4	familiarise with the controlling and co-ordination techniques.	1,4	An
CO - 5	analyse the importance of decision making in business.	1,2,3	An
CO - 6	exhibit knowledge and skills relevant to principles of direction	2,4,5	Ap





## SEMESTER II

### Part IV Professional English for Commerce and Management - II

Course Code: 21UCOPE2

Hrs/Week: 2

Hrs/Sem: 30

Credits : 2

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the role of internet in business	1,5,8	Un
CO – 2	examine the different modes of online communication	1,5,8	An
CO – 3	draft letters pertaining to business activities	1,5,8	Ap
CO – 4	demonstrate in dignified self presentation	1,5,8	Ap
CO – 5	evaluate the difference between public speaking and talking	1,5,8	Ev
CO -6	use language for speaking with confidence in an intelligible and acceptable manner	1,5,8	Ev



**SEMESTER –III****Part III Core V****Advanced Financial Accounting****Course Code: 21UCOC31****Hrs/Week: 6****Hrs/ Sem: 90****Credits : 4****Course Outcomes:**

<b>CO. No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	prepare partnership accounts in case of admission.	1,2, 5	Ap
CO – 2	have practical knowledge regarding the maintenance of partnership accounts in case of retirement and death of a partner.	1,2,5	Ap
CO – 3	work on partnership accounts in case of dissolution of a firm.	1,2,5	Ap
CO - 4	know about the maintenance of accounts relating to branch accounts and departmental accounts.	1,2,5	Un
CO – 5	calculate profits involved in sending goods at invoice price.	1,5,8	Ap
CO – 6	have working knowledge on the accounts prepared under hire purchase system.	1,5,6	Ap

**SEMESTER –III****Part III Allied****Business Mathematics****Course Code: 21UCOA31****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the theory of indices	6,8	Un
CO – 2	use formulae, logarithms and mathematical expressions problems in equations	2,4	Ap
CO – 3	evaluate the methods of interest account and their basic applications in practice	1,5	Ev
CO – 4	analyse the mathematical skills required in mathematically intensive areas of business	4,7	An
CO – 5	measure the matrix rule	2,3	Ev
CO – 6	appraise the acquired knowledge and skills with practical problems in business mathematics	3,5	An



### SEMESTER –III

<b>Part III</b>	<b>Core SB</b>	<b>E – Accounting</b>	
<b>Course Code: 21UCOS31</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	develop the computerized knowledge in accounting	1,2,3	Un
CO-2	impart the basic principles and concepts of computerized accounting	1,2	Un
CO-3	assess on the use and application of Tally	1,2	Ev
CO-4	describe about the concept of vouchers	2,4	Un
CO-5	prepare inventory accounting and prepare final accounts	1,5,8	Ap
CO-6	make use of cost category and cost centers in voucher	1,5	Ap





### SEMESTER –III

#### Part III Non Major Elective Principles of Accountancy

Course Code: 21UCON31

Hrs/Week: 2

Hrs/Sem: 30

Credits : 2

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO Addressed	Cognitive Level
CO – 1	have a fundamental knowledge on basic rules of Accounting.	1,2,5	Un
CO – 2	prepare the Trial balance.	1,2,3,8	Ap
CO – 3	prepare the journal	1,2	Ap
CO – 4	prepare the ledger	2,8	Ap
CO – 5	prepare the subsidiary books	2,8	Ap
CO – 6	prepare Trading, Profit and Loss account and Balance Sheet	2,5	Ap



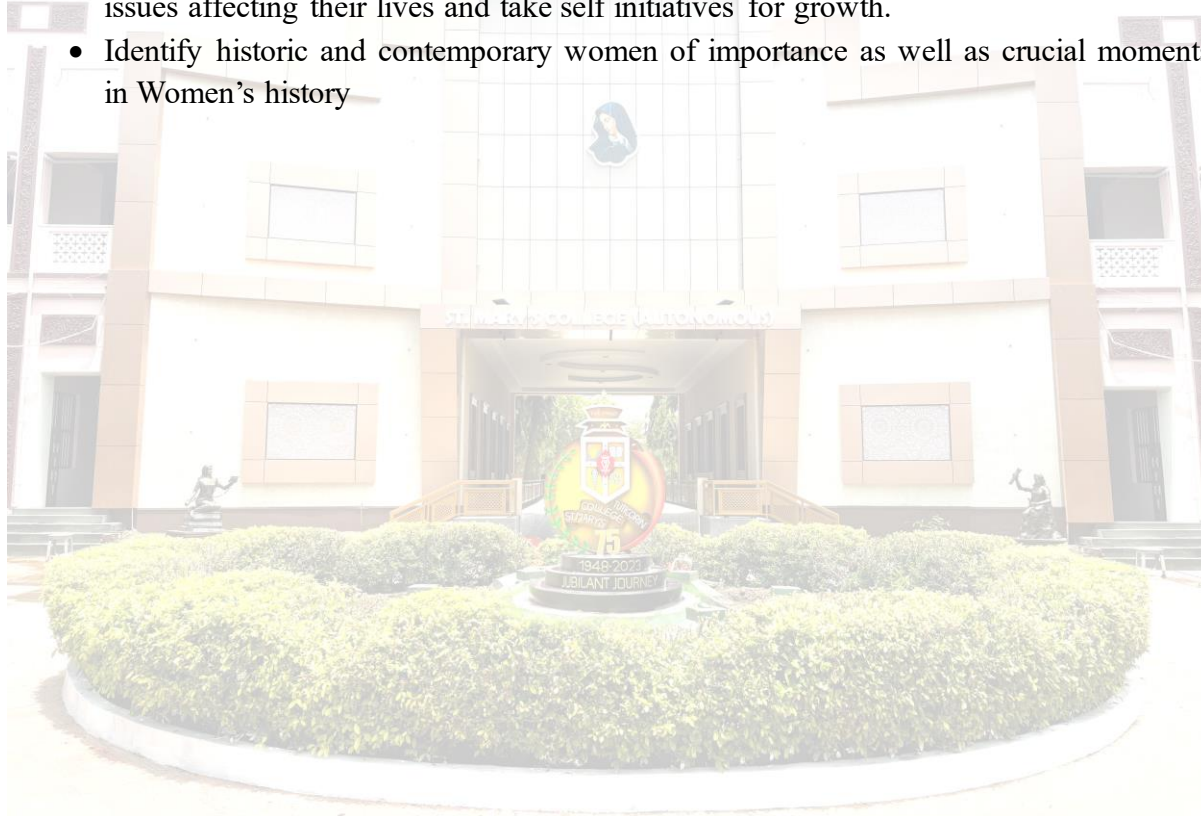
### Semester – III

#### Women's Synergy

Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER –IV****Part III Core VI****Corporate Accounting****Course Code: 21UCOC41****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

CO.No.	On completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the procedures on issue of shares.	1,2	Un
CO – 2	have working knowledge on redemption of preference shares and debentures.	1,4, 5	Ap
CO – 3	calculate profit prior to incorporation.	2,5, 8	Ap
CO - 4	have practical knowledge on the accounting for amalgamation and external reconstruction.	2,5,8	Ap
CO – 5	analyse the various schemes for capital reduction.	2,5,8	An
CO – 6	apply the procedures for the preparation of liquidator's financial statements.	2,5,8	Ap

SEMESTER –IV			
Part III	Allied	Business Statistics	
Course Code 21UCOA41	Hrs/Week: 5	Hrs/Sem: 75	Credits : 5

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the basic concepts of statistics and statistical tools.	6,8	Un
CO – 2	know the measures of central tendency and assess statistical averages.	2,4	An
CO – 3	test the tools on measures of dispersion that are useful for estimating variations.	3,7	Ev
CO – 4	evaluate whether there is correlation between two variables or not and relate regression for values with period.	1,5	Ev
CO – 5	apply the statistical tools for doing the project work.	1,6	Ap
CO – 6	appraise acquired knowledge and skills with practical problems in business statistics	5,8	An





**SEMESTER-IV****Part III      Core Skill Based      Company Law****Course Code: 21UCOC41****Hrs/Week:4****Hrs/Sem:60****Credits:4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	discuss the provisions related to the formation of different types of companies.	1,2	Un
CO-2	understand the statutory requirements of Incorporation of a company like registration of memorandum, articles, issue of prospectus etc.	3,4	Un
CO-3	analyse the difference between shares and debentures and the procedure for declaration and payment of dividend.	2,5	An
CO-4	understand the role of administrative executives in a company and the procedure for conducting meetings.	1,5	Un
CO-5	know the various requisites for conducting a valid meeting under the Companies Act,2013.	2,5	Un
CO-6	analyze the statutory procedure for the winding up of the company	2,7	An

## SEMESTER –IV

### Part III Non Major Elective E-Banking

**Course Code: 21UCON41**

**Hrs/Week: 2**

**Hrs/Sem.: 30**

**Credits : 2**

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO Addressed	Cognitive Level
CO – 1	have a fundamental knowledge about banking system	1,2,5	Un
CO – 2	fill the forms used in banks	1,2,3,8	Ap
CO – 3	gain fundamental idea about e-banking	1,2	Un
CO – 4	use ATM, PoS and CDM	2,8	Ap
CO – 5	understand about Internet Banking	2,8	Un
CO – 6	describe about Mobile Banking	2,5	Un



**SEMESTER –V****Part III Core VIII Income Tax Law & Practice I****Course Code: 21UCOC51****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand and apply basic concept and provisions of the Income Tax Act 1961, exempted incomes and calculate Residential status.	1,2,3	Un
CO – 2	compute Salary income	4,5	Ap
CO – 3	compute Income from House property.	2,5	Ap
CO – 4	compute Profits and Gains	5,8	Ap
CO – 5	compute Capital Gains	5,8	Ap
CO – 6	compute Income from other sources.	5,8	Ap



SEMESTER–V			
Part III	Core X	Special Accounts	
Course Code: 21UCOC53	Hrs/Week:6	Hrs/Sem:75	Credits:4

**Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the format of final accounts of Banking Cost, Insurance Cost and Social Responsibility Accounting	4,5	Un
CO-2	prepare the accounts for investments	1,2,5	Ap
CO-3	understand investment accounts, fixed interest securities and variable income securities.	5,8	An
CO-4	prepare voyage accounts	2,5,8	Ap
CO-5	know the statutory provisions relating to banking companies accounts and Insurance company accounts.	1,3,8	Un
CO-6	understand and prepare accounts for Social Responsibility accounting	1,8	Ap





**SEMESTER –V****Part III Core Elective Cost Accounting****Course Code: 21UCOE51****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the objectives and functions of cost accounting and prepare cost sheet	1,5	Un
CO – 2	determine the elements of cost and the techniques of material control.	4,5	Ap
CO – 3	know the concepts of labour cost computation and control	1,5,8	Ap
CO - 4	make overhead allocation, apportionment and absorption of overheads.	1,5	Ap
CO – 5	understand the techniques of Contract costing and prepare contract account.	5,8	Ap
CO - 6	gain knowledge on the techniques of Process costing and prepare process accounts.	5,8	Ap

### Semester - V

#### Common Skill Based Core

#### Computer for Digital Era and Soft Skills

Code : 21UCSB51

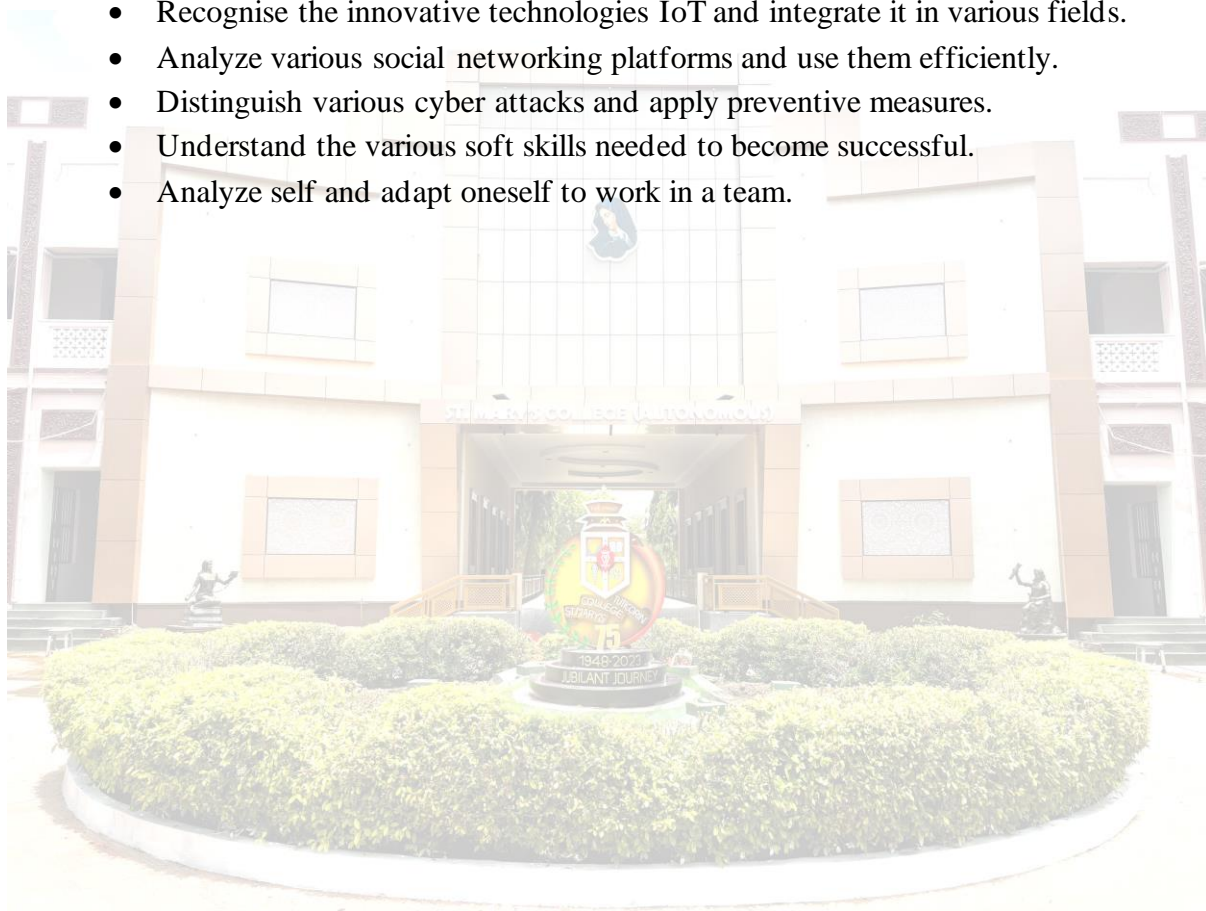
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



## SEMESTER –VI

### Part III Core XI Income Tax Law and Practice-II

<b>Course Code: 21UCOC61</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>
------------------------------	--------------------	--------------------	--------------------

#### Course outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply the concept of clubbing of income	1,2,3	Ap
CO – 2	set off and carry forward losses	2,5	Ap
CO – 3	understand and apply deductions U/S 80 C to 80 U	2,5	Ap
CO -4	understand the various assessment procedures	5,8	Un
CO -5	compute advance tax and TDS	5,8	Ap
CO – 6	compute income of individuals and firms and prepare the returns	2,5	Ap



**SEMESTER –VI****Part III Core XIII Management Accounting****Course Code: 21UCOC63****Hrs/Week: 6****Hrs/Sem : 90****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	discuss the basic concepts of management accounting and differentiate management accounting from financial accounting and cost accounting.	1,2	Un
CO – 2	examine the contexts where types of ratios can be applied for evaluating the performance and financial position of a firm.	2,5	Ap
CO – 3	evaluate the performance of a firm using funds flow statement and cash flow statement.	5,8	Ev
CO – 4	use marginal costing techniques for optimising cost and profit.	2,3,5	Ap
CO – 5	prepare different types of budgets	1,5	Ap
CO – 6	use the significance of standard costing, budgeting and budgetary control in managerial decision making.	2,5	Ap





## SEMESTER –VI

<b>Part III Core XV</b>		<b>Investment Management</b>	
<b>Course Code: 21UCOC65</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>

### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the sources of investments.	1,3	Un
CO-2	appraise various level of risks.	2,4	An
CO-3	discuss with primary market procedures.	3,6	Un
CO-4	assess the various stock exchanges and their functions.	1,8	Ev
CO-5	analyse the securities according to industry.	1,8	An
CO-6	apply the tools to understand the overall marketing.	5,7	Ap



**Programme: B.Com (Corporate)**

<b>SEMESTER –I</b>			
<b>Part III</b>	<b>Core I</b>	<b>Financial Accounting I</b>	
<b>Code:18UCOC11</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>

**Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand book keeping and accounting concepts, conventions and accounting information.	1,2,5	Un
CO – 2	prepare financial statements in accordance with generally accepted accounting principles.	1,2,5,8	Ap
CO – 3	employ critical thinking skills on the effects of different accounting methods on the financial statements.	1,2,4,5	Ap
CO – 4	understand about the preparation of bank reconciliation statement.	1,5	Ap
CO – 5	know about the differences between bill of exchange and promissory note.	1,5	Ap
CO - 6	demonstrate an understanding of the various methods of providing depreciation.	2,4,5	Ev
CO - 7	apply appropriate judgement derived from knowledge of accounting theory in charging depreciation for various assets.	1,5	Ap
CO - 8	effectively calculate the 'no profit/ no loss' date of settlement.	2,4,5	Ev

**SEMESTER –I****Part III Core II Business Organisation****Code:18UCOC12****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand the basic concepts of business organization and latest developments in the organization of business.	1,3,4,6	Un
CO – 2	understand the basic forms of business organization.	1,2,3	Un
CO – 3	know about the concepts of business ethics, business values and morals.	1,2,4	An
CO – 4	understand about village and small industry sector, development of VSI under the plans, KVIC and its objectives and MSME.	1,6	Ev
CO – 5	know about the dominance of MNC's globalization and globalization of Indian business.	1,3,6	An
CO - 6	demonstrate women entrepreneurship skills.	2,4,5	Ev
CO -7	gain knowledge on the promotional measures relating to KVIC.	1.2.3	Un
CO - 8	analyse the pros and cons of globalisation in the business world.	4,5	Cr

**SEMESTER –I****Part III Allied I Business Economics****Code:18UCOA11****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	know the various theories of Economics	1,2,3	Re
CO – 2	understand business economics and importance of business economics for managerial decision making.	1,2,4	Un
CO – 3	determine the position of firms using demand and supply conditions.	2,3	Ev
CO – 4	economies of large scale and small scale production.	1,6	Un
CO – 5	analyze Cost Effective Production techniques	5,6	An
CO - 6	determine pricing and costing strategies according to the nature of product and market conditions.	2,4	Ev
CO – 7	use economic theories related with supply and demand	2,7	Ap
CO - 8	make optimal business decisions to minimise cost and maximise profit	7,8	Cr



**SEMESTER –I****Part III Allied II Business Information System****Code:18UCOA12****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	gain thorough knowledge about the principles of management.	1,2,3	Un
CO – 2	understand nature of management and apply the various functions in business.	1,2,3	Ap
CO – 3	know about principles of organization and its forms.	1,4	Ev
CO – 4	understand the motivational theories.	1,2,6	Ap
CO – 5	familiarise with the controlling and co-ordination techniques.	1,4	Ap
CO – 6	exhibit knowledge on importance of controlling and techniques of controlling.	2,7	Ap
CO - 7	analyse the importance of decision making in business.	1,2,6	An
CO - 8	outline the methods of motivation.	7,8	Cr

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

#### **Unit I : Introduction**

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

#### **Unit II : Cultivation of Personal Values**

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

#### **Unit III : Elimination of Negative Emotions**

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

#### **Unit IV : Family Values**

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

#### **Unit V : Spiritual Value**

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER –II****Part III Core III****Financial Accounting II****Code:18UCOC21****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	know the difference between consignment and joint venture.	1,2,4	Ap
CO – 2	prepare various accounts namely accounts of non-trading concerns and professionals, royalties and single entry system.	1,5,8	Ap
CO – 3	understand about the self balancing system and sectional balancing system and its various adjustment accounts.	1,5	Ap
CO – 4	know about the loss of stock and loss of profit under insurance claims.	1,5	Ap
CO – 5	know about the preparation of balance sheet and income and expenditure account.	1,2	Ap
CO - 6	identify the nature of expenses as capital, revenue and deferred for correct presentation in the final accounts of any company.	1,3,6	An
CO - 7	understand the facts related to consignment and joint venture with normal and abnormal losses.	1.2.3	Un
CO - 8	evaluate the process of royalties with minimum rent, short workings and sub lease.	2,4,5	Ev

**SEMESTER –II****Part III          Core-IV          Principles of Marketing****Code:18UCOC22****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand the nature, importance and classification of markets.	1,2	Un
CO – 2	understand the functions of marketing and marketing mix.	1,2	Un
CO – 3	evaluate the life cycle of products.	1,2,3,5	Ev
CO - 4	know the importance of sales promotion, advertising and qualities of successful salesmen.	2,3,4	Ap
CO - 5	understand about the product line and product life cycle through modification.	1,4	Ap
CO - 6	demonstrate the importance of branding and packaging.	2,4,5	Ev
CO - 7	know the objectives and methods of pricing.	1,2,3	Un
CO - 8	analyse the pros and cons of the various channels of distribution.	4,5	Cr



**SEMESTER –II****Part III      Allied III                      Business Management****Code:18UCOA21****Hrs/Week: 3****Hrs/Sem: 45****Credits : 3****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	gain thorough knowledge about the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various functions in business.	1,2,3	Ap
CO – 3	know about principles of organization and its forms.	1,4	Ev
CO – 4	understand the motivational theories.	1,2,6	Ap
CO - 5	familiarise with the controlling and co-ordination techniques.	1,4	Ap
CO - 6	exhibit knowledge on importance of controlling and techniques of controlling.	2,4,5	Ev
CO - 7	analyse the importance of decision making in business.	1.2.3	Un
CO - 8	outline the methods of motivation.	4,5	Cr

**SEMESTER –III****Part III Core V Advanced Financial Accounting****Code:18UCOC31****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

CO.No.	On completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the basic accounting issues.	1,2	Ap
CO – 2	gain knowledge regarding the maintenance of partnership accounts in case of admission.	1,2, 5	Ap
CO – 3	have practical knowledge regarding the maintenance of partnership accounts in case of retirement.	1,2, 5	Ap
CO - 4	understand the maintenance of partnership accounts in case of dissolution of a firm.	1,2, 5	Ap
CO – 5	know about the maintenance of accounts relating to branch accounts.	1,2,5	Un
CO – 6	understand the calculation of profit involved in sending goods at invoice price.	1,5,8	Ap
CO – 7	understand about the hire purchase system.	1,5,6	Ap
CO - 8	understand about instalment system.	1,8	Ap

**SEMESTER –III****Part III Core-VI Corporate Law And Secretarial Practice-I****Code:18UCCC32****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concepts and principles of Company law	1,2	Ap
CO -2	understand the secretarial duties regarding the formation of company	1,2, 5	Ap
CO-3	gain knowledge through different documents in the company	1,2, 5	Ap
CO-4	familiarize with the doctrine of memorandum	1,2, 5	Ap
CO-5	develop the knowledge about shares, share certificate and warrant	1,2,5	Un
CO-6	state the relevant law, and discuss the secretarial duties	1,5,8	Ap
CO-7	discuss the Secretarial duties related to surrender and forfeiture of shares	1,5,6	Ap
CO-8	analyze different types of companies	1,8	Ap

### SEMESTER –III

**Part III      Core-VII**

**E - Accounting**

**Code:18UCOC33**

**Hrs/Week: 6**

**Hrs/Sem: 90**

**Credits : 4**

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO-1	develop the computerized knowledge in accounting	1,2,3	Un
CO-2	impart the students with the basic principles and concepts of computerized accounting	1,2	Un
CO-3	provide knowledge on the use and application of Tally	1,2	Ev
CO-4	learn about the concept of vouchers	2,4	Un
CO-5	create company in Tally	5,8	Ap
CO-6	create knowledge of inventory accounting	1,5,8	Ev
CO-7	create knowledge of budget control	1,4	An
CO-8	make use of cost category and cost centers in voucher	1,5	Ap





**SEMESTER –III****Part III Core SB Business Mathematics****Code:18UCOS31****Hrs/Week: 4****Hrs/Sem: 60****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the basic principles and techniques of mathematics.	1,2	Un
CO – 2	understand how quadratic equations are solved.	2,5	Ap
CO – 3	understand how simultaneous equations are solved with two or more variables.	2,5	Ap
CO – 4	understand indices	1,2	Ap
CO – 5	understand the theory of logarithms.	1,2	Ap
CO – 6	apply matrix rule.	1,2,4,5	Ap
CO – 7	understand how linear equations are solved using matrices.	2,5	Ap
CO – 8	understand calculation of interests (simple, compound), discounts both for cash and credit transactions. (trade, cash, true , banker's discount).	1,2,4,5	Ap

**SEMESTER –III****Part III Non Major Elective I Principles of Accountancy****Code:18UCON31****Hrs/Week: 2****Hrs/Sem: 30****Credits : 2****Course Outcome:**

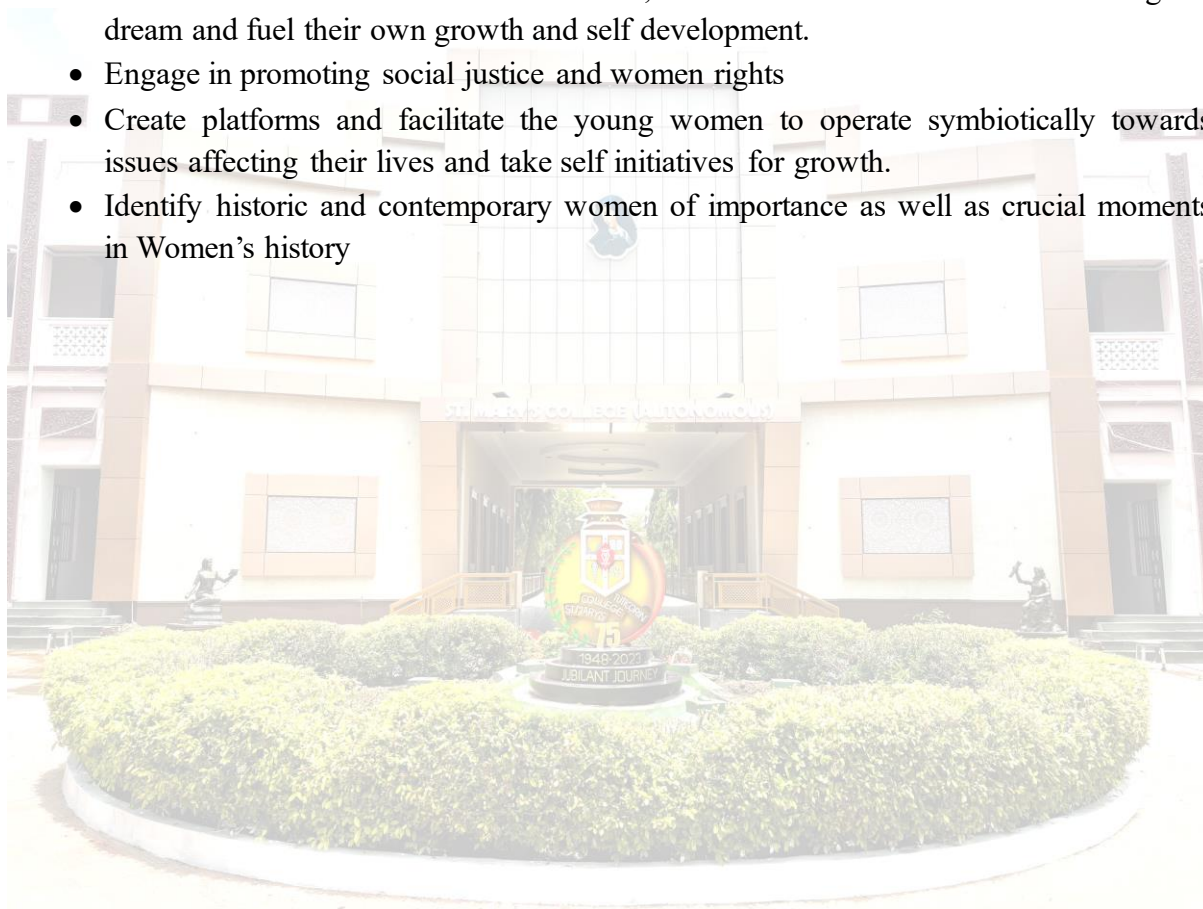
CO No.	Upon completion of this course, students will be able to:	PSO addressed	Cognitive Level
CO – 1	have a fundamental knowledge on basic rules of Accounting.	1,2,5	Un
CO – 2	prepare the Trial balance.	1,2,3,8	Ap
CO – 3	prepare the various subsidiary books	1,2	Ap
CO – 4	prepare the Types of cashbook	2,8	Ap
CO – 5	prepare the petty cash book.	2,8	Ap
CO – 6	prepare the Trading account.	2,5	Ap
CO – 7	prepare the profit and loss account	2,5	Ap
CO – 8	prepare the balance sheet	2,5	Ap



Semester – III			
Women's Synergy			
Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2

### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER –IV****Part III      Core VIII      Corporate Accounting****Code:18UCOC41****Hrs/Week: 6****Hrs / Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand about the issue of shares.	1,2	Un
CO – 2	understand about the redemption of preference shares.	1,4,5	Ap
CO – 3	understand about the issue of shares and debentures.	5,8	Ap
CO – 4	understand the calculation of profit prior to incorporation.	2,5,8	Ap
CO – 5	Practice the maintenance of company final accounts as per revised accounting standards.	1,2	Ap
CO – 6	understand the accounting for amalgamation and external reconstruction.	2,5,8	Ap
CO – 7	analyse the various schemes for capital reduction.	2,5,8	Ap
CO – 8	evaluate the preparation of liquidator's financial statements.	2,5,8	Ap



**SEMESTER –IV****Part III Core IX Corporate Law and Secretarial Practice - II****Code:18UCCC42****Hrs/Week: 5****Hrs/ Sem: 75****Credits : 4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	gain knowledge about the borrowing power of the company.	1,2	Un
CO-2	understand the concept of mortgages and debentures.	1,4,5	Ap
CO-3	demonstrate the secretarial duties in connection with resolution, agenda and minutes	2,5,8	Ap
CO-4	evaluate the importance, function of secretary along with the qualification, rights and duties.	2,5,8	Ap
CO-5	analyse the various modes of winding up of company.	1,2	Ap
CO-6	know the secretarial duties connected with reports and meetings.	2,5,8	Ap
CO-7	gain knowledge about the powers, rights and duties of company directors.	2,5,8	Ap
CO-8	understand the scope of secretarial work.	2,5,8	Ap

**SEMESTER –IV****Part III Core SB****Business Statistics****Code:18UCOS41****Hrs/Week: 4****Hrs/Sem: 60****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic concepts of statistics and statistical tools.	2,5	Un
CO – 2	understand how statistical tools are applied for doing the project work.	2,5	Un
CO – 3	know the measures of central tendency and apply to measure averages.	2,3	Ev
CO – 4	apply the tools (measures of dispersion) that are useful for estimating variations.	2,4,5,8	Ap
CO – 5	evaluate whether there is correlation between two variables or not.	2,3	Ev
CO – 6	apply the various methods for calculating correlation coefficient.	2,4,5,8	Ap
CO – 7	apply regression analysis for estimating values for future period.	2,4,5,8	Ap
CO – 8	apply the various methods for calculating regression coefficient.	2,4,5,8	Ap

**Semester IV**

**Part III Non Major Elective II Introduction To Cost Accounting**

<b>Code:18UCON41</b>	<b>Hrs/Week: 2</b>	<b>Hrs/Sem 30</b>	<b>Credits : 2</b>
----------------------	--------------------	-------------------	--------------------

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the objectives of cost accounting	1	Un
CO – 2	understand the functions of cost accounting	1	Un
CO – 3	understand the various classifications of cost	1	Un
CO – 4	understand the preparation of cost sheet.	1,2,8	Un,Ap
CO – 5	determine the elements of material and its types	3,4	Re,Ap
CO – 6	know the various methods of remuneration.	1,8	An
CO – 7	understand the overhead absorption methods.	1,3	Un,Ap
CO – 8	understand overhead allocation and apportionment.	1,3	Un,Ap

**SEMESTER –V****Part III Core XII Income Tax Law & Practice I****Code:18UCOC52****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand and apply basic concept and provisions of the Income Tax Act 1961.	1,2,3	Un
CO – 2	understand the various exempted income and residential status.	2,5	Ap
CO – 3	understand and compute Salary income	4,5	Ap
CO – 4	understand and compute Income from House property.	2,5	Ap
CO – 5	compute Capital gains	5,8	Ap
CO – 6	compute Profits and gains	5,8	Ap
CO -7	compute Income from other sources.	5,8	Ap
CO -8	compute different heads of income.	2,5	Ap



## SEMESTER –V

**Part III Core XIII**

**Business Law**

**Code:18UCOC53**

**Hrs/Week: 6**

**Hrs/Sem: 90**

**Credits : 4**

### Course Outcome:

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the essentials, classification and steps to enter into a contract.	1,2	Un
CO-2	familiarize with the terminology used in contract Act	1,4	Un
CO-3	know about the remedies of breach of contract.	1,2,3	An
CO-4	understand the contract of indemnity and its kinds.	1, 2,5	Un
CO-5	know the performance of Contract	1,4,5	Ap
CO-6	understand the contract of Contract of Guarantee	1,2,8	Un
CO- 7	understand the types of bailment, rights and its duties.	1,4	Un
CO-8	know the rights of buyers and sellers, its conditions and warranties regarding Sale of Goods Act.	6,7	Ap



**SEMESTER –V****Part III Core Integral I Corporate Governance****Code:18UCCI51****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the corporate social responsibility.	1,2	Un
CO – 2	understand the legal framework.	1,2	Un
CO – 3	know about the auditing and social accounting.	1,2,3	Un
CO - 4	understand the corporate legislation.	2,5	Un
CO – 5	understand the contribution of NGO.	2,5	Un
CO – 6	understand the powers and responsibilities of corporate board.	2,5	Un
CO – 7	understand the schemes of government.	4,5	Un
CO - 8	know about stakeholders responsibilities.	1,4,5	An

**SEMESTER –V****Part III Core Integral II Cost Accounting****Code:18UCOI52****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the objectives and functions of cost accounting	1,5	Un
CO – 2	understand the preparation of cost sheet.	1,5,8	Ap
CO – 3	determine the elements of material and the techniques of material control	4,5	Un,Ap
CO - 4	know the concepts of labour cost computation and control.	1,5,8	Un,Ap
CO – 5	Understand the overhead allocation and apportionment.	1,5	Un,Ap
CO - 6	gain knowledge on absorption of overheads	1,7,8	Un,Ap
CO – 7	understand the techniques of Contract costing	5,8	Un,Ap
CO – 8	gain knowledge on the techniques of Process costing and prepare process accounts.	5,8	Un,Ap

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

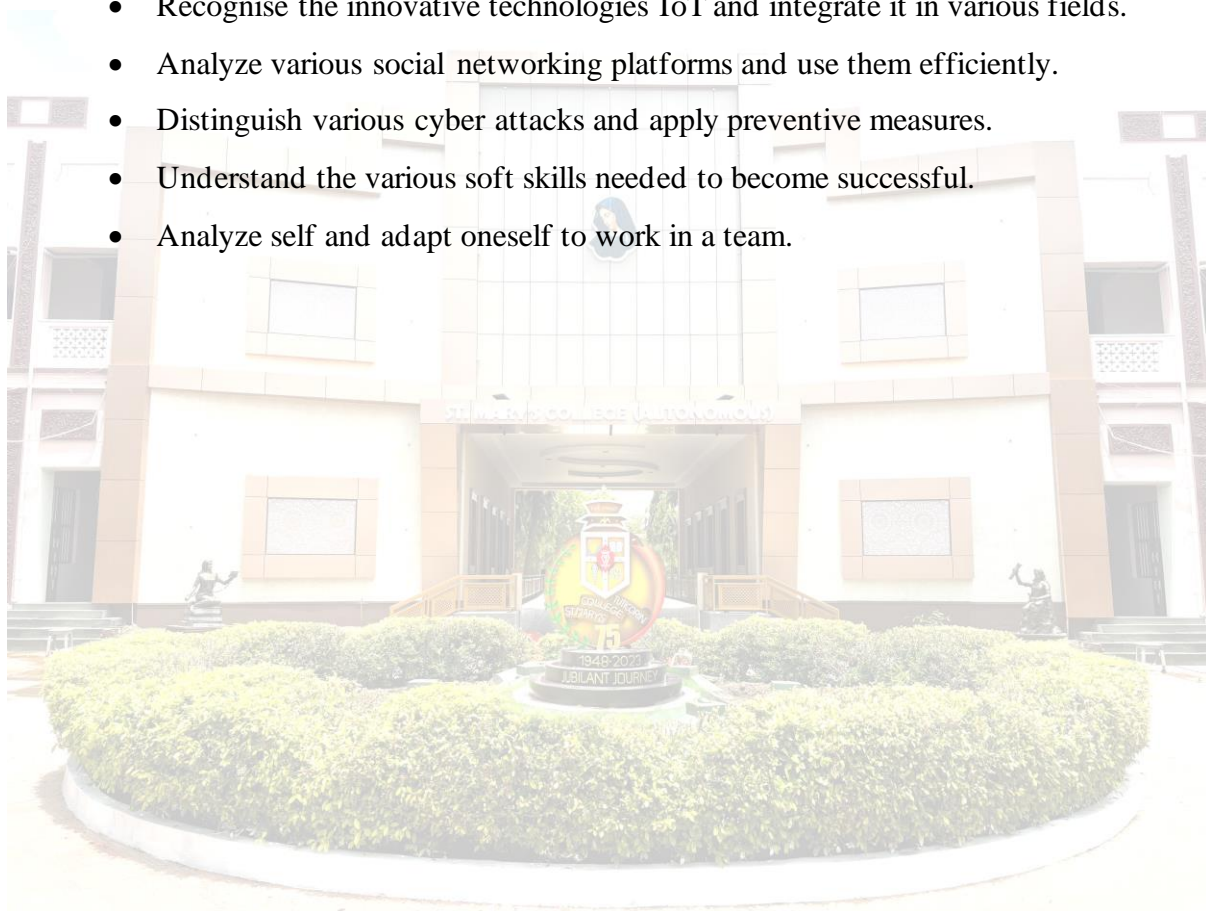
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.





**SEMESTER –VI****Part III Core XIV Management Accounting****Code:18UCOC61****Hrs/Week: 6****Hrs/Sem : 90****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic concepts of management accounting and differentiate management accounting from financial accounting and cost accounting.	1,2	Un
CO – 2	understand the contexts where types of ratios can be applied for evaluating the performance and financial position of a firm.	2,5	Un,Ap
CO – 3	evaluate the performance of a firm using fund flow statement.	5,8	Ev,Ap
CO – 4	evaluate the performance of a firm using cash flow statement.	5,8	Ev,Ap
CO - 5	use marginal costing techniques for optimising cost and profit.	2,3,5	Un,Ap
CO - 6	understand the features and importance of budgets and budgetary control	1,5	Un,Ap
CO - 7	prepare various budgets	5,8	An,Ap
CO - 8	identify the significance of standard costing, budgeting and budgetary control in managerial decision making.	2,5	An,Ap

## SEMESTER –VI

### Part III Core XV Income Tax Law and Practice-II

**Code:18UCOC62**

**Hrs/Week: 6**

**Hrs/Sem: 90**

**Credits : 4**

#### Course outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply the concept of clubbing of income	1,2,3	Un
CO – 2	set off and carry forward losses	2,5	Ap
CO – 3	understand and apply deductions U/S 80 C to 80 U	2,5	Ap
CO -4	understand the various assessment procedures	5,8	Ap
CO -5	understand and compute advance tax and TDS	5,8	Ap
CO – 6	understand and apply the tax rate and deductions.	4,5	Ap
CO – 7	compute income of individuals and firms.	2,5	Ap
CO – 8	prepare Income Tax returns of individuals and firms	5,8	Ap



## SEMESTER –VI

### Part III Core XVI Industrial Law

<b>Code:18UCOC63</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>
----------------------	--------------------	--------------------	--------------------

#### Course outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the disputes of strike, lock out, retrenchment, lay off and compensation	1,2	Un
CO-2	know about the welfare safety and health of workers.	2,5,8	Ap
CO-3	analyse Women and Factories Act	4,5,8	Ap
CO-4	understand the various act relating to payments.	5,8	Ap
CO-5	understand the rules regarding workmen's compensation.	2,5	Un
CO-6	know the Minimum Wages Act	1,3	An
CO-7	understand the Trade Union Act	1,4	Un
CO-8	know the rights and duties of Employee State Insurance Act.	7,8	Ev



**SEMESTER –VI****Part III Core Integral III Securities Law and Financial Markets****Code:18UCCI61****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

<b>CO.No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	know the various theories of security law and types of financial market.	1,2	Un
CO-2	enhance their analytical skills through extensive and in-depth discussion of the financial markets.	2,5,8	An
CO-3	demonstrate in-depth knowledge of the legal rules on mutual fund and shares.	2,5,8	Ap
CO-4	display a thorough understanding of the various Financial Markets Act.	4,5,8	Un
CO-5	analyse to what extent a financial market satisfies the conditions of an efficient market.	5,8	An
CO-6	possess the ability to discuss and write about the theory of financial markets.	5,8	Un
CO-7	know the various risks involved in trading derivative instruments.	2,5	Un
CO-8	understand the roles and power of SEBI.	2,5	Un



## SEMESTER –VI

### Part IV Core Integral IV Investment Management

<b>Code:18UCOI62</b>	<b>Hrs/Week: 7</b>	<b>Hrs/Sem: 105</b>	<b>Credits : 4</b>
----------------------	--------------------	---------------------	--------------------

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the sources of investments.	1,3	Un
CO-2	know of various level of risks.	2,4	An
CO-3	adapt with primary market procedures.	3,6	Un
CO-4	be familiarised with various stock exchanges and their functions.	1,8	Ev
CO-5	analyse the securities according to industry.	1,8	Ap
CO-6	analyse the securities technically.	4,6	Un
CO-7	apply the tools to understand the overall marketing.	5,7	Ap
CO-8	know the investment pattern.	1,7	An



SEMESTER –I			
Part III	Core I	Financial Accounting I	
Course Code: 21UCOC11	Hrs/Week: 5	Hrs/Sem: 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	understand book keeping and accounting concepts and conventions as per Accounting Standards of India.	1,2,5	Un
CO – 2	prepare financial statements of sole traders in accordance with generally accepted accounting principles.	1,2,5,8	Ap
CO – 3	understand and prepare bank reconciliation statement.	1,5	Ap
CO - 4	demonstrate and compare the various methods of Providing depreciation.	2,4,5	Ev
CO - 5	apply appropriate judgment derived from knowledge of accounting theory in charging depreciation for various assets.	1,5	Ev
CO - 6	effectively demonstrate skills relating to Rectification of errors.	2,4,5	AP

SEMESTER –I			
Part III	Core II	Corporate Culture and Practices	
Course Code:21UCCC12	Hrs/Week: 5	Hrs/ Sem: 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	study the value in shaping Corporate Culture	1,2	Un
CO-2	impart with the knowledge of cultural variables, mission & vision	2,3	Un
CO-3	develop the operational values and vision to the students	2,4	Un
CO-4	learn the socio cultural factors that influence corporate culture	5,8	Ev
CO-5	familiarize the students on different models of corporate culture	1,5,7	Un
CO-6	provide knowledge on the growth of corporate culture	1,5	Ap

## SEMESTER –I

<b>Part III</b>	<b>Allied I</b>	<b>Business Information System</b>		
<b>Course Code: 21UCOA11</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>	

### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	gain thorough knowledge about the fundamentals of MS Word	2,4,5	Un
CO – 2	familiarise the calculations made in excel sheets	1,2,4	Ap
CO – 3	present skills with power point	1,3,5	Ap
CO – 4	design the documents with various formats and designs	1,3,4,5	Ap
CO – 5	analyse the importance of MS Office in business enterprises.	1,2,6	An
CO – 6	create the methods of forming MS Access	1,3,5	Cr





## SEMESTER I

### Part IV Professional English for Commerce and Management - I

<b>Course Code: 21UCOPE1</b>	<b>Hrs/Week: 2</b>	<b>Hrs/Sem: 30</b>	<b>Credits : 2</b>
------------------------------	--------------------	--------------------	--------------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO – 1	improve their competence in using the language.	1,5,8	Un
CO – 2	be proficient in reading.	1,5,8	Ap
CO – 3	develop content with Pictures/Hints	1,5,8	Ap
CO – 4	apply their writing skills in academic life	1,5,8	Ap
CO – 5	write without error of spelling or grammar	1,5,8	Ap
CO - 6	identify the difference between brainstorming and brainwriting	1,5,8	Un



## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

**SEMESTER –II****Part III                      Core III                      Financial Accounting II****Course Code: 21UCOC21****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	identify the nature of expenses as capital, revenue and deferred for correct presentation in the final accounts of any company.	1,2,4	Ap
CO – 2	prepare accounts of non-trading concerns and professionals and royalties	1,5,8	Ap
CO – 3	understand the concept related to consignment and joint venture with normal and abnormal losses	1,5	Un
CO – 4	prepare consignment and joint venture account	1,2	Ap
CO - 5	prepare the self-balancing accounts and sectional balancing accounts and its various adjustments.	1,3,6	An
CO - 6	evaluate the process of computing royalties with minimum rent, short workings and sub lease.	2,4,5	Ev

SEMESTER – II			
Part III	Core-IV	Corporate Finance	
Course Code:21UCCC22	Hrs/Week: 5	Hrs/Sem: 75	Credits : 4

**Course Outcome :**

CO. No.	Upon completion of this Course Students will be able to	PSO's addressed	Cognitive Level
CO 1	understand the functions & Objectives of Corporate Finance	1,2	Un
CO 2	understand the need for Capitalization	2,3,4	Ap
CO 3	gain knowledge on the Capital Structure	2,3	Un
CO 4	study the different types of Cost of Capital	3,4,5	Un
CO 5	evaluate the determinants of Working Capital	3,4,5	Ev
CO 6	know about the different sources of Financial Markets	1,2	Ap





SEMESTER II			
Part III	Allied II	Business Management	
Course Code: 21UCOA21	Hrs/Week: 4	Hrs/Sem: 60	Credits : 4

**Course Outcome :**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the principles of Management.	1,2,3	Un
CO – 2	understand nature of management and apply the various concepts in business.	1,2,3	Ap
CO – 3	assess the principles of direction and its importance.	1,4	Ev
CO – 4	familiarise with the controlling and co-ordination techniques.	1,4	An
CO - 5	analyse the importance of decision making in business.	1,2,3	An
CO - 6	exhibit knowledge and skills relevant to principles of direction	2,4,5	Ap



## SEMESTER II

### Part IV Professional English for Commerce and Management - II

<b>Course Code: 21UCOPE2</b>	<b>Hrs/Week: 2</b>	<b>Hrs/Sem: 30</b>	<b>Credits : 2</b>
------------------------------	--------------------	--------------------	--------------------

#### Course Outcome :

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	understand the role of internet in business	1,5,8	Un
CO – 2	examine the different modes of online communication	1,5,8	An
CO – 3	draft letters pertaining to business activities	1,5,8	Ap
CO – 4	prepare PowerPoint presentations	1,5,8	Ap
CO -5	develop content with Pictures/Hints	1,5,8	Cr
CO -6	use language for speaking with confidence in an intelligible and acceptable manner	1,5,8	Ev



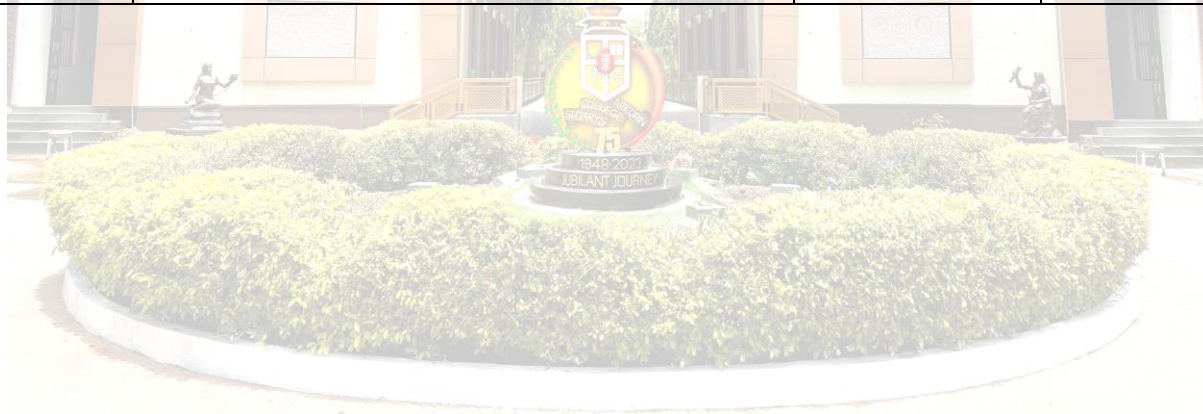
**SEMESTER –III****Part III Core V****Advanced Financial Accounting****Course Code: 21UCOC31****Hrs/Week: 6****Hrs/ Sem: 90****Credits : 4****Course Outcome :**

<b>CO. No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	prepare partnership accounts in case of admission.	1,2, 5	Ap
CO – 2	have practical knowledge regarding the maintenance of partnership accounts in case of retirement and death of a partner.	1,2,5	Ap
CO - 3	work on partnership accounts in case of dissolution of a firm.	1,2,5	Ap
CO – 4	know about the maintenance of accounts relating to branch accounts and departmental accounts.	1,2,5	Un
CO – 5	calculate profits involved in sending goods at invoice price.	1,5,8	Ap
CO – 6	have working knowledge on the accounts prepared under hire purchase system & Installment System	1,5,6	Ap

SEMESTER –III			
Part III Allied		Business Mathematics	
Course Code: 21UCOA31	Hrs/Week: 5	Hrs/Sem: 75	Credits : 4

**Course Outcome :**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the theory of indices	6,8	Un
CO – 2	use formulae, logarithms and mathematical expressions problems in equations	2,4	Ap
CO – 3	evaluate the methods of interest account and their basic applications in practice	1,5	Ev
CO – 4	analyse the mathematical skills required in mathematically intensive areas of business	4,7	An
CO – 5	measure the matrix rule	2,3	Ev
CO – 6	appraise the acquired knowledge and skills with practical problems in business mathematics	3,5	An





**SEMESTER III****Part III Core Skill Based Banking and Financial Services****Course Code: 21UCCS31****Hrs/Week :4****Hrs/Sem : 60****Credits : 4****Course Outcome**

<b>S. No.</b>	<b>Upon the completion of this course , students will be able to</b>	<b>PSO Addressed</b>	<b>CL</b>
CO 1	acquaint the recent trends in banking system	1,2,5	Ap
CO 2	discover the banking technologies	1,2,5	Ap
CO 3	discern on the categories in merchant banking	1,2,5	Un
CO 4	familiarize the credit rating activities	1,5,8	An
CO 5	gain knowledge on venture capitalizing	1,5,6	Ev
CO 6	perceive the role and structure of Financial system	1,2	An

### SEMESTER –III

#### Part III Non Major Elective Principles of Accountancy

**Course Code: 21UCON31**

**Hrs/Week: 2**

**Hrs/Sem: 30**

**Credits : 2**

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to:	PSO Addressed	Cognitive Level
CO – 1	have a fundamental knowledge on basic rules of Accounting.	1,2,5	Un
CO – 2	prepare the Trial balance.	1,2,3,8	Ap
CO – 3	prepare the journal	1,2	Ap
CO – 4	prepare the ledger	2,8	Ap
CO – 5	prepare the subsidiary books	2,8	Ap
CO – 6	prepare trading and profit and loss account and balance sheet	2,5	Ap



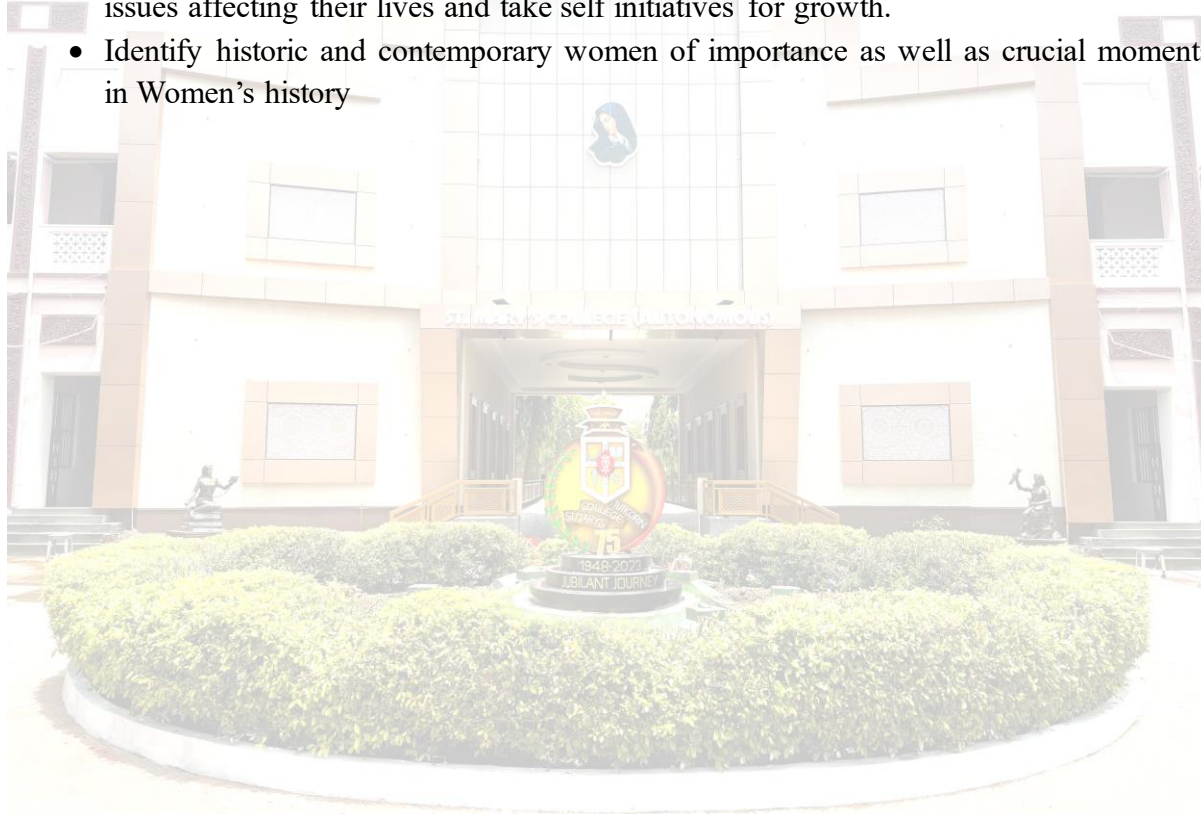
### Semester – III

#### Women's Synergy

Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER –IV****Part III      Core VIII      Corporate Accounting****Course Code: 21UCOC41****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>On completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the procedures on issue of shares.	1,2	Un
CO – 2	have working knowledge on redemption of preference shares and debentures	1,4, 5	Ap
CO - 3	calculate profit prior to incorporation.	2,5, 8	Ap
CO – 4	have practical knowledge on the accounting for amalgamation and external reconstruction.	2,5,8	Ap
CO – 5	analyse the various schemes for capital reduction.	2,5,8	An
CO - 6	apply the procedures for the preparation of liquidator's financial statements.	2,5,8	Ap



**SEMESTER –IV****Part III Allied Business Statistics****Course Code 21UCOA41****Hrs/Week: 5****Hrs/Sem: 75****Credits : 5****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the basic concepts of statistics and statistical tools.	6,8	Un
CO – 2	know the measures of central tendency and assess statistical averages.	2,4	An
CO – 3	test the tools on measures of dispersion that are useful for estimating variations.	3,7	Ev
CO – 4	evaluate whether there is correlation between two variables or not and relate regression for values with period.	1,5	Ev
CO – 5	apply the statistical tools for doing the project work.	1,6	Ap
CO – 6	appraise acquired knowledge and skills with practical problems in business statistics	5,8	An

**SEMESTER –IV****Part III Core Skill Based Corporate Law and Secretarial Practice****Course Code: 21UCCS41    Hrs/Week: 4    Hrs/Sem: 60    Credits : 4****Course Outcome:**

S. No.	Upon the completion of this course, the students will be able to	PSO addressed	CL
CO1	understand the concepts and principles of company law	1,2	Ap
CO2	understand the secretarial duties regarding the formation of company	1,2,5	Ap
CO3	gain knowledge through different documents in the company	1,2,5	Ap
CO4	familiarize the doctrine of memorandum	1,2,5	Ap
CO5	state the relevant law and discuss the secretarial duties	1,5,8	Ap
CO6	analyze different types of companies	1,8	Ap

**SEMESTER –IV****Part III Non Major Elective E-Banking****Course Code: 21UCON41****Hrs/Week: 2****Hrs/Sem.: 30****Credits : 2****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO Addressed</b>	<b>Cognitive Level</b>
CO – 1	have a fundamental knowledge about banking system	1,2,5	Un
CO – 2	fill the forms used in banks	1,2,3,8	Ap
CO – 3	gain fundamental idea about e-banking	1,2	Un
CO – 4	use ATM, PoS and CDM	2,8	Ap
CO – 5	understand about Internet Banking	2,8	Un
CO – 6	use Mobile Banking	2,5	Ap



## SEMESTER –V

### Part III    Core XI            Income Tax Law & Practice I

<b>Course Code: 21UCOC51</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>
------------------------------	--------------------	--------------------	--------------------

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and apply basic concept and provisions of the Income Tax Act 1961. Exempted income and calculate residential status.	1,2,3	Un
CO – 2	compute Salary income	4,5	Ap
CO – 3	compute Income from House property.	2,5	Ap
CO – 4	compute profits and gains	5,8	Ap
CO - 5	compute capital gains	5,8	Ap
CO -6	compute Income from other sources.	5,8	Ap





**SEMESTER -V****PART III      Core XIII      Business Law****Course Code: 21UCOC52   Hrs/Week:6   Hrs/Sem:90   Credits:4****Course Outcome:**

CO.No.	Upon Completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the terminology used in contract Act	1,4	Un
CO -2	analyse the remedies of Breach of contract	1,2,3	An
CO-3	describe the contract of Indemnity and its kinds	1,2,5	Un
CO-4	understand contract of Guarantee and Partnership Act	1,2,8	Un
CO-5	understand the types of Bailment, Rights and Duties of parties	1,4	Un
CO-6	analyse the rights of buyers and sellers, its conditions and warranties regarding Sale of Goods and IT Act.	6,7	An



## SEMESTER –V

### Part III      Core XIV                      Corporate Governance

<b>Course Code:21UCCC53</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits :4</b>
-----------------------------	--------------------	--------------------	-------------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the corporate social responsibility.	1,2	Un
CO – 2	understand the legal framework.	1,2	Un
CO – 3	know about the auditing and social accounting.	1,2,3	Un
CO – 4	understand the corporate legislation.	2,5	Un
CO – 5	understand the powers and responsibilities of corporate board.	2,5	Un
CO – 6	understand the schemes of government.	4,5	Un



### Semester - V

#### Common Skill Based Core

#### Computer for Digital Era and Soft Skills

Code : 21UCSB51

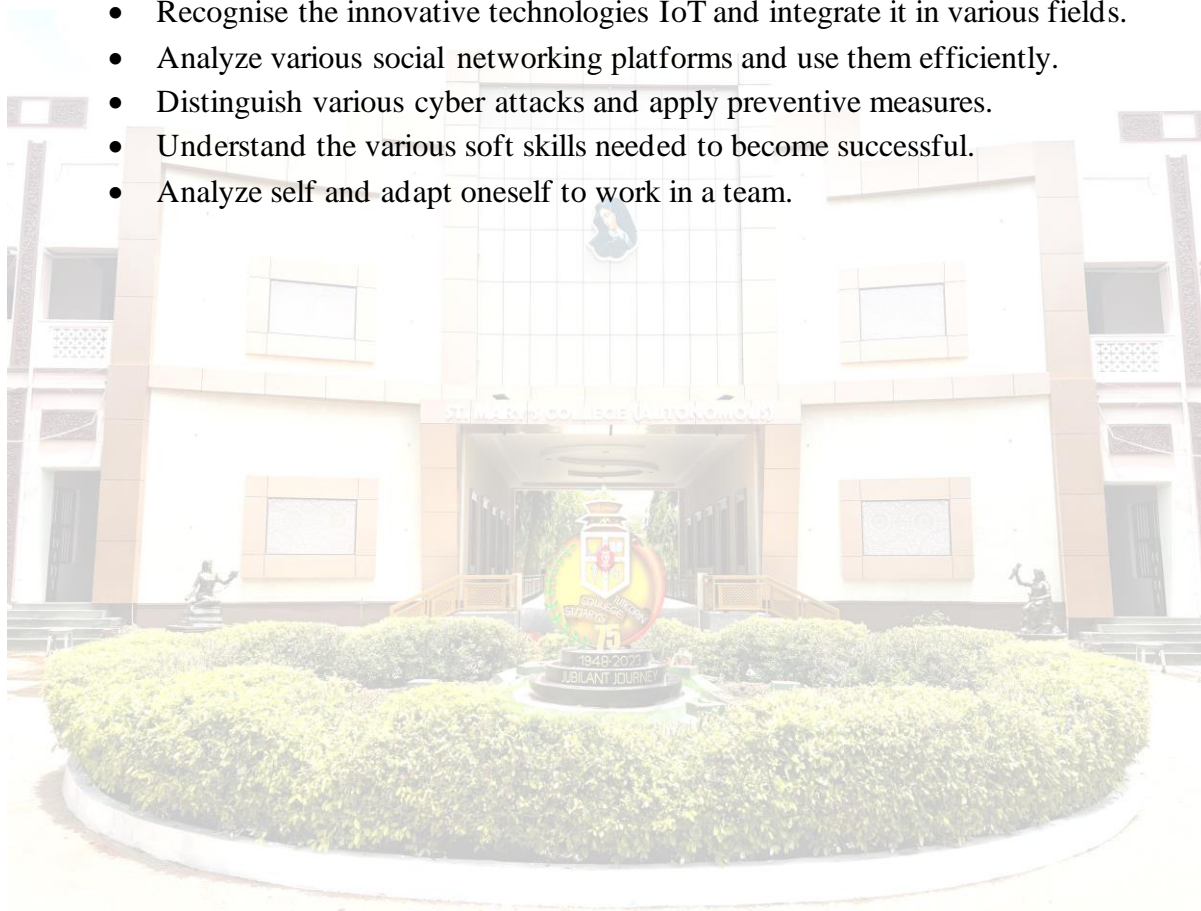
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



## SEMESTER VI

### Part III      Core XV                      Securities Law and Financial Markets

<b>Course Code:21UCCC61</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>
-----------------------------	--------------------	--------------------	--------------------

#### Course Outcome

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the various theories of security law and types of financial market.	1,2	Un
CO-2	demonstrate in-depth knowledge of the legal rules on mutual fund and shares.	2,5,8	Ap
CO-3	display a thorough understanding of the various Financial Markets Act.	4,5,8	Un
CO-4	analyse to what extent a financial market satisfies the conditions of an efficient market.	5,8	An
CO-5	know the various risks involved in trading derivative instruments.	2,5	Un
CO-6	understand the roles and power of SEBI.	2,5	Un



**SEMESTER -VI****PART III      Core XVI      Industrial Law****Course Code: 21UCOC62    Hrs/Week:6    Hrs/Sem:90    Credits:4****Course Outcome:**

Co. No.	Upon Completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the disputes of strike, lockout, retrenchment , lay off and compensation.	1,2	Un
CO -2	discuss about the Traditional and new Occupational Safety code of Workers.	2,5,8	Un
CO-3	identify the rules regarding workmen's compensation	2,5	Un
CO-4	examine the various act relating to minimum wages payments	5,8	Un,Ap
CO-5	analyse the Statutory Provisions for private sectors	1,3	An
CO-6	assess the rights and Duties of employees under trade union Act and Employment State Insurance Act.	7,8	Ev

**SEMESTER –VI****Part III Core XVII Management Accounting****Course Code: 21UCOC63****Hrs/Week: 6****Hrs/Sem : 90****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	discuss the basic concepts of management accounting and differentiate management accounting from financial accounting and cost accounting.	1,2	Un
CO – 2	examine the contexts where types of ratios can be applied for evaluating the performance and financial position of a firm.	2,5	Un,Ap
CO – 3	evaluate the performance of a firm using funds flow statement and cash flow statement	5,8	Ev
CO - 4	use marginal costing techniques for optimising cost and profit.	2,3,5	Un,Ap
CO - 5	apply and prepare the importance of budgetary control	1,5	Ap
CO - 6	use the significance of standard costing, budgeting and budgetary control in managerial decision making.	2,5	An,Ap

**SEMESTER –VI****Part III      Core XIX                      Investment Management****Course Code: 21UCOC65****Hrs / Week: 6****Hrs. / Sem.: 90****Credits : 4****Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	identify the sources of investments.	1,3	Un
CO-2	appraise various level of risks.	2,4	An
CO-3	discuss with primary market procedures.	3,6	Un
CO-4	assess the various stock exchanges and their functions.	1,8	Ev
CO-5	analyse the securities according to industry.	1,8	An
CO-6	apply the tools to understand the overall marketing.	5,7	Ap



**Programme: M.Com**

<b>SEMESTER –I</b>			
<b>Core I- Advanced Management Accounting</b>			
<b>Code: 19PCOC11</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the significance of financial statements.	1,7	Un
CO – 2	understand the techniques of financial statement analysis	1,7	Un
CO – 3	prepare fund flow statements using financial statements.	1,3	Ap
CO – 4	prepare cash flow statements using financial statements.	1,3	Ap
CO – 5	compare the financial performance of companies using common size, comparative statement and trend analysis.	1,4,6	Ev
CO – 6	compare the financial performance of companies using ratio analysis.	1,4,6	Ev
CO – 7	describe Responsibility accounting.	1,4,6	An
CO – 8	prepare and apply Management Information System	8	Ap



**SEMESTER –I****Core II Marketing Management****Code: 19PCOC12****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the prevailing modern marketing techniques.	1,3	Un
CO – 2	understand the significance of consumer behaviour and problems of Indian Consumers.	1,3	Un
CO – 3	understand the retailing strategies and retailing scene in India.	1,3,4	Ev
CO – 4	understand the important strategies for building Custome Relationship Management.	1,3,4	Ev
CO- 5	apply online marketing in various decision making techniques.	8	Ap
CO – 6	apply theories to avoid consumer exploitation.	8	Ap
CO – 7	understand how services can be marketed in an effective way.	1,2,4,6	Ev
CO - 8	understand and apply Marketing Research in business.	8	Ap

**SEMESTER –I****Core III - Statistics for Management**

<b>Code: 19PCOC13</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>
-----------------------	--------------------	--------------------	--------------------

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the importance of probability and theoretical distribution in statistical decision making.	1,3,4,7	Un
CO – 2	apply the sample statistics in Non parametric tests in management decision making.	1,3	Ap
CO – 3	apply analysis of variances for optimal decisions.	1,3,8	Ap
CO – 4	understand the different statistical quality control techniques like control charts.	4 ,7	Un
CO - 5	learn decision making principles under uncertainty.	3,7	Un
CO - 6	apply the sample statistics in parametrical tests in management decision making.	1,3	Ap
CO - 7	apply the Chi – Square test in statistical decisions.	1,3	Ap
CO - 8	analyse the various techniques of computing expected frequencies.	1,3,8	An

**Semester - I****Core V - Managerial Economics**

<b>Code:19PCOC15</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits : 4</b>
----------------------	--------------------	--------------------	--------------------

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO -1	understand the application of economic theories and concepts of business decision.	1,3,7	Un
CO -2	understand the objectives of business theories of profit and problems in profit measurement.	1,7	Un
CO -3	know about market structure and pricing decisions.	3	Ev
CO -4	know about price discrimination and its types	3	Ev
CO -5	understand the pre-requisites of capital budgeting,	2	An
CO -6	know about investment decisions under certainty and uncertainty.	3	Ev
CO -7	know about business cycles, phases of economic stabilization policies	3,7,8	Ev
CO -8	understand the fiscal and monetary policies and national income.	1,7	Un
CO -9	understand the economic stabilization policies	1,7	Un

## SEMESTER II

Core VI		Organisational Behaviour	
Code: 19PCOC21	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome:

CO No.	On completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the various dimensions of organizational behavior and models.	1,2	Un
CO – 2	understand the process of perception and concepts of attitude	1,5	Un
CO – 3	familiarise with the learning theories	5,8	Ev
CO-4	familiarise with the theories of motivation	4,5,8	Ev
CO-5	understand the various leadership styles and theories	4,5,8	Un
CO -6	understand the transactional analysis, group dynamics and conflicts	1,5	Un
Co - 7	understand the team building process	1,5	Un
Co - 8	understand the organisational change development and effectiveness	5,8	Un





**SEMESTER –II****Core VII****Financial Management****Code: 19PCOC22****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the conceptual framework of financial management and its applications under various environmental constraints to make optimal financial decisions.	1,3,6	Un
CO – 2	understand the importance of time value of money to make optimal financial decisions.	3,7	Un
CO – 3	apply the techniques of capital budgeting in financial decision making.	1,3,4,8	Ap
CO – 4	understand the importance and concepts of cost of capital.	1,3	Un
CO - 5	apply the capital structure theories to make optimal business decisions.	1,3,4	Ap
CO - 6	analyse the objectives and patterns of capital structure.	1,2 4,5	An
CO - 7	apply the capital budgeting techniques in investment proposals	1,4,5	Ap
CO - 8	analyse the various methods of valuation of shares and debentures	1,2,3	An

**SEMESTER –II****Core X Financial Markets and Institutions**

<b>Code: 19PCOC25</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>
-----------------------	--------------------	--------------------	--------------------

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO –1	understand the various types and features of negotiable instruments like promissory note, bill of exchange and cheque.	1,3	Un
CO –2	understand the constitutions, management and functions of RBI and commercial banks.	1,3,4	Ap
CO- 3	understand the present banking system of E-banking and its merits and constraints.	1,2,6	Ap
CO -4	familiarise with the capital markets.	1,4	Ap
CO - 5	understand the various mutual funds prevailing in various financial institutions.	1,6	Un
CO –6	understand various money market instruments and their utility	1,3,4	Ap
CO –7	gain knowledge on merchant banking and services rendered by merchant banks.	1,2,6	Ap
CO - 8	learn the importance of stock exchange and their functioning	1,3,4	Ap

SEMESTER –II			
<b>Elective I</b>	<b>A</b>	<b>Supply Chain Management</b>	
<b>Code:19PCOE21</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 3</b>

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO -1	understand the concept, essentials and issues of Supply Chain Management	1,2	Un
CO – 2	understand the power of Supply Chain Management	1,2	Un
CO – 3	evaluate the design of Supply Chain Management	7,8	Ev
CO - 4	know the different types of supply chain	2,4	Ap
CO - 5	know the importance of Supply chain management technology	2,3,4	An
CO-6	knowledge of green supply chain management	1,3	Ap
CO-7	understand the Supply Chain management in emerging markets	1,4	An
CO-8	research in supply chain management	5,6	Ev

**SEMESTER –III****Core XI Advanced Corporate Accounting****Code: 19PCOC31****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	have basic knowledge in Corporate Accounting and make suitable career choices.	1,2,3	Ev
CO – 2	understand the accounting system of Banking companies.	6,7	Ap
CO – 3	understand the accounting system of Insurance companies.	6,7	Ap
CO – 4	understand the accounting system of Electricity companies.	6,7	Ap
CO – 5	understand the accounting system of Holding companies.	6,7	Ap
CO – 6	understand the features and methods of Accounting for charging prices or Inflation Accounting and valuation of Human Resources.	6,7,8	Ap
CO-7	familiarise and apply the Human Resource Accounting.	1,8	Ap
CO-8	apply the accounting standards in preparation of financial statements.	1,4,8	Ap



<b>SEMESTER –III</b>			
<b>Core XIII</b>		<b>E – Commerce</b>	
<b>Code: 19PCOC33</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>

**Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand the concepts, application and models of e-commerce.	1,2,5	Un
CO – 2	learn the importance and application of electronic media for marketing of goods and services.	1, 5	Ap
CO – 3	evaluate the types of e- payment systems and know its operational, credit and legal risks.	1,2,5	Un,Ev
CO – 4	understand the dynamics of internet banking, security mechanism involved in net banking and inherent risks	1,7	Un,Ap
CO - 5	gain knowledge on e-sourcing and e-Trading and its use for generating income	1,7	Un,Ap
CO - 6	understand the types of security threats in e-Commerce transactions	1,5,6	Un, Re
CO - 7	analyse and evaluate e-Commerce Security Solutions for online transactions	1,5,6	An,Ev
CO - 8	identify the security issues and regulatory and legal framework in e-Commerce.	2, 6	Ap

**SEMESTER –III****Core XIV International Business****Code: 19PCOC34****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	pursue a career in global business management.	1,2,3	Ap
CO – 2	understand the unique problems of foreign economic, social, political, cultural and legal environment.	4	Ev
CO – 3	expose regional economic and political integration.	1,4	Ev
CO – 4	understand accounting systems of various countries and foreign exchange with balance of payment.	3,7	An
CO-5	familiarise with multinational corporations in India.	1,4	Un
CO – 6	expose towards the dynamics of International Business.	1	Ap
CO – 7	understand the different business centres and blocks.	8	Un
CO - 8	expose on MNC's at International Level.	4	Ev

**SEMESTER –III****Core XV Research Methodology**

<b>Code: 19PCOC35</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits : 4</b>
-----------------------	--------------------	--------------------	--------------------

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the research methods and steps in research process	1,2	Un
CO – 2	know the technique involved in defining a research problem	1,2,7	Un,Ap
CO – 3	identify the type of research design for different types of research work.	2,7	An
CO – 4	gain knowledge on sampling design and apply it for research	2,7,8	Un,Ap
CO – 5	understand the use of appropriate method for collection of data.	2, 3,4	An,Ap
CO – 6	process and analyze the data with appropriate statistical tools.	2,4,7	Ev,Ap
CO – 7	evaluate the result of research analysis, make suitable interpretation and use the mechanics in writing the research report.	7,8	Ev,Ap
CO – 8	understand the mechanics in writing a good research report.	7,8	Un,Ap



SEMESTER – III			
Elective II	A	Corporate Legal Framework	
Code : 19PCOE31	Hrs / Week : 4	Hrs/Sem : 60	Credit : 3

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the provisions of various laws.	1,3,6	Un
CO – 2	understand the role of SEBI	1,8	Un
CO - 3	be familiar with the Regulatory Environment International Business.	4	Ap
CO - 4	understand and identify the problems of consumers and redress the grievance.	1,8	Ap
CO - 5	understand the Negotiable Instruments	1,3,8	Ap
CO - 6	know about consumer rights	1,8	Ap
CO – 7	understand about the operations of grievance redressal forum.	1,8	Un
CO – 8	be familiar with the regulations of SEBI	1,8	Un



SEMESTER –IV			
Core XVI		Advanced Cost Accounting	
Code: 19PCOC41	Hrs/Week: 6	Hrs/Sem: 90	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the application of various methods and techniques of cost accounting and develop analytical skills in them.	1,3	Un
CO – 2	understand the significance of job costing and accounting for jobs.	4,6	Ap
CO – 3	understand the significance of contract costing and calculation of profit in contract cost.	4,6	Ap
CO – 4	analyse the significance of process costing and its application in different industries.	4,6	Ap
CO – 5	applications of Marginal costing techniques in managerial decision making.	4,6	Ap
CO – 6	understand the methods of costing used in service undertakings.	6,7	Ap
CO – 7	evaluate the inter firm comparison in managerial decision making.	6,7	Ev
CO – 8	evaluate the importance of uniform costing in managerial decision making.	6,7	Ev

**SEMESTER –IV****Core XVII****Taxation and Tax Planning****Code: 19PCOC42****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO- 1	know the concepts of Direct Taxes.	1,3	Un
CO- 2	understand the recent developments in Direct Taxation.	3,4	Un
CO- 3	compute the different heads of income.	3,6	Ap
CO- 4	understand the various assessment procedures, returns and types of assessment	1,3	Un
CO- 5	calculate the income of individuals and H.U.F.	3,6,7	Ap
CO- 6	understand and compute Total income, TDS and Advance tax	3,4,7	Ap
CO -7	compute the income of Firms and Tax on their Income.	4,6,8	Ap
CO- 8	prepare the tax returns and advise the assessee on their assessment	3,6,7	Ap



**SEMESTER –IV****Core XVIII Computerised Accounting Packages – Tally 9.0 Erp****Code: 19PCOC43****Hrs/Week: 5****Hrs/ Sem: 75****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand Growth of software for accounting entry with technical advantages and fundamental concepts	1,2,4	Un
CO – 2	understand stock items, stock groups, units of measure creation with Godown transfer.	1,2,4	Un
CO – 3	know the procedural Creation of cost categories, types of vouchers with ledger entry for the preparation of final accounts in Tally ERP.9 software.	1,2,4	Un
CO – 4	learn the concept, importance and application of GST	1,4,5	Ap
CO – 5	understand the Registration, Accounts and Returns under GST	4,5	Ap
CO – 6	be familiar with the statutory Taxation of Tally like TDS.	1,4,5	Ap

**SEMESTER –IV****Core- XIX Computerised Accounting Packages – Tally 9.0 ERP[Practicals]****Code: 19PCOC44****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	imbibe growth of software for accounting entry with technical advantages and fundamental concepts	1,2,4	Un
CO – 2	prepare stock items, stock groups, units of measure creation with Godown transfer.	1,2,4	Ap
CO – 3	create cost categories, vouchers with ledger entry for the preparation of final accounts .	1,2,4	Ap
CO – 4	learn the concept, importance and application of GST	1,4,5	Ap
CO – 5	prepare GST Registration and Returns under GST	1,4,5	Ap
CO – 6	be familiar with the statutory TDS Taxation in Tally like TDS.	1,4,5	Ap
CO – 7	create Pay roll info in Tally ERP	4,5	Ap
CO – 8	prepare employee creation, pay heads, attendance, in appropriate employee group	4,5	Ap



SEMESTER –I			
Core I		Advanced Management Accounting	
Course Code: 21PCOC11	Hrs/Week: 6	Hrs/Sem: 90	Credits : 4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand and analyse the significance of financial statements using various tools	1,7	An
CO – 2	prepare funds flow and cash flow statements using financial statements and compute working capital	1,3	An
CO – 3	compare the financial performance of companies using common size, comparative statement and trend analysis and ratio analysis.	1,4,6	Ap
CO – 4	understand the importance of budgets, budgetary control and prepare various budgets	1,5,8	Ev
CO – 5	know the significance of standard costing and analyse the variance	2,5	Ap
CO – 6	describe Responsibility accounting and apply Management Information System	1,4,6	An.

SEMESTER –I			
Core II		Modern Marketing	
Course Code: 21PCOC12	Hrs/Week: 6	Hrs/Sem: 90	Credits : 4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the significance of consumer behaviour and problems of Indian Consumers..	1,3	Un
CO – 2	evaluate retailing strategies and major drivers to it.	1,3,4	Ev
CO – 3	analyse online marketing in various decision making techniques.	8	An
CO – 4	apply theories to avoid consumer exploitation.	8	Ap
CO- 5	assess how services can be marketed in an effective way.	1,2,4,6	Ev
CO – 6	understand and apply Marketing Research in business.	8	Ap



**SEMESTER –I****Core III****Statistics for Research****Course Code: 21PCOC13****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the importance of probability and theoretical distribution in statistical decision making.	1,3,4,7	Un
CO – 2	apply the sample statistics in Non parametric tests in management decision making.	1,3	Ap
CO – 3	apply analysis of variances for optimal decisions.	1,3,8	Ap
CO – 4	understand the different statistical quality control techniques like control charts.	4 ,7	Un
CO - 5	learn decision making principles under uncertainty.	3,7	Un
CO - 6	apply the Chi – Square test in statistical decisions.	1,3	Ap

Semester - I			
Core V	Managerial Economics		
Course Code:21PCOC15	Hrs/Week: 6	Hrs/Sem: 90	Credits : 4

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the application of economic theories and concepts of business decision.	1,3,7	Un
CO – 2	understand the objectives of business theories of profit and problems in profit measurement.	1,7	Un
CO – 3	assess about market structure and pricing decisions.	3	Ev
CO - 4	compare about price discrimination and its types	3	Ev
CO – 5	appraise the pre-requisites of micro and macro economics	2	An
CO – 6	understand the fiscal and monetary policies and national income.	1,7	Un





## SEMESTER II

### Core VI

### Organisational Behaviour

**Course Code: 21PCOC21**

**Hrs/Week: 5**

**Hrs/Sem: 90**

**Credits: 4**

### Course Outcomes:

CO No.	On completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the various dimensions of organizational behavior and models.	1,2	Un
CO – 2	understand the process of perception and concepts of attitude and learning	1,5	Un
CO-3	know the organisational culture, its dimensions, effects and changes, innovation and creativity	3,5,8	Ev
CO -4	understand the transactional analysis, group dynamics and conflicts	1,5	Un
Co - 5	understand the team building process	1,5	Un
Co - 6	understand the organisational change development and effectiveness	5,8	Un



**SEMESTER –II****Core VII****Financial Management****Course Code: 21PCOC22****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the conceptual framework of financial management and its applications under various environmental constraints to make optimal financial decisions.	1,3,6	Un
CO – 2	understand the importance of time value of money to make optimal financial decisions.	3,7	Un
CO – 3	understand the importance and concepts of cost of capital.	1,3,4,8	Ap
CO – 4	apply the capital structure theories to make optimal business decisions.	1,3	Ap
CO - 5	apply the capital budgeting techniques in investment proposals	1,4,5	Ap
CO - 6	analyse the various methods of management of working capital such as cash , inventories, bills receivables and bills payables.	1,2,3	An

SEMESTER –II			
Core VIII		Business Environment	
Course Code: 21PCOC23	Hrs/Week: 5	Hrs/Sem: 75	Credits : 4

**Course Outcomes:**

CO No.	On completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the significance of Business Environment	1,4	Un
CO – 2	assess the various Policies and Economic reforms.	1,2	An
CO – 3	identify the various roles of Small Finance and Development Banks in Industrial Development.	3,5	Un
CO – 4	identify the various Political and Legal Environment of Business.	3,5	Un
CO- 5	discuss the Social and Actual Environment	1,7	Ev
CO-6	identify the impact of Technological Environment on Globalisation	1,8	Un



## SEMESTER –II

### Core X Financial Markets and Institutions

<b>Course Code: 21PCOC25</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits : 4</b>
------------------------------	--------------------	--------------------	--------------------

#### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the concepts of financial system, money market and its types	1,2	Un
CO – 2	understand the constitutions, management and functions of Stock Exchange and SEBI	1,3,4	Un
CO- 3	examine the capital markets and trading stock exchanges.	1,3	Ap
CO - 4	understand the financial institutions that cater the ways of trading in OTCEI, BSE and NSE	1,6	Un
CO - 5	understand various money market instruments and their utility	1,3,4	Un
CO – 6	examine the importance of stock exchange and their functioning under Depository and NSDL	1,3,4	Ap





**SEMESTER –II****Elective I A****Supply Chain Management****Course Code: 21PCOE21****Hrs/Week: 5****Hrs/Sem: 75****Credits : 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the concept and essentials of Supply Chain Management	1,2,4	Un
CO – 2	understand the performances of Supply Chain Management	1,2	Un
CO – 3	evaluate the role of IT in Supply Chain Management and its integration.	7,8	Ev
CO - 4	identify the different types of supply chains	2,4	Un
CO - 5	examine green supply chain management	1,3,4	Ap
CO - 6	analyse the case studies in supply chain management	4,5,6	An



**SEMESTER –III****Core XI                      Advanced Corporate Accounting****Course Code: 21PCOC31****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO – 1	identify the logic of Accounting Standards	1,3	Un
CO – 2	analyse the applicability of accounting standards.	4,7	An
CO – 3	apply the concept of Double Accounting system in Electricity companies.	1,6	Ap
CO – 4	apply the accounting procedure of Holding companies.	4,8	Ap
CO – 5	categorize the Accounting methods for changing prices	2,5	An
CO-6	critique the effect of changing costs and prices on affairs business.	1,5	Ev



SEMESTER –III			
Core XIV		International Business	
Course Code: 21PCOC34	Hrs/Week: 5	Hrs/Sem: 75	Credits : 4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	pursue a career in global business management.	1,2,3	Ap
CO – 2	identify the unique problems of foreign economic, social, political, cultural and legal environment.	4	Un
CO – 3	examine regional economic and political integration.	1,4	Ap
CO – 4	appraise accounting systems of various countries and foreign exchange with balance of payment.	3,7	An
CO-5	understand the different business centres and blocks.	8	Un
CO – 6	expose the dynamics on MNC's at International Level.	4	Ev



**SEMESTER –III****Core XV****Research Methodology****Course Code: 21PCOC35****Hrs/Week: 4****Hrs/Sem: 60****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the research methods and steps in research process	1,2	Un
CO – 2	know the technique involved in defining a research problem and set the research design	1,2,7	Ap
CO – 3	gain knowledge on sampling design and apply it for research	2,7,8	Ap
CO – 4	understand the use of appropriate method for collection of data.	2, 3,4	An,Ap
CO – 5	process and analyze the data with appropriate statistical tools.	2,4,7	Ev
CO – 6	evaluate the result of research analysis, make suitable interpretation and use the mechanics in writing the research report.	7,8	Ev





**SEMESTER –IV****Core XVI****Advanced Cost Accounting****Course Code: 21PCOC41****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO's addressed</b>	<b>Cognitive Level</b>
CO – 1	understand the application of various methods and techniques of cost accounting and develop analytical skills in them.	1,3	Un
CO – 2	understand the significance of job costing and contract costing and calculation of profit in contract costing	4,6	Ap
CO – 3	analyse the significance of process costing and its application in different industries.	4,6	Ap
CO – 4	apply the applications of Marginal costing techniques in managerial decision making.	4,6	Ap
CO - 5	apply the methods of costing used in service undertakings.	6,7	Ap
CO – 6	evaluate the inter firm comparison in managerial decision making and importance of uniform costing	6,7	Ev

**SEMESTER –IV****Core XVII****Taxation and Tax Planning****Course Code: 21PCOC42****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO- 1	know the concepts of Direct Taxes and recent development in direct taxation.	1,3,4	Un
CO- 2	compute the different heads of income.	3,6	Ap
CO- 3	understand the various assessment procedures, returns and types of assessment	1,3	Un
CO- 4	calculate the income of individuals and H.U.F	3,6,7	Ap
CO- 5	compute Total income, TDS Advance tax and prepare tax returns and advise the assesses	3,4,6,7	Ap
CO- 6	compute the income of Firms and Tax on their Income.	4,6,8	Ap



SEMESTER –IV			
Core XIX		Retail Marketing	
Course Code: 21PCOC44	Hrs/Week: 6	Hrs/ Sem: 90	Credits : 4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO – 1	understand the concept of Retail marketing and retailing scene in India.	1,3,4	Un
CO – 2	understand the significance and types of retailers and retail formats.	1,3	Un
CO – 3	understand the important strategies for building retail store image and retail service quality management.	1,3,4	Un
CO - 4	know the factors that affect Retail consumer Retail pricing, and merchandising.	1,4	Un
CO- 5	study the role of retail store layout and Retail Logistics.	7	Ap
CO - 6	know the uses of various technologies in Retail operations and E-Tailing	8	Ap

**Programme: B. Sc. Computer Science**

<b>SEMESTER- I</b>			
<b>Core – I</b>		<b>C Programming</b>	
<b>Code: 18UCSC11</b>	<b>Hrs / week : 4</b>	<b>Hrs / Semester: 60</b>	<b>Credits : 4</b>

**Course outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	draw the flow chart for the given problem and algorithm	1	Un
CO-2	describe the various operators and library functions and to define I/O functions	3	Un
CO-3	compare and contrast loops	4	An
CO-4	implement recursion	8	Ap
CO-5	understand the concept of storage classes	9	Un
CO-6	implement different operations on arrays	3	Ap
CO-7	develop an application using pointer.	5	Cr
CO-8	develop application using structure and pointers	10	Cr



SEMESTER- I			
Allied – I		Discrete Mathematics	
Code: 18UCSA11	Hrs / week : 4	Hrs / Semester: 60	Credits :3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define basic principles of sets and operations in sets	4	Re
CO-2	demonstrate relations	4	Ap
CO-3	apply counting principles	8	Ap
CO-4	compute the shortest path	8	Cr
CO-5	create an argument using logical notation and evaluate if it is valid or not.	1	Cr
CO-6	apply logical reasoning to solve a variety of problems.	8	Ap
CO-7	model problems in computer science using graphs and trees and traverse them depending on the problem.	8	Ap
CO-8	construct spanning tree and traverse trees and graphs.	5	Cr

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

SEMESTER- II			
Core II		C++ Programming	
Code: 18UCSC21	Hrs / week : 4	Hrs / Semester: 60	Credits : 4

**Course outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know about object oriented features.	8	Un
CO-2	understand the various operators and i/o functions	3	Re
CO-3	write program using inline and friend function and to implement overloading constructor	3	Cr, AP
CO-4	understand array of objects and to demonstrate operator overloading	8,9	Un, AP
CO-5	compare different inheritance methods	3	An
CO-6	develop linked list	5	Cr
CO-7	understand virtual function	8	Un
CO-8	create an application using file operations	10	Cr

SEMESTER- II			
Allied II		Digital Principles	
Code: 18UCSA21	Hrs / week : 4	Hrs / Semester: 60	Credits : 3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand various number systems and boolean functions.	9	Un
CO-2	apply various methods to simplify boolean function.	4	Cr
CO-3	construct digital circuits for boolean functions with logic gates.	6	Cr
CO-4	design combinational circuits with logic gates.	6	Cr
CO-5	apply classical techniques for the logical design of combinational and sequential circuits	6	Ap
CO-6	define sequential logic circuits.	6	Re
CO-7	understand the basic operation of flip-flops.	2	Re
CO-8	understand the various registers-transfer methods .	2	Re



SEMESTER- III			
Core – III		Java Programming	
Code: 18UCSC31	Hrs / week : 5	Hrs / Semester: 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the various operators , Class and Methods of Java	1	Re
CO-2	analyze the concept of Exception -Handling	2	An
CO-3	describe multi threading	4	Un
CO-4	discuss the Basics of Applet Concept	1	Re
CO-5	apply Event Handling Mechanisms	4	Ap
CO-6	implement AWT Controls	4	Ap
CO-7	design JDBC Package	4	Cr
CO-8	create an application using RMI	10	Cr

SEMESTER- III			
Allied III	Data Structures		
Code: 18UCSA31	Hrs / week : 4	Hrs / Semester: 60	Credits : 3

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze efficiency of algorithms	1	An
CO-2	compare various search methods	4	An
CO-3	choose the appropriate data structure needed to solve the problem.	4	Ap
CO-4	design stacks and queues	4	Cr
CO-5	discuss applications of stack and queue	6	Un
CO-6	create an expression tree for an expression and evaluate it.	3	Cr
CO-7	implement graph traversals	3	Ap
CO-8	compare and contrast sorting methods	4	An

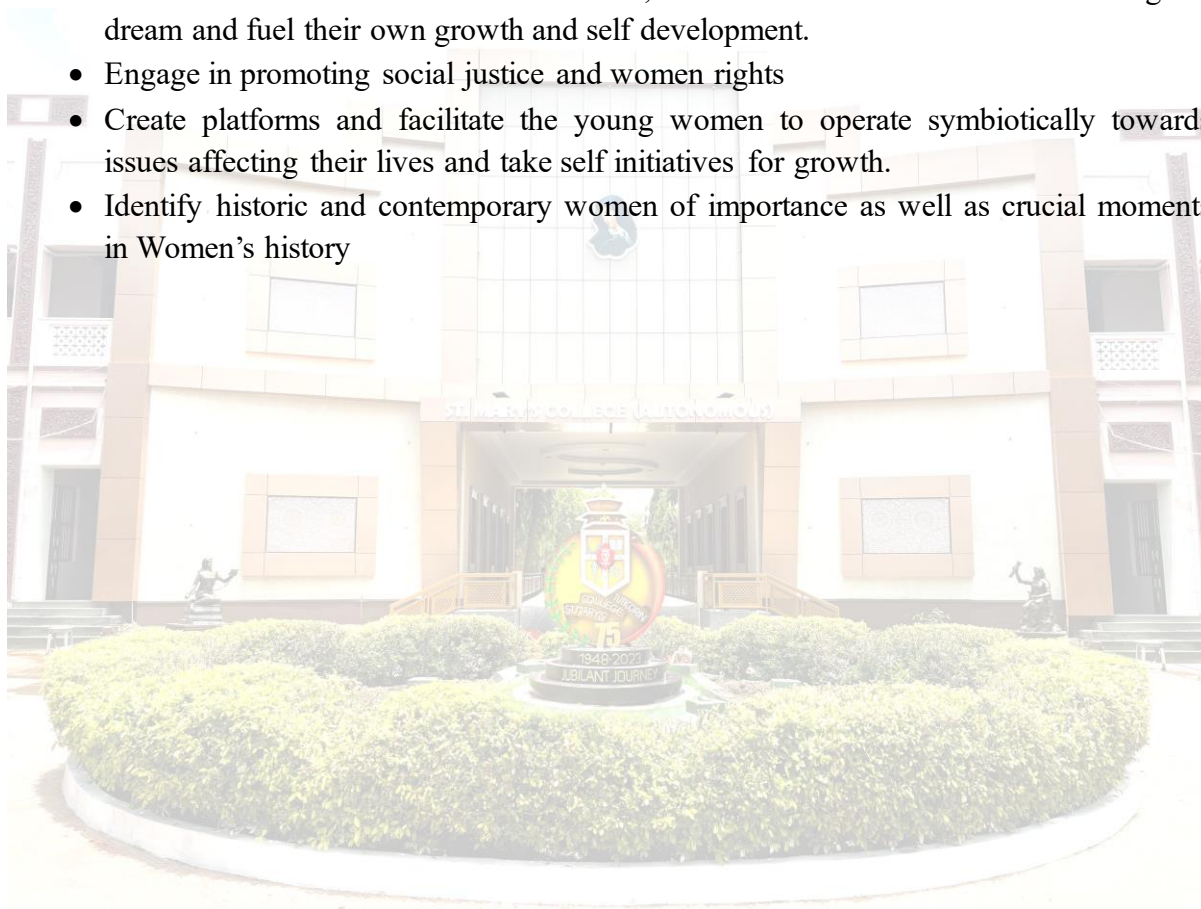
**SEMESTER- III****Core Skill Based****Microprocessors****Code: 18UCSS31****Hrs / week : 4****Hrs / Semester: 60****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	explain basic components and structure of Microprocessor and Microcomputers	1	Un
CO-2	describe 8085 Microprocessor and Memory Interfacing.	2	Un
CO-3	explain 8085 Microprocessor Programming model.	3	Un
CO-4	explain various categories of 8085 Microprocessor instruction set.	2	Un
CO-5	execute simple Assembly language Programs.	3	Ap
CO-6	explain various Assembly language programming techniques.	3	Un
CO-7	develop Assembly language Programs.	4	Cr
CO-8	explain interrupts in 8085 Microprocessor and high performance Processors.	1	Un

Semester – III			
Women's Synergy			
Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2

### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





<b>SEMESTER- IV</b>			
<b>Core V</b>		<b>Python Programming</b>	
<b>Code: 18UCSC41</b>	<b>Hrs / week :5</b>	<b>Hrs / Semester: 75</b>	<b>Credits :4</b>

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	explain what is python and why it is a powerful	2	Un
CO-2	distinguish various python objects	1	An
CO-3	apply decision and repetition structures in program design.	1	An
CO-4	demonstrate the use of Python lists and dictionaries	1	Ap
CO-5	demonstrate how to read and write files Programs in Python	2	Ap
CO-6	develop Python programs using files.	5	Cr
CO-7	identify the errors in csv files using and rectify.	6	Ap
CO-8	write python programs to solve problems	10	Cr

**SEMESTER- IV****Core – VI****RDBMS****Code: 18UCSC42****Hrs / week :6****Hrs / Semester: 90****Credits :4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand database concepts and database management system software	5	Un
CO-2	apply Formal Relational Query Languages	5	Ap
CO-3	demonstrate an application's data requirements using conceptual modeling tools like ER diagrams and Database Design	5	An
CO-4	implement normalization techniques	6	Ap
CO-5	compare the various storage media and Implement the file structures	6	Ap
CO-6	apply transaction and concurrency control	6	Ap
CO-7	implement Database System Architectures	10	Ap
CO-8	design databases for different databases	10	Cr

**SEMESTER- IV****Allied – IV****Resource Management Techniques****Code: 18UCSA41****Hrs / week :4****Hrs / Semester: 60****Credits :3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define operation research	1	Re
CO-2	formulate optimization problems	1	Cr
CO-3	identify the best technique to solve a game	3	An
CO-4	estimate the replacement age of a machine	3	Ap
CO-5	describe the functions and costs of an inventory	3	Un
CO-6	draw the network diagram and estimate completion time for a project	3	Cr
CO-7	describe project scheduling	3	Un
CO-8	implement various disciplines of queue	3	Ap



**Semester - V****Common Core****Computer Oriented Numerical Methods****Code: 18UCCC51****Hrs/Week: 6****Hrs/Sem: 90****Credits : 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	find numerical solution of a problem in all aspects and apply these methods to practical implementation as reliable and efficient.	3	Re
CO-2	recognize and apply appropriate principles and concept relevant to Numerical Analysis.	3	Ap
CO-3	discover the most appropriate estimate for the missing data.	3	Cr
CO-4	analyze the errors obtained in the numerical solutions of problems.	3	An
CO-5	use appropriate numerical methods, determine the solutions to given problems.	3	Ap
CO-6	demonstrate the method of interpolation and find the solution for the data.	3	Un
CO-7	develop their calculation skills.	3	Cr
CO-8	differentiate Gauss Jacobi iteration and Gauss Seidal Iteration method.	3	An



SEMESTER- V			
Core – VIII		Operating Systems	
Code: 18UCSC52	Hrs / week :4	Hrs / Semester: 60	Credits :4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define Operating System Structure and the various operations , process of operating system	1	Re
CO-2	analyze the Various Scheduling Algorithms of Process Management	6	An
CO-3	explain the concept of Deadlock.	6	Re
CO-4	implement the various allocation methods of Memory Management	6	Ap
CO-5	access Methods and File allocation Methods	6	Re
CO-6	compare the scheduling algorithms of disk	6	An
CO-7	discuss about open source software	9	Un
CO-8	compare Linux with other operating system	6	An

**SEMESTER- V****Core – IX****Programming With PHP and MySQL****Code: 18UCSC53****Hrs / week :4****Hrs / Semester: 60****Credits :4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the variable usage in PHP	1	Un
CO-2	creating forms with conditional statements	1	Cr
CO-3	describe about arrays, files, cookies and functions.	2	Un
CO-4	create an application using file operation	4	Cr
CO-5	implement the concept of oracle in Mysql query	7	Ap
CO-6	explain the concept Grouping data, filtering, Aggregate function	7	Un
CO-7	explain the concept of the sub queries, joining tables,set operator and full text searching	7	Ap
CO-8	develop PHP program with database connectivity .	7	Cr

Semester - V			
SEMESTER- V			
Core – Integral I		Data Mining	
Code: 18UCSI51	Hrs / week : 4	Hrs / Semester: 60	Credits :4

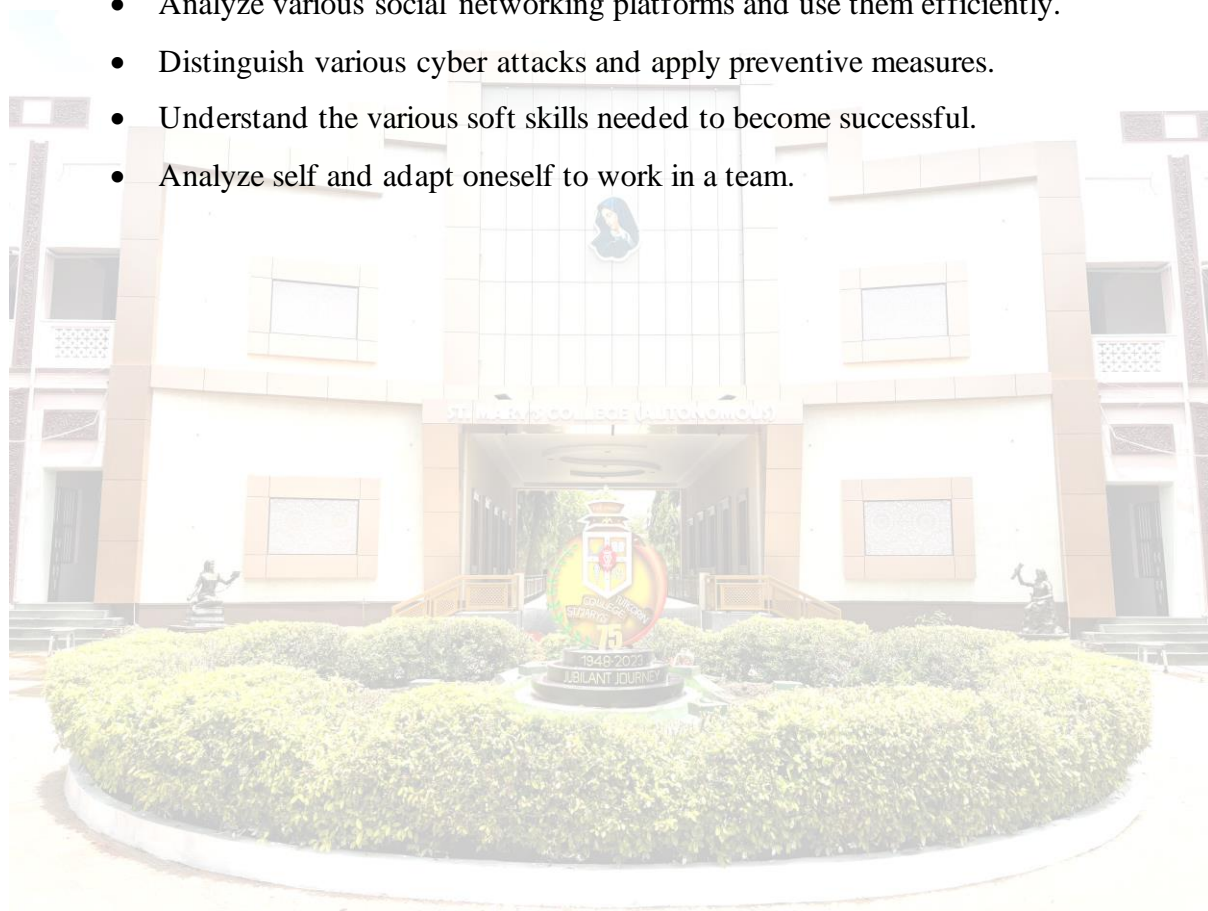
**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define data mining process and the various data mining techniques	1	Re
CO-2	apply market basket analysis	7	Ap
CO-3	compare different classification methods	7	An
CO-4	implement cluster analysis	7	Ap
CO-5	create an ODS	7	Cr
CO-6	discuss about data warehousing	6	Re
CO-7	compare and contrast OLAP AND OLTP	7	An
CO-8	describe various search engines .	10	Un

<b>Common Skill Based Core</b>	<b>Computer for Digital Era and Soft Skills</b>		
<b>Code : 18UCSB51</b>	<b>Hrs / Week : 2</b>	<b>Hrs / Sem : 30</b>	<b>Credits : 2</b>

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.





SEMESTER VI			
Core – X		Android Programming	
Code: 18UCSC61	Hrs / week :5	Hrs / Semester: 75	Credits :4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	distinguish different mobile techniques	2	Re
CO-2	install Android SDK	5	Ap
CO-3	design User Interface	5	Cr
CO-4	modify app to include multimedia content	10	An
CO-5	create app to access SD card	10	Cr
CO-6	create app with Google Maps	10	Cr
CO-7	design app with SQLite database	10	Cr
CO-8	deploy Mobile app	10	Ap

SEMESTER VI			
Core – XI		Software Engineering	
Code: 18UCSC62	Hrs / week :4	Hrs / Semester: 60	Credits :4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describe the concepts of Software Engineering.	1	Un
CO-2	describe Software Life Cycle Model	1	Un
CO-3	discuss Project Management	2	Ap
CO-4	discuss software Requirement and specification	2	Ap
CO-5	explain Software Design Process	3	Un
CO-6	describe User Interface Designing	3	Un
CO-7	explain software Testing and Software Reliability	3	Un
CO-8	Discuss Software Quality Management System	3	Un

SEMESTER VI			
Core – XII		Computer Networks	
Code: 18UCSC63	Hrs / week :5	Hrs / Semester:75	Credits :4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define Network and the various types of Network	1	Re
CO-2	demonstrate the model of Network	1	An
CO-3	analyze the structure of Switch and the Protocols.	2	An
CO-4	discuss Connection devices by using Wired LANs	2	Ap
CO-5	discuss the Network layer and Transport Layer in routing and TELNET	6	Re
CO-6	describe the various routing algorithms in network layer	8	Un
CO-7	define Network Security and other aspects of Security	5	Re
CO-8	acquire the basic knowledge of layers of OSI model	5	Re

**SEMESTER VI****Core – Integral II****Cloud Computing****Code: 18UCSI61****Hrs / week :4****Hrs / Semester: 60****Credits :4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define cloud computing	1	Re
CO-2	describe the characteristics of cloud	2	Un
CO-3	identify the technical foundations of cloud system architecture	2	An
CO-4	characterize the distinction between infrastructure, platform, software and service	7	An
CO-5	illustrate the use of load balancing techniques	7	Ap
CO-6	attempt to generate new ideas and innovations in cloud computing	7	Cr
CO-7	compare and contrast the various web services	10	An
CO-8	demonstrate the usage of mail services	10	An



Semester I			
Core – I		C Programming	
Course Code:21UCSC11	Hrs / week : 4	Hrs / Semester: 60	Credits : 4

**Course outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describe algorithm, flowchart, various operators and library functions of C language	1	Un
CO-2	compare and contrast loops	4	An
CO-3	understand the concept of storage classes and input /output statements and functions	1	Un
CO-4	implement different operations on arrays	2,6	Ap
CO-5	develop programs using pointers , structures and union	2,6	Ap
CO-6	describe the file operations	1,2	Un

## SEMESTER- I

Allied – I

Mathematics for Computer Science

Course Code: 21UCSA11

Hrs / week :3

Hrs / Semester: 45

Credits :3

### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	create an argument using logical notation and evaluate if it is valid or not.	1	Cr
CO-2	apply logical reasoning to solve a variety of problems.	4	Ap
CO-3	compute measures of central tendency	4	Ap
CO-4	calculate and compare dispersion , Skewness, kurtosis	4	An
CO-5	compute the shortest path	1	An
CO-6	model problems in computer science using graphs and solve problems using graphs	1	Ap

## SEMESTER- I

### Skill Enhancement Course-I Professional English for Computer Science –I

Course Code: 21UCSPE1

Hrs / week :2

Hrs / Semester: 30

Credits :2

#### Course Outcomes:

CO.No	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	recognise their own ability to improve their own competence in using the language	7	Un
CO-2	use language for speaking with confidence in an intelligible and acceptable manner.	3	An
CO-3	understand the importance of reading for life	3	Un
CO-4	write simple sentences without committing error of spelling or grammar	7	An
CO-5	develop critical thinking skills and get culturally aware of the target situation	4	Cr
CO-6	develop communicative skill for professional collaboration	7	Cr

## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014



SEMESTER- II			
Core II		C++ Programming	
Course Code: 21UCSC21	Hrs / week : 4	Hrs / Semester: 60	Credits : 4

**Course outcome:**

CO No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	know about object-oriented features.	1	Un
CO-2	develop program using inline ,friend function , overloading constructor and destructor	4	Ap
CO-3	develop the array of objects and demonstrate operator overloading	2,6	Un
CO-4	categorize various inheritance methods	1	An
CO-5	understand pointer operations	1	Un
CO-6	understand virtual function and file operations	1	UN

## SEMESTER II

Allied II

Digital Electronics

Course Code: 21UCSA21

Hrs / week : 3

Hrs /Semester:45

Credits : 3

### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand various number systems and boolean functions.	1	Un
CO-2	apply various methods to simplify boolean function.	4	Ap
CO-3	construct digital circuits for boolean functions with logic gates.	4	Cr
CO-4	design combinational circuits with logic gates.	4	Cr
CO-5	define sequential logic circuits.	1	Re
CO-6	analyse the operation of various flip-flops.	1	An

**SEMESTER- II****Skill Enhancement Course-II****Professional English for Computer Science –II****Course Code: 21UCSPE2****Hrs / week :2****Hrs / Semester: 30****Credits :2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic objective of the course and obtain strong professional vocabulary for its application at different platforms	7	Un
CO-2	apply the knowledge for writing purposes such as Presentation, drafting and project report etc.	5	Ap
CO-3	evaluate the correct and error-free writing by being well-versed in rules of English grammar and cultivate relevant technical style of communication and presentation.	7	Ev
CO-4	apply techniques for developing inter-personal communication and to respond questions at a formal interview	5,7	Ap
CO-5	apply critical thinking skills to face everyday life situations.	4	Ap
CO-6	develop strategic competence that will help in efficient communication	3, 7	Ap

### SEMESTER- III

**Core – III**

**Java Programming**

**Course Code: 21UCSC31**

**Hrs / week : 4**

**Hrs / Semester: 60**

**Credits : 4**

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	knowledge of the structure and model of the Java programming language	1,2	Re
CO-2	develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.	2	An
CO-3	apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.	2	Un
CO-4	design event driven GUI .	6	Ap
CO-5	Develop web related applications	8	Ap
CO-6	Develop applications using JDBC	6,8	Ap





### SEMESTER- III

**Allied III**

**Data Structures**

**Course Code: 21UCSA31**

**Hrs / week : 3**

**Hrs / Semester: 45**

**Credits : 3**

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	compare various search methods	4	An
CO-2	implement hashing methods	4	Ap
CO-3	discuss applications of stack	1	Un
CO-4	create an expression tree for an expression and evaluate it.	2	Cr
CO-5	implement heap concepts	4	Ap
CO-6	compare and contrast sorting methods	4	An



**SEMESTER- III****Skill Based Elective****Microprocessors****Course Code: 21UCSS31****Hrs / week : 2****Hrs / Semester: 30****Credits : 2****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	explain basic components and structure of Microprocessor and Microcomputers	1	Un
CO-2	describe 8085 Microprocessor and Memory Interfacing.	1	Un
CO-3	classify the various 8085 Microprocessor instruction set.	1	Un
CO-4	develop Assembly language Programs for various arithmetic operations	2	Ap
CO-5	develop Assembly language Programs for time delays	1	Ap
CO-6	. understand stack and subroutine operations in 8085	2	Un

### SEMESTER- III

#### Skill Based Elective 2                      E- Commerce

<b>Course Code: 21UCSS32</b>	<b>Hrs / week :2</b>	<b>Hrs / Semester: 30</b>	<b>Credits: 2</b>
------------------------------	----------------------	---------------------------	-------------------

#### Course Outcome:

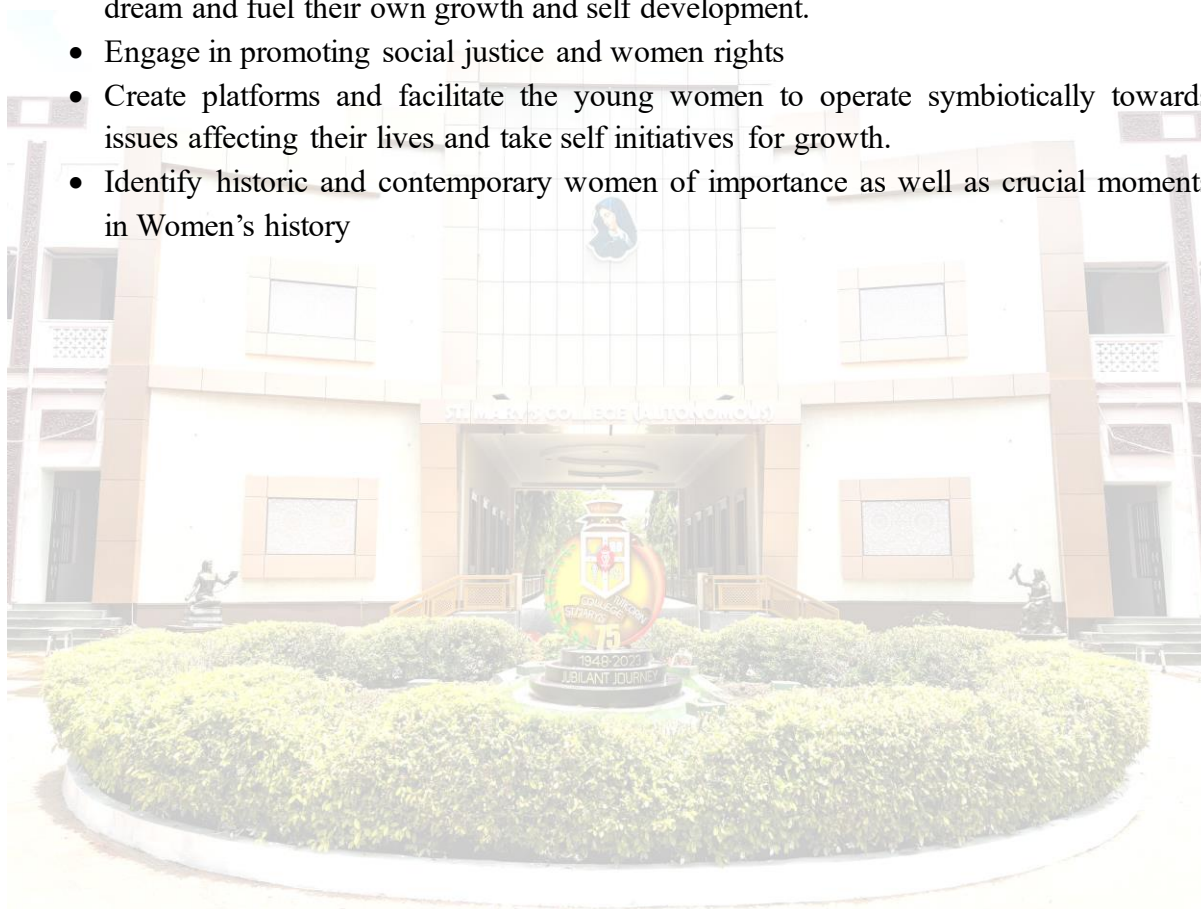
CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Explain what is E-Commerce	6	Un
CO-2	Compare different business models of E-commerce	6	An
CO-3	Differentiate E-marketing versus traditional marketing	4	Ap
CO-4	Facilitate online marketing	5	Ap
CO-5	Implement E-advertising	5,8	Cr
CO-6	Devise security for E-Commerce	3	Cr



Semester – III			
Women's Synergy			
Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2

### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





SEMESTER- IV			
CORE IV		RDBMS with PHP and MySQL	
Code: 21UCSC41	Hrs / week :4	Hrs / Semester: 60	Credits :4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	explain the DBMS	1	Un
CO-2	describe Data models	2	Un
CO-3	explain the variable usage in PHP	1	Un
CO-4	creating forms with conditional statements	1	Cr
CO-5	describe about arrays, files, cookies and functions.	2	Un
CO-6	create an application using php and mysql	4	Cr

## SEMESTER- IV

Allied – IV

Big Data Analytics

Course Code: 21UCSA41

Hrs / week :3

Hrs / Semester: 45

Credits :3

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of Big Data	1	Un
CO-2	describe Big data Analytics	4	Un
CO-3	explain Big Data Analytics Process	4	Un
CO-4	understand Machine Learning	6	Un
CO-5	understand artificial Intelligence	6	Un
CO-6	explain the Applications of Big Data	5,8	Ap

**SEMESTER- IV****Skill Based Elective 2****Cyber Security****Course Code: 21UCSS42****Hrs / week :2****Hrs / Semester: 30****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify how security issues in cyberspace raise ethical concerns	3	Un
CO-2	adapting Artificial Intelligence Ethics	6,8	Cr
CO-3	acquire the knowledge of Cyber laws, regulations in information Society	3	Un
CO-4	identify and explore the different types of Cyber Crimes	8	Un
CO-5	appraise the Cyber offences	5	Ev
CO-6	assess Cyber Bullying and digital literacy for protecting children from bullying.	8	Ap

**SEMESTER-IV****Part IV Non Major Elective****Introduction To Internet****Course Code:21UCSN41****Hrs/week:2****Hrs/sem:30****Credits: 2****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	outline the History of Internet	1	Un
CO-2	understand about E-mail and how it works	6	Un
CO-3	compare different types of browser and its tools	6	Ev
CO-4	explain Blogging and it's functions	7	Ev
CO-5	describe Electronic Publishing and applications	6	Un
CO-6	explain Social Networking and awareness on Social Networking	8	Un





**Semester -V****Common Core VII      Computer Oriented Numerical Methods****Course Code: 21UCMC51****Hrs/Week: 6****Hrs/Sem: 90****Credits : 5****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	recognize and apply appropriate principles and concepts relevant to Numerical Analysis.	6	Ap
CO-2	discover the most appropriate estimate for the missing data.	4	Cr
CO-3	analyze the errors obtained in the numerical solutions of problems.	4	An
CO-4	demonstrate the method of interpolation and find the solution for the data.	6	Un
CO-5	analyze and visualize data	4	An
CO-6	create and control simple plot and user-interface graphics objects in MATLAB	2,8	Cr

**SEMESTER- V****Core – VIII****Operating Systems****Course Code: 21UCSC51****Hrs / week :4****Hrs / Semester: 60****Credits :4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define Operating System Structure and the various operations , process of operating system	1	Re
CO-2	analyze the Various Scheduling Algorithms of Process Management	4	An
CO-3	explain the concept of Deadlock.	4	Re
CO-4	implement the various allocation methods of Memory Management	5	Ap
CO-5	discuss about open source software	6	Un
CO-6	compare Linux with other operating systems	6	An



## SEMESTER- V

**Core IX**

**Python Programming**

**Course Code:21UCSC52**

**Hrs / week :4**

**Hrs / Semester: 60**

**Credits :4**

### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain what is python and how to execute python programs	2	Un
CO-2	distinguish various python objects	1	An
CO-3	apply decision and repetition structures in program design.	2	An
CO-4	demonstrate the use of Python lists and dictionaries	1	Ap
CO-5	demonstrate how to read and write files Programs in Python	2	Ap
CO-6	develop Python programs using files.	5	Ap



**SEMESTER- V****Core – Elective I****Data Mining****Course Code: 21UCSE51****Hrs / week : 4****Hrs / Semester: 60****Credits :4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	implement Apriori algorithm	2	Ap
CO-2	compare different classification methods	4	An
CO-3	implement cluster analysis	6	Ap
CO-4	demonstrate the usage of various search engines	3	An
CO-5	discuss about data warehousing	6	Re
CO-6	compare and contrast OLAP AND OLTP	8	An





**SEMESTER- V****Core – Elective I****Introduction to IoT****Course Code: 21UCSE52****Hrs / week : 4****Hrs / Semester: 60****Credits :4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand and recall the characteristics and enabling technologies of IoT	8	Re
CO-2	analyse the appropriate transport protocols, addressing and identification techniques suitable for IoT Domain	6	An
CO-3	explore the apt cloud services and cloud service providers for IoT based Smart services	8	Ap
CO-4	discuss about challenges and obstacles of IoT	8	An
CO-5	compare and contrast fog and cloud computing	4	An
CO-6	describe IoT based Application to Monitor Water Quality	3	Un



### Semester - V

#### Common Skill Based Core

#### Computer for Digital Era and Soft Skills

Code : 21UCSB51

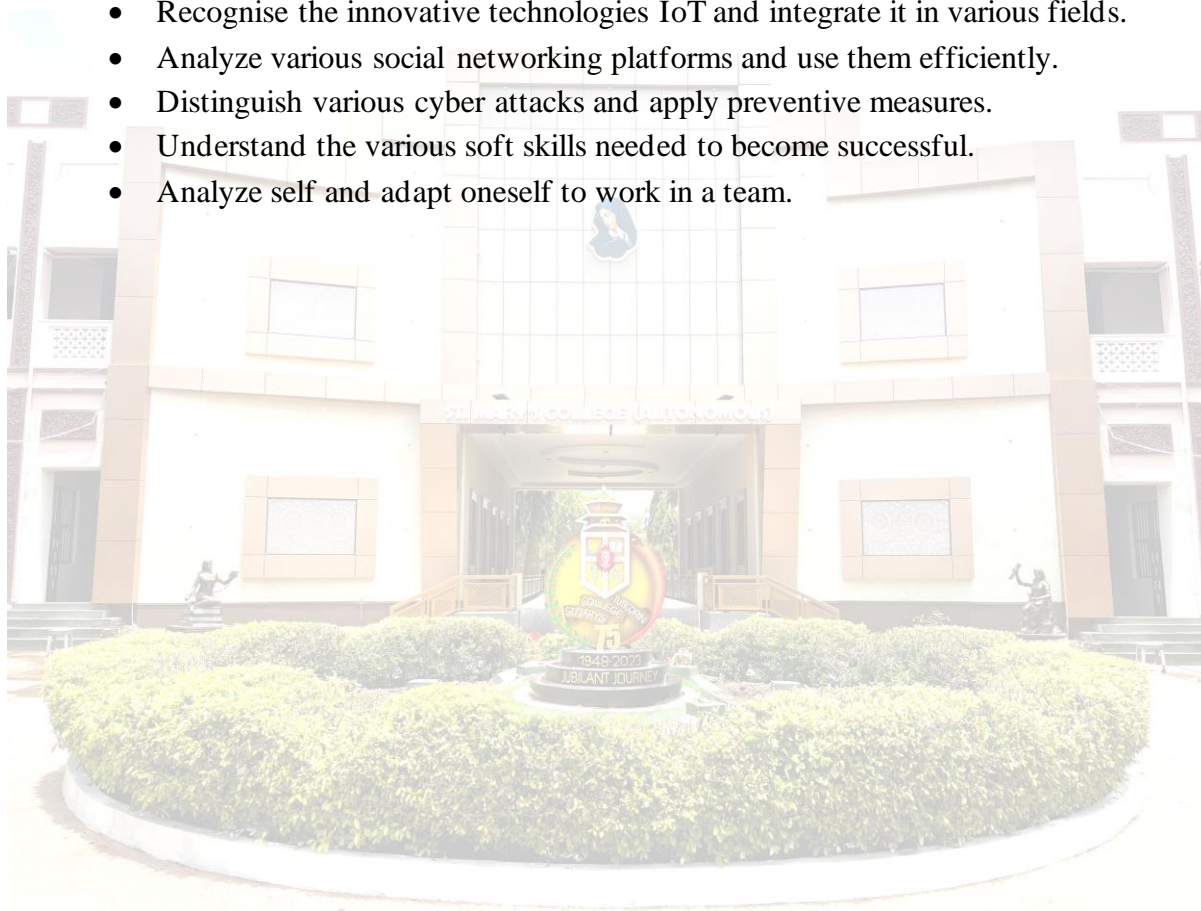
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



## SEMESTER VI

Core – X

.NET Programming

Course Code: 21UCSC61

Hrs / week :5

Hrs / Semester: 75

Credits :4

### Course Outcome:

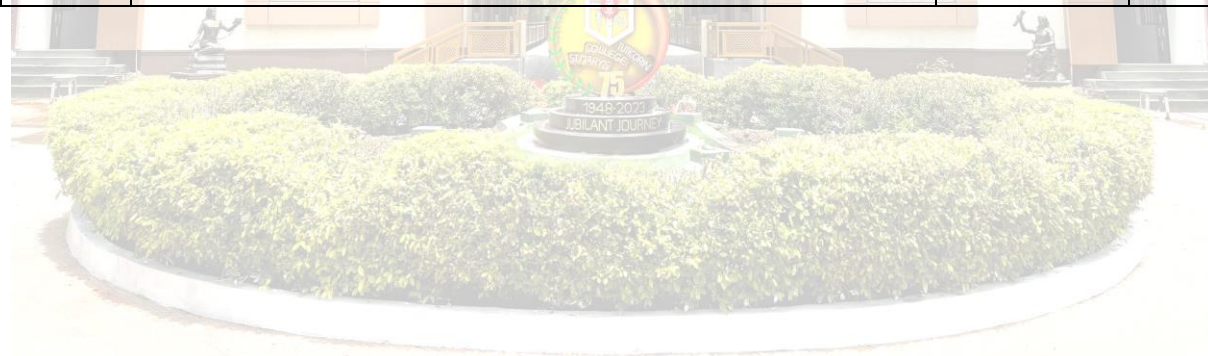
CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand .NET framework	1	Re
CO-2	develop console applications with c#	2	Ap
CO-3	create web server applications using ASP.NET	6	Cr
CO-4	implement validation controls	2	Ap
CO-5	design applications with server controls	2	Cr
CO-6	develop databases using ADO.NET	2, 8	Ap



SEMESTER VI			
Core – XI		Software Engineering	
Course Code: 21UCSC62	Hrs / week :5	Hrs / Semester: 75	Credits :4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	describe Software development Process	1	Un
CO-2	discuss software Requirements and Architectural Design	1,3	Un
CO-3	explain Reliability and Safety Engineering	6	Un
CO-4	understand component models and architectural patterns for distributed and embedded systems.	1	Un
CO-5	explain engineering principles and techniques in software development.	2	Un
CO-6	discuss Software Quality Management System	1	Un





## SEMESTER VI

**Core – XII**

**Computer Networks**

**Course Code: 21UCSC63**

**Hrs / week :5**

**Hrs / Semester:75**

**Credits :4**

### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define Network and the various types of Network	1	Re
CO-2	analyze the structure of Switch and the Protocols.	4	An
CO-3	discuss Connection devices by using Wired LANs	1	Ap
CO-4	describe the various routing algorithms in network layer	4	Un
CO-5	define Network Security and other aspects of Security	1	Re
CO-6	acquire the basic knowledge of layers of OSI model	1	Re



SEMESTER VI			
Core – Elective II		Cloud Computing	
Course Code: 21UCSE61	Hrs / week :4	Hrs / Semester: 60	Credits :4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	examine the characteristics of cloud	3	An
CO-2	identify the technical foundations of cloud system architecture	3	An
CO-3	characterize the distinction between infrastructure , platform, software and service	6	An
CO-4	illustrate the use of load balancing techniques	5	Ap
CO-5	compare and contrast the various web services	8	An
CO-6	demonstrate the usage of mail services	7	An



## SEMESTER VI

### Core – Elective II

### Mobile Computing

**Course Code: 21UCSE62**

**Hrs / week :4**

**Hrs /Semester: 60**

**Credits :4**

### Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	distinguish different mobile techniques	8	Re
CO-2	install Android SDK	6	Ap
CO-3	design User Interface	5	Cr
CO-4	modify app to include multimedia content	6	An
CO-5	create app with Google Maps	3	Cr
CO-6	design messaging app	5	Cr



**Programme: M.Sc. Computer Science**

<b>SEMESTER –I</b>			
<b>Core I</b>	<b>Design and Analysis of Algorithms</b>		
<b>Code:19PCSC11</b>	<b>Hrs/week:5</b>	<b>Hrs/Sem:75</b>	<b>Credits:4</b>

**Course Outcome:**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	analyze the running time and space complexity of algorithms using asymptotic analysis.	1,3,4	An
CO-2	understand different tree traversals, graph traversals and spanning trees.	2,7	Un
CO-3	apply divide and conquer to binary search, quick sort, merge sort.	3	Ap
CO-4	apply greedy method to knapsack problem, prim's, kruskal algorithms.	3	Ap
CO-5	apply dynamic programming to optimal binary search trees, 0/1 knapsack problem, etc.	3	Ap
CO-6	apply Backtracking to n-queen problem, sum of subsets problem, graph coloring etc.	3	Ap
CO-7	apply branch and bound to Travelling sales person problem, 0/1 knapsack problem.	3	Ap
CO-8	describe the notions of P, NP, NP-complete, and NP-hard	2,7	Un



**SEMESTER – I****Core II****J2EE****Code : 19PCSC12****Hrs / Week : 5****Hrs / Sem : 75****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	identifying a high-level overview of the J2EE architecture	2	Re
CO-2	identify the services and components which comprise the J2EE specification	2	Re
CO-3	explain how J2EE technology applications are packaged	1,2	Un
CO-4	illustrate Web application development using WebComponents Servlet and JSP	1,5,8	Un
CO-5	summarize the features of Servlet and frameworks used in web applications development	5	Un
CO-6	understand design applications using Struts and Hibernate and Spring	1,6	Un
CO-7	finding new applications from existing beans in Enterprise beans.	1,8	An
CO-8	summarizing the types of Enterprise beans	2	Un
CO-9	recognizing the Hibernate framework in the development of Java application.	1,5	Re

**SEMESTER – I****Core III Mathematical Foundations for Computer Science****Code : 19PCSC13****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	finding the complementary relationship of skewness with measures of central tendency and dispersion in describing a set of data.	3	An
CO-2	understanding ‘moments’ as a convenient and unifying method for summarizing several descriptive statistical measures.	2	Un
CO-3	identifying the strength and direction of a linear relationship between two variables using Correlation.	2	Re
CO-4	illustrating how much a dependent variable changes based on adjustments to an independent variable using regression.	2	Un
CO-5	acquire the knowledge of logical operations and predicate calculus needed for computing skill.	2	Un
CO-6	finding whether the given grammar is regular or not.	1	An
CO-7	apply the acquired knowledge of formal languages to the engineering areas like Compiler Design.	1	Ap
CO-8	distinguishing Deterministic Finite automata and Non Deterministic Finite automata.	2	An

SEMESTER –I			
Core IV		Advanced Computer Architecture	
Code:19PCSC14	Hrs/week:4	Hrs/Sem:60	Credits:4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand basic structure of computer.	6	Un
CO-2	perform computer arithmetic operations.	6,2	Ev
CO-3	understand the concept of cache mapping techniques.	6	Un
CO-4	understand the concept of I/O organization	6	Un
CO-5	conceptualize instruction level parallelism	6	Un
CO-6	understand pipelining and its concepts	6	Un
CO-7	understand various data transfer techniques in digital computer.	6	Un
CO-8	analyze performance issues in processor and memory design of a digital computer.	6	An



SEMESTER-I			
Core V		Neural Networks	
Code:19PCSC15	Hrs/week:4	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand basic architecture of neural networks	1	Un
CO-2	understand basic learning algorithms	3	Un
CO-3	understand the classification taxonomy of NN	4	Un
CO-4	compare and analyse the training algorithms	4	An
CO-5	apply NN models to find solutions	4,6	Ap
CO-6	analyse the use of Associative memory	1	An
CO-7	learn to diagnose the cause and rectification of faults	4	Re
CO-8	compare different network models	4	An





**SEMESTER – II****Core VI Distributed Database Management System****Code : 19PCSC21****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand what is Distributed DBMS	4	Un
CO-2	understand various architectures of DDBMS	4	Un
CO-3	apply various fragmentation techniques in a given problem	4	Ap
CO-4	understand the steps of query processing	4	Un
CO-5	finding how optimization techniques are applies to Distributed Database	4,6	An
CO-6	learn and understand various Query Optimization Algorithms	3	Un
CO-7	understand Transaction Management & Compare various approaches to concurrency control in Distributed database	6	Un
CO-8	understand various algorithms and techniques for deadlock and recovery in Distributed database	3	Un

## SEMESTER- II

### Core VII – .Net Framework Programming

<b>Code: 19PCSC22</b>	<b>Hrs / week :5</b>	<b>Hrs / Sem: 75</b>	<b>Credits :4</b>
-----------------------	----------------------	----------------------	-------------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	set up a programming environment for ASP.net programs	1	Ap
CO-2	creating ASP.Net applications using standard .net controls	1	Cr
CO-3	develop a data driven web application	1,4	Ap
CO-4	connecting to data sources and managing them	1,4	Ap
CO-5	maintain session and controls related information for user used in multi-user web applications	1	Ap
CO-6	understand the fundamentals of developing modular application by using object oriented methodologies	1,4	Re
CO-7	learn to diagnose the cause of errors and handle it	1	Ap
CO-8	create and deploy ASP.NET web applications	1,4,6,8	Cr



**SEMESTER- II****Core VIII****Data Mining & R Programming****Code: 19PCSC23****Hrs / week :4****Hrs / Sem: 60****Credits :4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	display a comprehensive understanding of different data mining tasks and the algorithms most appropriate for addressing them.	1	Un
CO-2	know Strengths & Limitations of Data Mining Methods	1	Un
CO-3	display interesting patterns from large data, to extract and analyse, make predictions and solve problems	1, 4	An
CO-4	evaluate models/algorithms with respect to their accuracy.	6	Ev
CO-5	demonstrate capacity to perform a self directed piece of practical work that requires the application of data mining techniques.	1	Ev
CO-6	develop hypotheses based on the analysis of the results obtained and test them.	1	Ev
CO-7	learn to Set Up Data for Experiments	1,4	Ap
CO-8	conceptualize a data mining solution to a practical problem.	1,4, 8	Ap

SEMESTER II			
Core IX		Digital Image Processing	
Code: 19PCSC24	Hrs/Week: 5	Hrs/Sem: 75	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	calculate the Fourier transforms of standard functions both from the definition and by using tables.	2	Ap
CO-2	design and implement the different transforms like Fourier transform and Z transform.	2	Cr
CO-3	write given function in terms of sine and cosine in Fourier series and also to get knowledge in Fourier Transforms.	2	Re
CO-4	solve finite difference equations using Z- transform using MATLAB	1	Ap
CO-5	review the fundamental concepts of a digital image processing system.	3	Re
CO-6	analyze images in the frequency domain using various transforms.	2	Re
CO-7	interpret image compression, segmentation and representation standards	3,4	An
CO-8	understand image filtering for use in various applications	1	Un



**SEMESTER- II****Core X****Advanced Computer Networks****Code: 19PCSC25****Hrs / week :4****Hrs / Sem: 60****Credits :4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	solve technical problems in ARQ protocols,MAC protocols and Routing Algorithm.	3,7	Ap
CO-2	demonstrate the working of HUB and Switches.	7	Ap
CO-3	examine the Performance of ARQ Protocols,Ethernet LAN, Token Ring, RIP, TCP and UDP.	7	Ap
CO-4	identify the networking technologies and associated network standards.	7	An
CO-5	solve technical problems in ARQ protocols,MAC protocols and Routing Algorithm.	3,7	Ap
CO-6	construct the route discovery algorithm to determine the shortest path in an internet represented as a weighted graph.	5,7	Ap
CO-7	understand network architecture	7	Un
CO-8	implementation of protocols like TCP, UDP and IP using OPNET and NS-2	5,7	Ap

**SEMESTER-III****Core XI****Wireless Communication****Code: 19PCSC31****Hrs/Week: 4****Hrs/Sem: 60****Credits : 4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand wireless transceivers	7	Un
CO-2	describe the evolution and History of Wireless technology	7	Un
CO-3	compare 3G Cellular telephone data transfer rates with those over Wireless LAN	7	An
CO-4	list the use of at least two advantages of Digital encoding for cellular telephone systems	6	Ap
CO-5	identify two core networks associated with 3G Cellular networks	4	An
CO-6	describe the basic operation of GSM GPRS	7	Un
CO-7	apply the concepts learnt through theory and Laboratory in various applications to meet the empathetical needs of our society.	8	Ap
CO-8	implement signal processing in wireless systems	6	Ap

SEMESTER – III			
Core XII		Cloud Computing and Big Data	
Code : 19PCSC33	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	carry out the decisions based on data analytics.	3,6	Ap
CO-2	analyze the big data analytic techniques for useful business applications.	4	An
CO-3	identify the data models in relation to Big Data Storage and Analytics.	2	Re
CO-4	implemen Big Data applications Using Pig and Hive	1,8	Ap
CO-5	plan to work with big data platform	1,2	Cr
CO-6	identify the architecture, infrastructure and delivery models of cloud computing	2	Re
CO-7	apply suitable virtualization concept.	5,8	Ap
CO-8	organize the core issues of cloud computing such as security, privacy and interoperability	3,6	An

**SEMESTER – III****Elective I A****Fuzzy Logic****Code : 19PCSE31****Hrs / Week : 4****Hrs / Sem : 60****Credits : 3****Course Outcome :**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand fuzzy concepts and develop a Fuzzy expertsystem to derive decisions.	2	Un
CO-2	utilize the fuzzy equivalence relations for the classification of remotely sensed data.	3	Ap
CO-3	recognize the feasibility and applicability of the design andimplementation of intelligent systems (that employ fuzzy logic) for specific application areas.	3,6	Re
CO-4	understand fuzzy system design methodology and how itimpacts system design and performance.	2	Un
CO-5	identifying the significant concepts on Fuzzy relations toenhance the appearance of images.	2	Re
CO-6	designing Neuro Fuzzy system model for data clusteringand classification.	6	Cr
CO-7	implementing evidence theory with computational tools fordata analysis.	3,6	Ap
CO-8	understand the Fuzzy measures which provide the framework to examine possibility theory.	2	Un



**SEMESTER – III****Elective I B****Cellular Mobile Computing****Code : 19PCSE31****Hrs / Week : 4****Hrs / Sem : 60****Credits : 3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	gain knowledge in cellular technology with various transmission techniques.	1, 7	Un
CO-2	understand the communication techniques under mobile computing.	1, 7	Un
CO-3	model radio signal propagation issues and analyze their impact on communication system performance	7,3	Cr
CO-4	understand how the various signal processing and coding techniques combat channel uncertainties	7, 1	Un
CO-5	understand the techniques of radio spectrum allocation in multi-user systems and their impact on networks capacity	7	Un
CO-6	evaluate the role of mobile applications in software intensive systems.	3	Ev
CO-7	assess and implement security principles in mobile applications.	7	An
CO-8	appraise the quality and performance of mobile applications.	6	An

SEMESTER – III			
Elective II A		Object Oriented Software Engineering	
Code : 19PCSE32	Hrs / Week : 4	Hrs / Sem : 60	Credits : 3

**Course Outcome:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO-1	design and implement a software system to meet desired needs.	3,6	Cr
CO-2	identify requirements of systems and applications.	3	An
CO-3	use modern software systems and tools.	1,6	Ap
CO-4	understand different software life cycle concept.	7	Un
CO-5	study and design SRS documents for software projects.	3,8	An
CO-6	study and model software projects using different modelling techniques.	3,8	An
CO-7	understand different techniques to map models to code.	7	Un
CO-8	discuss about project organisation and communication.	8	Ev

SEMESTER – III			
Elective II	B	Artificial Intelligence	
Code : 19PCSE32	Hrs / Week : 4	Hrs / Sem : 60	Credits : 3

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	find appropriate idealizations for converting real world problems into ai search problems formulated using the appropriate search algorithm.	1	An
CO-2	understand the fundamentals of knowledge representation (logic-based, frame-based, semantic nets), inference and theorem proving.	3,4	Un
CO-3	demonstrate working knowledge of reasoning in the presence of incomplete and/or uncertain information .	3	Re
CO-4	use a bayesian network to make quantitative (probabilistic) and qualitative inferences	4	Un
CO-5	express programming & simulation for solving problems by applying knowledge representation, reasoning, and machine learning techniques to real-world problems.	2, 6	Ap
CO-6	carry out independent (or in a small group) research and communicate it effectively in a seminar setting .	8	Ap
CO-7	represent difficult real life problems in a state space representation so as to solve them using ai techniques like searching and game playing.	6, 8	Ev
CO-8	develop intelligent algorithms for constraint satisfaction problems and also design intelligent systems	8	Ap

### SEMESTER III

**Self Study Course / MOOC      Professional Ethics**

**Code: 19PCSSS1**

**Credits : +2**

#### Course Outcome:

CO.NO	upon completion of this course, students will be able to	PSO addressed	CL
CO-1	the students will understand the importance of values and ethics in their personal lives and professional careers.	7	Un
CO-2	the students will learn the rights and responsibilities as an employee, team member and a global citizen.	7	An
CO-3	ability to engage in informed critical reflection on the nature of professionalism and ethical challenges inherent in professionalism	4	Ap
CO-4	knowledge of prominent normative ethics frameworks	7	Un
CO-5	awareness of types of ethical challenges and dilemmas confronting members of a range of professions (business, media, police, law, medicine, research)	7	Un
CO-6	ability to bring to bear ethical analysis	7	Ap
CO-7	ability to relate ethical concepts and materials to ethical problems in specific professions and professionalism	7	An
CO-8	ability to research appropriate material in relation to set questions in writing essays meeting the highest standards of rigor and clarity	7	Re



**SEMESTER –I****CORE I DESIGN AND ANALYSIS OF ALGORITHMS****Course Code:21PCSC11****Hrs/week:5****Hrs/Semester:75****Credits:4****Course Outcomes:**

CO.No.	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	understand the running time and space complexity of algorithms using asymptotic analysis.	1	Un
CO-2	apply divide and conquer to binary search, quick sort, merge sort.	1,7	Ap
CO-3	analyze greedy method to knapsack problem, prims, kruskal algorithms.	1,7	An
CO-4	apply dynamic programming to optimal binary search trees,0/1 knapsack problem and different tree traversals	1,7,4	Ap
CO-5	perform Backtracking to n-queen problem, sum of subsets problem, graph coloring etc.	1,7	Ap
CO-6	apply branch and bound to Travelling sales person problem, 0/1 knapsack problem.	1,7	Ap

SEMESTER I			
CORE II DIGITAL IMAGE PROCESSING USING MATLAB			
Course Code: 21PCSC12	Hrs/Week: 5	Hrs/Sem: 75	Credits: 4

**Course Outcomes:**

CO. No.	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	develop programming skills and techniques to solve mathematical problem.	8	Ap
CO-2	learn graphic features of MATLAB and they are able to use this feature effectively in the various applications	6	Ap
CO-3	learn different techniques employed for the enhancement of images.	5	Un
CO-4	interpret Image compression, segmentation and representation standards	7	An
CO-5	choose image filtering in various applications	8	Ap
CO-6	analyze different causes for image degradation and overview of image restoration techniques.	7	An

**SEMESTER – I****CORE III MATHEMATICAL FOUNDATIONS FOR COMPUTER SCIENCE****Course Code : 21PCSC13****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcomes:**

CO. No.	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	test the complementary relationship of skewness with measures of central tendency and dispersion in describing a set of data.	2	An
CO-2	apply 'moments' as a convenient and unifying method for summarizing several descriptive statistical measures.	2	Ap
CO-3	analyze the strength and direction of a linear relationship between two variables using Correlation.	2	An
CO-4	demonstrate how much a dependent variable changes based on adjustments to an independent variable using regression.	2	Ap
CO-5	discover the logical operations and predicate calculus needed for computing skill.	2	An
CO-6	understand the application of various type of graphs in real life problem.	2	Un

SEMESTER –I			
CORE IV		COMPILER DESIGN	
Course Code:21PCSC14	Hrs/week:4	Hrs/Semester:60	Credits:4

**Course Outcomes:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic principles of compiler in high level programming language	1,5	Un
CO-2	represent language tokens using regular expressions, finite automata	5	An
CO-3	apply parsing techniques and able to write Context Free Grammars for various languages	5	Ap
CO-4	apply the knowledge of intermediate code generation to build efficient systems	5	Ap
CO-5	understand the need of intermediate representation for the generation of target code by applying code optimization techniques	5	Ap
CO-6	apply machine independent optimization technique to intermediate code and generate machine code for high level programming language.	5	Ap



**SEMESTER – I****ELECTIVE I      A- ADVANCED COMPUTER ARCHITECTURE****Course Code : 21PCSE11****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcomes:**

CO. No	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	understand the fundamental of computer structure.	5	Un
CO-2	perform computer arithmetic operations.	2	Ap
CO-3	apply the concept of cache mapping techniques.	8	Ap
CO-4	correlate the performance of I/O device	2	An
CO-5	conceptualize instruction level parallelism and Analyze different types of pipeline hazard	7	An
CO-6	analyze performance issues in processor and memory design of a digital computer.	7	An



SEMESTER- I			
ELECTIVE I B- CRYPTOGRAPHY AND NETWORK SECURITY			
Course Code: 21PCSE12	Hrs / week :4	Hrs / Sem: 60	Credits :4

**Course Outcomes:**

CO. No.	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	understand the fundamental concepts of various encryption techniques	6,2	Un
CO-2	demonstrate the process to maintain the Confidentiality, Integrity and Availability of data	6	Ap
CO-3	distinguish between various algorithms for network security to protect against the threats in the networks	4	An
CO-4	apply the concept of Public key cryptography and analyze solutions for effective key management and distribution	2,3	Ap
CO-5	apply and manage to secure a message over insecure channel by various means	6,3	Ap
CO-6	identify and apply the functional IP network security to protect against the threats in the networks and to protect system security	6	Ap

**SEMESTER – II****CORE V****J2EE****Course Code : 21PCSC21****Hrs / Week : 5****Hrs / Sem : 75****Credits : 4****Course Outcomes:**

CO. No.	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	make use of a high-level overview of the J2EE architecture	1	Ap
CO-2	identify the services and components which comprise the J2EE specification	5	Un
CO-3	explain how J2EE technology applications are packaged	5	Un
CO-4	acquire the knowledge of EJB and its types and Differentiate Servlet and JSP	7	An
CO-5	build server side java application called Servlet to catch form data sent from client and store it on database	8	Cr
CO-6	build server side java application called JSP to catch form data sent from client, process it and store it on database.	8	Cr

SEMESTER- II			
CORE VI		DATA MINING & R PROGRAMMING	
Course Code: 21PCSC22	Hrs / week :5	Hrs / Semester: 75	Credits :4

**Course outcomes:**

CO. No.	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	classify different data mining tasks and the algorithms most appropriate for addressing them.	4,5	An
CO-2	discover Strengths & Limitations of Data Mining Methods	5,8	An
CO-3	display interesting patterns from large data, to extract and analyse, make predictions and solve problems	4,8	An
CO-4	evaluate models/algorithms with respect to their accuracy	4	Ev
CO-5	demonstrate capacity to perform a self-directed piece of practical work that requires the application of data mining techniques.	1,4	Ev
CO-6	develop hypotheses based on the analysis of the results obtained and test them.	8	Ev

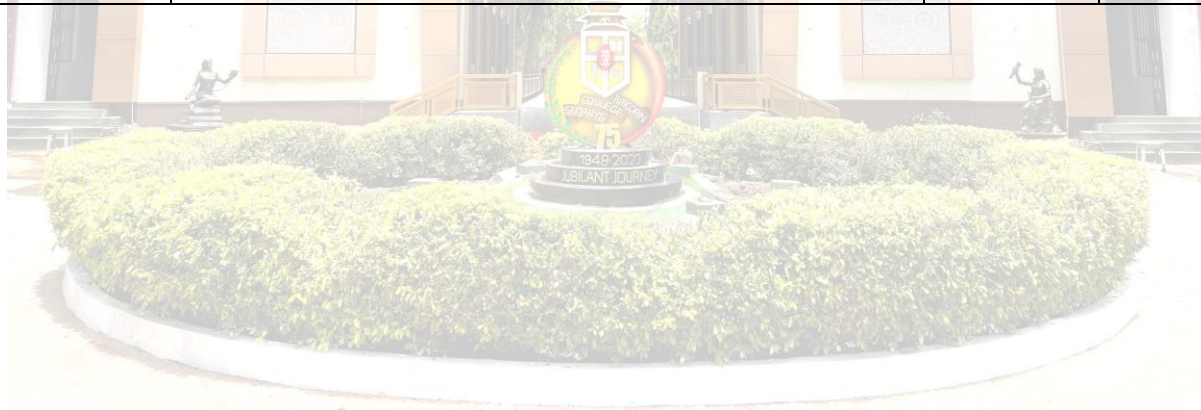




SEMESTER - II			
CORE VII                      DISTRIBUTED DATABASE MANAGEMENT SYSTEM			
CourseCode : 21PCSC23	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcomes:**

CO. No.	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	understand the concept of Distributed DBMS	3	Un
CO-2	apply various architectures of DDBMS and fragmentation techniques in a given problem	8	Ap
CO-3	visualize the steps of query processing	8	Ap
CO-4	compare various Query Optimization Algorithms	7	An
CO-5	organise the approaches to concurrency control in Distributed database	7	An
CO-6	apply various algorithms and techniques for deadlock and recovery in Distributed database	8	Ap



SEMESTER- II			
CORE VIII		SINGLE BOARD COMPUTERS AND IOT	
Course Code: 21PCSC24	Hrs / week :4	Hrs / Sem: 60	Credits :4

**Course Outcomes:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO-1	code program and develop applications using single board computers and to create a good working setup of Raspberry Pi	1,4	Cr
CO-2	understand the concepts of Internet of Things and identifying different IoT technologies	4,3	Un
CO-3	inculcate knowledge on communication middleware and Information security in IoT	6	Un
CO-4	analyze basic protocols in wireless sensor networks	6	An
CO-5	implement State of the Art - IoT Architecture	7	Ap
CO-6	examine the security and privacy issues in IoT	6	An

SEMESTER- II			
ELECTIVE II                      A – ADVANCED COMPUTER NETWORKS			
Course Code: 21PCSE21	Hrs / week :4	Hrs / Semester: 60	Credits :4

**Course Outcomes:**

CO. No.	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	describe the evolution and History of Wireless technology	6	Un
CO-2	analyse the wireless propagation channels.	6	An
CO-3	examine the Performance of ARQ Protocols, Ethernet LAN, Token Ring, RIP, TCP and UDP.	6	Ap
CO-4	identify the networking technologies and implementation of protocols like TCP, UDP and IP using OPNET and NS-2	6	An
CO-5	solve technical problems in ARQ protocols, MAC protocols and Routing Algorithm.	4,6	Ap
CO-6	construct the route discovery algorithm to determine the shortest path in an internet represented as a weighted graph.	2,6	Ap



SEMESTER- II			
ELECTIVE II		B - SOFT COMPUTING	
Course Code: 21PCSE22	Hrs / week :4	Hrs / Sem: 60	Credits :4

**Course Outcomes:**

CO. No.	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	understand the concepts of Artificial Intelligence and neural networks and categorize different learning algorithms	1, 8	Un
CO-2	analyze the classification taxonomy of NN and compare different network models	6,8	An
CO-3	comprehend the fuzzy logic and the concept of fuzziness involved in various systems and fuzzy set theory.	2	Ap
CO-4	implement the concepts of fuzzy sets, knowledge representation using fuzzy rules	2	An
CO-5	identify and define approximate reasoning, fuzzy inference systems, and fuzzy logic	2	An
CO-6	analyze the genetic algorithms and their applications	8	An



Semester III			
CORE IX		SOFTWARE TESTING	
Course Code: 21PCSC31	Hrs / week : 4	Hrs / Sem: 60	Credits :4

**Course Outcomes:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamental concepts and techniques in Software Testing and the categories of the system testing methods	3	Un
CO-2	identify and apply the functional and system testing methods in commercial environment	8	Ap
CO-3	design Test Planning	4	Ap
CO-4	distinguish between methods of judging test case adequacy and how to design tests that will accomplish the obligations of such methods.	7	An
CO-5	demonstrate the process of validation and verification Write code to automate test execution and analysis	8	Ap
CO-6	implement various test processes for quality improvement	8	Ap

**SEMESTER – III****CORE X CLOUD COMPUTING AND BIG DATA****Course Code : 21PCSC32****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcomes:**

CO. No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	carrying out the decisions based on data analytics.	8	Ap
CO-2	analyze the big data analytic techniques for useful business applications.	8	An
CO-3	identifying the data models in relation to Big Data Storage and Analytics.	5,8	Re
CO-4	implementing Big Data applications using Pig and Hive and working with big data platform	5,8	Ap
CO-5	identify the architecture, infrastructure and delivery models of cloud	1,4	Re
CO-6	apply suitable virtualization concept and organize the core issues of cloud computing	1,8	An

SEMESTER III			
CORE XI		DATA SCIENCE USING PYTHON	
Course Code: 21PCSC33	Hrs / week :4	Hrs / Sem: 60	Credits : 4

**Course Outcomes:**

CO. No	Upon Completion of this course, students will be able to	PSO Addressed	CL
CO-1	explore the fundamental concepts of data science	8	An
CO-2	explain how data is collected, managed and stored for data science	5,8	Un
CO-3	evaluate the data analysis techniques for applications handling large data and visualize the inference using various tools	5,8	Ap
CO-4	implement numerical programming, data handling and visualization through NumPy and Pandas	1	Ap
CO-5	understand and demonstrate the usage of universal functions and list of Arrays in NumPy	1	Ap
CO-6	analyze the significance of python program development environment and apply it to solve real world applications	1,7	Un

**SEMESTER – III****CORE XII****RESEARCH METHODOLOGY****Course Code : 21PCSC34****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcomes:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	demonstrate knowledge of research processes	7	An
CO-2	understand the concepts of defining the research problem and research design and compare between methodologies and methods used in research	2,7	Un
CO-3	explain the concepts and procedures of sampling, data collection, analysis and reporting	5,4	Ap
CO-4	assess the basic function and working of analytical research tools used in computer science research	7,8	Re
CO-5	prepare a research report and examine the plagiarism and its types.	7	Ap
CO-6	apply the knowledge of teaching methods for its wide applicability.	1,7	Ap



**SEMESTER- III****ELECTIVE I****A- ORGANIZATIONAL BEHAVIOUR**

<b>Course Code: 21PCSE31</b>	<b>Hrs / week :4</b>	<b>Hrs / Sem: 60</b>	<b>Credits :4</b>
------------------------------	----------------------	----------------------	-------------------

**Course Outcomes:**

<b>CO. No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	analyse the behaviour of individuals and groups in organisations in terms of the key factors that influence organizational behaviour	1, 6	An
CO-2	evaluate personality types, perception and learning process on human behavior	8	Ap
CO-3	analyze the importance of Attitudes, Values, Job satisfaction, Group formation and Group behaviour	1,6	An
CO-4	identify different motivational theories and evaluate motivational strategies used in a variety of organizational settings	6	Un
CO-5	analyze about human stress and the consequences of stress in an organization	6	An
CO-6	identify the various leadership styles and the role of leaders in a decision making process	1,6	Un

**SEMESTER – III****ELECTIVE I      B - OBJECT ORIENTED SOFTWARE ENGINEERING****Course Code : 21PCSE32****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcomes:**

CO. No	Upon Completion of this course, students will be able to	PSOs Addressed	CL
CO-1	design and implement a software system to meet desired needs.	4	Cr
CO-2	use modern software systems and tools.	8	Ap
CO-3	understand different software life cycle concept.	3	Un
CO-4	study and design SRS documents for software projects.	7	An
CO-5	study and model software projects using different modelling techniques.	7	An
CO-6	discuss about project organisation and communication	2	Ev



**Programme: B. A. Economics**

<b>SEMESTER- I</b>			
<b>CORE – I Micro Economics – I</b>			
<b>Code: 18UECC11</b>	<b>Hours / week : 5</b>	<b>Hrs / Sem.: 75</b>	<b>Credits :4</b>

**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	describe and illustrate basic economic concepts of scarcity, choice and opportunity cost	4	Ev
CO - 2	identify and apply relevant terminology and concepts to economic issues and problems	3	Ap
CO – 3	use the theory of consumer choice to explain and to predict consumer behaviour.	5	Cr
CO – 4	understand the broader social consequences of economic decisions making	3	Ap
CO - 5	represent demand and supply, in graphical form, including the downward and upward slope of the demand and supply curves and the shifts in demand and supply curves.	2, 4	Cr
CO – 6	identify the major factors affecting demand for and supply of commodities	4	An
CO – 7	apply the concept of elasticity of demand and supply	4, 3	Ap
CO – 8	analyse the behavioral patterns of different economic agents like consumers and producers	1	An

**SEMESTER- I****Allied I – Principles of Commerce****Code: 18UECA11****Hours / week :3****Hrs / Semester: 45****Credits :3****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	familiarise with basic principles, concepts and perspectives in respect of commerce.	4	Re
CO – 2	evaluate and critically assess the impact of the principles considered on individuals and businesses, from academic, practical and technological perspectives.	1, 5	Ev
CO – 3	take a job in the trade/finance/ insurance organizations and industry with basic commercial know-how	1, 5	Ap
CO – 4	identify the location of plant and the localization of industries	4	Ev
CO – 5	gain the knowledge of the functions of Central and Commercial banks	4	Ap
CO – 6	impart the students the basic requirements to enable them to take up Business as a career.	1, 2, 5	Cr
CO – 7	understand the functions of Stock Exchange	3	Ev
CO - 8	analyse the functions of SEBI	4, 5	Un



**SEMESTER- I****Allied II – Economics of Advertising****Code: 18UECA12****Hours / week : 3****Hrs / Semester: 45****Credits : 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	understand what advertising is and its role in advertising and brand promotion and the economic effects of advertising.	4	Un
CO – 2	create advertisement copy and appreciate the growth of modern advertising	4	Cr
CO – 3	comprehend the role and importance of advertising in society	4, 5	Ev
CO – 4	create and conduct ethically sound and socially responsible advertising strategies and campaigns	1, 4	Cr
CO – 5	identify, analyze, and understand the advertising environment	1, 5	An
CO – 6	prepare the advertising message and fully integrate the creative process.	1	Cr
CO – 7	understand the importance of placing the message in conventional and “new” media.	1, 5	Ev
CO - 8	know the importance of budget and analyse the factors affecting budget.	4	An

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional Ethics – Work Culture – Code of Conduct

**SEMESTER- II****CORE III - Micro Economics -II**

<b>Code: 18UECC21</b>	<b>Hours / week :5</b>	<b>Hrs / Semester: 75</b>	<b>Credits :4</b>
-----------------------	------------------------	---------------------------	-------------------

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	explain how competitive markets organise the allocation of scarce resources and the distribution of goods and services	1, 5	Ap
CO - 2	understand how households (demand) and businesses (supply) interact in various market structures to determine price and quantity of a good produced.	4, 5	Un
CO – 3	explain the factors that affect the production of an individual firm, and the relationship between a firm's productivity and its costs	3, 4, 5	An
CO - 4	understand the meaning of marginal revenue and marginal cost and their relevance for firm profitability	4	Un
CO – 5	describe the behaviour of the profit maximizing firm under various types of market structures: pure competition, monopoly, oligopoly and monopolistic competition	4, 5	Ev
CO –6	deal with the advanced theoretical issues and their practical applications like Theory of Firm, Theories of Distribution.	1, 5	Un
CO – 7	relate the basic economic theory and principles to current microeconomic issues and evaluate related public policy	1, 3	An
CO- 8	describe the incomes earned by the factors of production (land, labour, capital, entrepreneurship) wages, interest, rents, and profit	4	Ev

**SEMESTER- II****ALLIED III - Principles of Marketing****Code: 18UECA21****Hours / week :3****Hrs / Semester: 45****Credits :3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>C L</b>
CO – 1	identify core concepts of marketing and the role of marketing in business and society	4	Un
CO – 2	develop marketing strategies based on product, price, place and promotion objectives.	1, 4, 5	Ev
CO – 3	create an integrated marketing communications plan which includes promotional strategies and measures of effectiveness.	5	Cr
CO – 4	communicate the unique marketing mixes and selling propositions for specific product offerings.	1, 5	Ap
CO – 5	construct written sales plans and a professional interactive oral sales presentation.	1, 4	Cr
CO – 6	formulate marketing strategies that incorporate psychological and sociological factors which influence consumers.	1, 5	Cr
CO – 7	collect, process, and analyze consumer data to make informed marketing decisions	1, 3	Ev
CO – 8	analyze marketing problems and provide solutions based on a critical examination of marketing information	3	An



**SEMESTER- II****Allied IV - Salesmanship**

<b>Code: 18UECA22</b>	<b>Hours / week : 3</b>	<b>Hrs / Semester: 45</b>	<b>Credits : 3</b>
-----------------------	-------------------------	---------------------------	--------------------

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	define salesmanship and evaluate the individual qualities a salesperson must possess to succeed in building long-term customer relationships	1, 4	Un
CO – 2	understand and relate selling with the Principle of Contingency Benefits.	4	Un
CO – 3	identify specific techniques involved in selling, i.e. prospecting, planning and making a sales presentation, negotiating buyer resistance, closing a sale, organizing a territory and managing time.	1, 4, 5	Cr
CO - 4	understand the importance of building partnering relationships with potential customers.	4	Un
CO - 5	examine the ethical and legal issues in selling.	1, 4	Ev
CO – 6	evaluate the important types of information required by a salesperson prior to approaching a sales prospect	1, 4	Ev
CO – 7	demonstrate the ability to identify, analyze, and evaluate the four objectives of an effective sales approach	4, 5	An
CO – 8	evaluate a range of methods for overcoming objections or sales resistance and demonstrate a range of closing techniques used in closing a sale	1, 4	Ev

Semester- III			
Allied V- Statistics – I			
Code: 18UECA31	Hours / week :3	Hrs / Semester: 45	Credits :3

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	enhance knowledge on the concept of statistics and the ways of mobilizing data	1,4,	Ev
CO – 2	gain knowledge on the various methods of presenting data	1,4	An
CO – 3	use appropriate statistical methods in the analysis of simple datasets	1,6	An
CO – 4	use their conceptual knowledge of statistics and statistical computing skills to define problems related to statistics, and guide critical reasoning about research design, data production, and the interpretation of findings.	1,2	An
CO – 5	demonstrate understanding of how to design experiments and surveys for efficiency.	2, 5	Ap
CO – 6	demonstrate the ability to perform complex data management and analysis.	5	Ap
CO – 7	develop skills in presenting quantitative data using appropriate diagrams, tabulations and summaries	1,	Ev
CO – 8	construct and analyze graphical displays to summarize data.	1,6	An

**Semester- III****Allied - VI Mathematical Methods I**

<b>Code: 18UECA41</b>	<b>Hours / week :3</b>	<b>Hrs / Semester: 45</b>	<b>Credits :3</b>
-----------------------	------------------------	---------------------------	-------------------

**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	acquire knowledge about the linkage between mathematical techniques and economics.	1,4	An
CO – 2	provide an understanding of the application of mathematical techniques in economic analysis	1,6	Un
CO – 3	comprehend the role of matrix in Economics	1	Un
CO – 4	understand the types and various operations of matrices.	1	Un
CO – 5	apply the basic concepts of equations in economics.	3	Ap
CO – 6	know and apply the skills of commercial arithmetic in business life.	2, 3	Ap
CO – 7	analyse the application of equations in Economics	6	An
CO – 8	use knowledge of content and mathematical procedures to solve problems and make connections between the different areas of mathematics.	1, 8	An

**Semester- III****Core Skill Based- Entrepreneurial Development**

<b>Code: 18UECS31</b>	<b>Hours / week :4</b>	<b>Hrs / Semester: 60</b>	<b>Credits :4</b>
-----------------------	------------------------	---------------------------	-------------------

**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	have knowledge about attraction for and challenges of an entrepreneur	2	An
CO – 2	understand entrepreneurship scenario in the economy	1	Un
CO – 3	apply how the technology can be utilized to improve industrial performance.	1, 3	Ap
CO – 4	understand different methods that can be used to minimize and certainties at different stages of the entrepreneurial process.	1	Un
CO – 5	consider the legal and financial conditions for starting a business venture,	3	Ap
CO – 6	explain the importance of marketing and management in small businesses venture	1,2	An
CO – 7	know about the internal and external sources of financial planning and apply it's in present day business situations.	1, 3, 5	Ap
CO – 8	detect weaknesses and strengths with in business opportunities and give suggestions how to improve these weaknesses and utilize this strength.	2, 4, 8	Ap



**Semester- III****Non Major Elective I      Tourism and Economic Development****Code: 18UECN31****Hours / week :2****Hrs / Semester: 30****Credits :2****Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand the nature of tourism and explore the reasons for the rapid growth of tourism.	1,2	Un
CO – 2	view how the travel motivators promote social tourism, apply the concept to explore the demand, factors influencing tourism	2, 3	Ap
CO – 3	understand and explore maintenance of tourism products in India and abroad	1,7	Un
CO – 4	assert and apply the method to develop an ideal itinerary and function of tour managers.	1,7	Ap
CO – 5	provide information about tour packages	1	Un
CO – 6	plan, lead and organize the effective and efficient operations through tourism formalities	5, 8	An
CO – 7	know and apply innovative structure in present day tourism operations	1, 7	Ap
CO – 8	analyse and develop the market of tourism product	6,7	An

**Semester- IV****Core VI – Monetary Economics**

<b>Code: 18UECC41</b>	<b>Hours / week :6</b>	<b>Hrs / Sem.: 90</b>	<b>Credits :4</b>
-----------------------	------------------------	-----------------------	-------------------

**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	explain and discuss why people hold money and why it is used in the trading process.	1	Un, Re
CO – 2	know the theoretical building blocks that are needed for an understanding of the monetary theories and solve macro-economic models and assess the role and efficacy of monetary policy for various types of models in both classical and Keynesian set-ups.	2	Ev, Ap
CO – 3	describe and explain the main channels of the monetary transmission mechanism, through which monetary policy can have real effects on the economy.	2	Ap
CO – 4	discuss the merits and disadvantages of different monetary policies used by Central Banks.	4	Un
CO – 5	understand and appreciate the relationship between money and inflation.	1	Un
CO – 6	discuss the present status of monetary policy.	1	Ap
CO – 7	expound the functions and instruments of money market and capital market.	6	Un
CO – 8	develop understanding of the uncertainties policy-makers face and suggest remedies for policy makers to deal with these.	2,6	Un, Cr

**Semester- IV****Allied VII - Statistics II****Code: 18UECA41****Hours / week : 3****Hrs / Sem: 45****Credits :3****Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	understand the basic statistical concepts including measures of central tendency , dispersion , correlation and regression etc.	7	Un
CO – 2	calculate and apply the various measures of central tendency like mean, median and mode etc.	7,8	Ap
CO – 3	compute and interpret correlation and regression analysis.	8	An, Ev
CO – 4	collect and analyse data to support economic decision making using statistical and econometric techniques.	8	An
CO – 5	familiar with variety of examples where statistics helps accurately explain abstract and physical phenomena	1	Un
CO – 6	recognize the importance and value of statistical thinking to solve an economic problem.	2,8	Re
CO – 7	independently read statistical literature of various types including survey articles, scholarly books and online sources.	1,2	Ap
CO – 8	be lifelong learners who are able to expand their statistical expertise when needed or for interest's sake.	7	Cr

**Semester- IV****Allied VIII- Mathematical Methods II**

<b>Code: 18UECA42</b>	<b>Hours / week :3</b>	<b>Hrs / Sem.:45</b>	<b>Credits :3</b>
-----------------------	------------------------	----------------------	-------------------

**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquisition of fundamental mathematical skills that are essential for the study and practice of economics.	8	Un
CO-2	get a good grounding and in-depth understanding of the theory and application of differential calculus.	7	Re
CO-3	acquire an introduction to apply a range of mathematical techniques to economic problems.	2,8	Ap
CO-4	locate maxima and minima for functions of single and several variables and be able to distinguish between them.	7,8	Un, Ap
CO-5	account for the mathematical methods that are used in economics to solve equilibrium and optimization problem	2	An, Ev
CO-6	apply differentiation with respect to marginal concepts relating to cost, revenue and production function.	1,8	Ap
CO-7	learn and understand the application of integration in economics.	1	Un, Re
CO-8	acquire lifelong skills to understand current economics and to investigate economic models using mathematical techniques.	7	Cr



**Semester- IV****Core Skill Based- Women and Economic Development**

<b>Code: 18UECS41</b>	<b>Hours / week :4</b>	<b>Hrs / Sem:60</b>	<b>Credits : 4</b>
-----------------------	------------------------	---------------------	--------------------

**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	create self-awareness about their own biases, fears and comfort levels.	1	Cr
CO – 2	examine the range and issues in the development from the perspective of women and girls.	8	An, Ev
CO – 3	review recent literature on gender and development including how development policies and programs affect women.	1,4	Un
CO – 4	provide a critical eye to gender inequality and how it is addressed in the field of economic development.	2,4	Ev
CO – 5	get an awareness of inequality of privileges and insist them in political participation.	4	Un
CO – 6	learn about women empowerment and ways to achieve it.	5	Un, Re
CO – 7	develop entrepreneurial skills and work more effectively with diverse groups including male-dominated spaces.	3,5	Ap
CO – 8	respond to issues of conflict and confrontation without sacrificing personal power.	6,7	Ap

**Semester- IV****Non Major Elective II    Tourism and Economic Development II****Code: 18UECN41****Hours / week :2****Hrs / Sem.: 30****Credits : 2****Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	recognize and raise awareness for moral issues and dilemmas in tourism.	1	Re
CO - 2	know about various types of tour packages and also about tourism marketing.	2,6	Un
CO- 3	demonstrating knowledge and understanding the basic principles of tourism in all its dimensions and areas.	2,7	Ap
CO-4	identify and evaluate the elements of the tourism system and its interaction with the environment.	1	Ev
CO-5	describing the demand and supply of tourism, cycles and economic growth.	2	An
CO-6	understand the importance of transport and communication in travel tourism and hospitality industry.	1,4	Un
CO-7	understand and disseminate the global code of ethics for tourism	6	Un
CO-8	create an awareness on the economic impact generated by tourism.	1,7	Cr

Semester- V			
Core VIII -Macro Economics- I			
Code: 18UECC52	Hours / week :6	Hrs / Semester: 90	Credits :4

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	explain what economics is and explain why it is important	1,3,6	An
CO - 2	describe the relationships among GDP, net domestic product, national income, personal income and disposable income.	6	An
CO- 3	identify and differentiate the different types of unemployment	3	Ev
CO-4	identify the strengths and weaknesses of the Keynesian and classical model.	2,3,4	Ev
CO-5	explain and graph the consumption function	1, 6	An
CO-6	explain what would cause the consumption function to grow steeper or flatter or to shift up or down	2, 6	An
CO-7	know the multiplier and identify the leakages of multiplier	1,6,8	An
CO-8	understand the acceleration principles	1	Un

Semester- V			
Core IX -Fiscal Economics			
<b>Code: 18UECC53</b>	<b>Hours / week :6</b>	<b>Hrs / Semester: 90</b>	<b>Credits :4</b>

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	differentiate between public finance and private finance	6	Ap
CO - 2	explain tax and non- tax revenue, differentiate between direct and indirect tax, explain shifting of taxation and effects of taxation	1, 2, 6	An
CO- 3	classify the public revenue and its various sources; revenue receipts and non- revenue receipts, understand the tax and non-tax revenue.	1,3	Ev
CO- 4	describe how and in which manner government spends, the causes of increasing public expenditure in the modern economies, explain the varying effects of public expenditure on the economy and role of public expenditure in a developing economy.	2, 3	Ev
CO - 5	identify the measures to reduce public expenditure.	3	Ev
CO - 6	explain the types of public debt and how debt is repaid	1,2,5	An
CO -7	describe the government budget, explain different types of budgets such as balanced and unbalanced budget and know the budgetary procedure.	3	Ev
CO-8	analyse the latest government budget allotment	6,8	An



**Semester- V****Core Integral II - Tourism Economics**

<b>Code: 18UECI52</b>	<b>Hours / week :5</b>	<b>Hrs / Semester: 75</b>	<b>Credits :4</b>
-----------------------	------------------------	---------------------------	-------------------

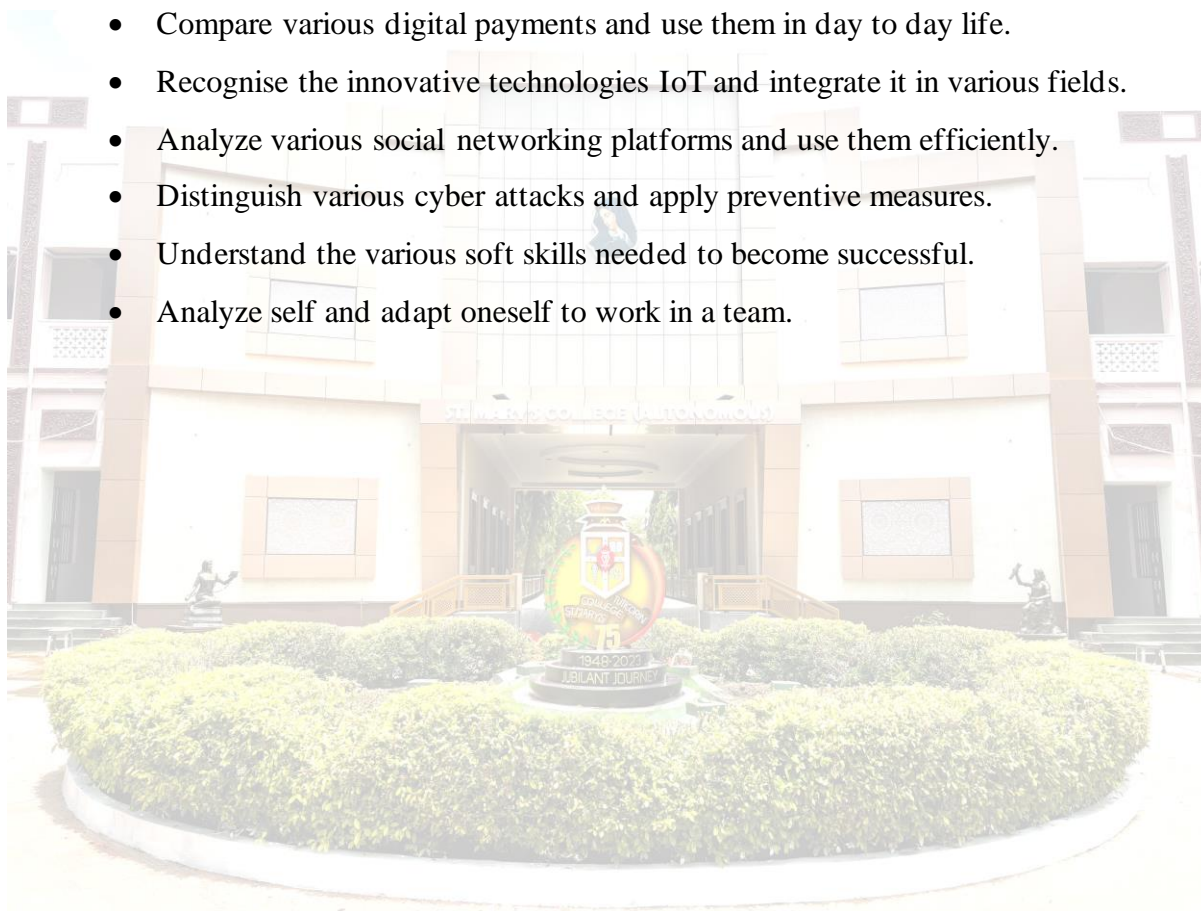
**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	know the structure and scope of tourism industry	1,2	An
CO – 2	demonstrating knowledge and understanding of the basic principles of tourism in all its dimensions and areas.	5	Ap
CO – 3	discuss trends in and analyze problems of supply and demand for tourism services	1,2	Ap
CO – 4	planning and management of projects in Tourism	1,2	Ap
CO – 5	understand the travel agency and its functions	1	Un
CO – 6	plan, lead, organize and control resources for effective and efficient tourism operations.	5,8	Ap
CO – 7	develop and evaluate tourism policy and planning initiatives	7, 4	Ev
CO – 8	analyse the effects of economic policies implemented by the government on the overall performance of the economy and on the tourism sector in particular.	6	An

Semester - V			
Common Skill Based Core		Computer for Digital Era and Soft Skills	
Code : 18UCSB51	Hrs / Week : 2	Hrs / Sem : 30	Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



Semester- VI			
Core –X Macro Economics – II			
<b>Code: 18UECC61</b>	<b>Hours / week :6</b>	<b>Hrs / Semester: 90</b>	<b>Credits :4</b>

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describe theories of distribution	1	Un
CO-2	evaluate macroeconomic performance using indicators that include output measures and unemployment	1, 4	Ev
CO-3	understand the concepts used, methods to measure and difficulties encountered in the calculation of National Income	1, 3	Un
CO-4	identify, compare, and apply key features of Neoclassical and Keynesian economic models.	4	Ap
CO-5	analyse fiscal and monetary policy decisions to counter business cycle swings by using macro-economic models.	6	Un
CO-6	evaluate macroeconomic performance using indicators that include inflation.	1, 2	Ev
CO-7	know about Macroeconomic Policies	1	Un
CO-8	identify the fiscal and monetary policies for internal and external balance	1	Un

Semester- VI			
Core XI– Development Economics			
<b>Code: 18UECC62</b>	<b>Hours / week :6</b>	<b>Hrs / Semester: 90</b>	<b>Credits :4</b>

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of economic growth and development	1	Un
CO-2	know about India's stage of Economic Growth	4	Un
CO-3	identify the Achievements and Failures of Five Year plans in India	1	Un
CO-4	describe the nature and meaning of economic development or underdevelopment, both in general, and as applied to people in specific developing countries.	1	An
CO-5	illustrate how economics can be used to create or analyse alternative approaches to promote development.	4	Ap
CO-6	explain the major development problems, choices and opportunities currently faced by developing countries.	6	Un
CO-7	select, assess and justify specific policy choices that developing countries might make to achieve their economic and social objectives.	1	Ev
CO-8	analyse, synthesise and evaluate information drawn from the available data and appropriate theoretical tools, and to express their ideas orally and in writing.	6	An, Ev



**Semester- VI****Core XI I– Labour Economics**

<b>Code: 18UECC63</b>	<b>Hours / week :6</b>	<b>Hrs / Semester: 90</b>	<b>Credits :4</b>
-----------------------	------------------------	---------------------------	-------------------

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	describe efficiency of Indian labour	1	An
CO-2	know about characteristics & objectives of trade unions	1	Un
CO-3	elaborate the detailed study on worker's participation in management in India	4	Un
CO-4	explain the relationship of the labour market to other markets.	4	Un
CO-5	understand the basic mechanism of the labour market, in particular with how unemployment, wage and productivity differences can arise as equilibrium phenomena.	1	Re
CO-6	perform supply and demand analysis in the labour market.	2	Ap
CO-7	show the causes and changes in the productivity of labour.	4	Ap
CO-8	analyze the effect of labour unions.	3	An

Semester- VI			
Core Integral III - International Economics			
<b>Code: 18UECI61</b>	<b>Hours / week :5</b>	<b>Hrs / Semester: 75</b>	<b>Credits :4</b>

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describing the benefits of international trade and defects	1	Un
CO-2	elaborate the detailed study on balance of trade and balance of payments	4	Un
CO-3	elaborate the procedure to be implemented for GATT, UNCTAD and WTO	1	Ap
CO-4	familiar with the main economic theories and models of international trade.	1	Un
CO-5	aware of the likely distributional consequences of trade and thus of conflicting interests within an economy regarding trade liberalization.	3	Un
CO-6	understand economists' arguments concerning trade policy and its analysis.	4	Un
CO-7	apply economic reasoning to issues of the day surrounding globalization.	6	Ap
CO-8	have an elementary understanding of open-economy macroeconomics and the determinants of exchange rates and the balance of payments.	4	Un

Semester- VI			
Core Integral IV -Energy Economics			
<b>Code: 18UECI62</b>	<b>Hours / week : 7</b>	<b>Hrs / Semester: 105</b>	<b>Credits :7</b>

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	deliver the importance of nature & scope of Energy Economics	1	Un
CO-2	give sound information on ONGC, OPEC, OAPEC, IEA and World Bank.	3	Un
CO-3	prepare and evaluate energy intensity and elasticity	5	Ap
CO-4	understand the basics of energy resources	1	Un
CO-5	understand the classification and importance of energy resources	3	Un
CO-6	know about the consequences and remedial measures of environmental crisis	1	Un
CO-7	know about the impact of energy consumption on production and environment.	4	Ap
CO-8	understand the usage of energy supply and demand	1	Un

Semester- VI			
Core Integral IV–Group Project			
<b>Code: 18UECP61</b>	<b>Hours / week :7</b>	<b>Hrs / Semester: 105</b>	<b>Credits :7</b>

**Vision:** Facilitate quick understanding of complex data.

**Mission:** Applies the research strategy in real life situation

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the research design	4	Un
CO-2	critically assess contributions to the literature.	4, 5	An
CO-3	attain the skills needed to formulate and analyse models used in the particular field of Economics.	5	Ap
CO-4	prepare and present original research papers in the particular field.	4	Cr
CO-5	improve generic skills like oral communication and written communication.	8	Ap
CO-6	perform the interpretation and analysis of data.	3	An
CO-7	originate clarification and present the research report.	4, 5	Ev
CO-8	identify about the universe from a sample	1	Un



SEMESTER- I			
Core - I		MICRO ECONOMICS – I	
Course Code: 21UECC11	Hours / week :5	Hrs / Sem.: 75	Credits :4

**Course Outcomes:**

CO. No	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	describe and illustrate basic concepts such as Nature, Scope and Subject matter of Economics, The basics of Micro Economics and Macro Economics.	2, 4	Un
CO 2	identify and apply the important concepts and terminologies such as Utility analysis, law of demand and consumer surplus.	1,6	Ap
CO 3	understand the application of indifference curves and describe consumer equilibrium with the help of law of equi- marginal utility.	4	Cr
CO 4	analyse the operation of the law of variable proportions and identify the three stages of production	6	Ap
CO 5	state the concept of total product, average product and marginal product; explain the nature and relationship of total, average and marginal product curves;	2, 1	Cr
CO 6	describe the basic economic analysis and laws of production and consumer behaviour	7	An

SEMESTER- I			
Allied – I		STATISTICS –I	
Course Code: 21UECA11	Hours / week :4	Hrs / Semester: 60	Credits :4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	describe and discuss the key terminology, concepts tools and techniques used in statistics. Discuss critically the uses and limitations of statistics.	1	Un
CO 2	gain knowledge on organize, manage and present data. Outline the distinct method of using raw data in the form of frequency distribution	1,2	Ev
CO 3	introduces students to the concepts and techniques of presentation and summarisation of data. It introduces students to basics of sampling and statistical inference	4	An
CO 4	analyse statistical data using measures of central tendency. Apply knowledge of statistical measures such as Mean, Median and Mode for analysis and interpretation of data.	2,4	Un
CO 5	analyse statistical data using measures of dispersion and location. Analyse the different measures of dispersion that are useful in the field of psychology and education	1,6	An
CO 6	develop skills and knowledge to apply different types of data through graphs for analysing different descriptive measures.	4, 5	Cr

**SEMESTER- I****Skill Based Enhancements Course-I Professional English for Economics-I**

<b>Course Code: 21UECA12</b>	<b>Hours / week :2</b>	<b>Hrs / Semester: 30</b>	<b>Credits :2</b>
------------------------------	------------------------	---------------------------	-------------------

**Course Outcomes**

CO No.	Upon completion of discourse, students will be able to	PSO's addressed	CL
CO 1	develop an enhancement of the four basic skills of language – reading, writing, speaking and listening	3,6	Un
CO 2	understand the issues of economy by reading passages about it. Develop knowledge about the agriculture sector of the economy.	2	Ev
CO 3	have increased potential to communicate with accurate grammar and appropriate vocabulary. Develop competency in fields where oral skill is a requisite.	2,6	An
CO 4	have competency in fields where writing skill is a requisite. To have proficiency in writing skills at diverse levels of economy.	5,7	An
CO 5	demonstrate the knowledge of basic concepts in Economics.	2,6	An
CO 6	demonstrate an understanding of the concept, principles and issues in the field of economics.	5,8	Un

## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014



**SEMESTER- II****Core- III****MICRO ECONOMICS –II****Course Code: 21UECC21****Hours / week :5****Hrs / Semester: 75****Credits :4****Course Outcomes:**

CO. No	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	identify and appraise various models of how markets are organized, and the price and output decisions for maximizing profit. Understand the difference between the firm and the industry; explain and illustrate the differences between the demand curve for a perfectly competitive firm and that for a perfectly competitive industry	1, 2	Ap
CO 2	describe characteristics of monopolies and a monopolistically competitive industry. Calculate and graph a monopoly's and monopolistic firm's costs, revenues, profit and losses	2,4	Un
CO 3	design and develop an appropriate wage structure for a firm	1,6	An
CO 4	make the student understand different types of market and levels of competition prevailing in the market.	1,2	Un
CO 5	analyse the relationship between inputs used in production and the resulting outputs and costs	1,5	Ev
CO 6	have a better awareness regarding different Factor Pricing Rent, Wages, Interest, Profit.	6,8	Un

**SEMESTER- II****Allied- II****STATISTICS - II****Course Code : 21UECA21****HOURS / WEEK : 4****HRS / SEM: 60****CREDITS :4****Course Outcomes:**

CO. No	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	explain concept of correlation, analyze and interpret covariance and correlation coefficient, illustrate ordinary least squares and use it to estimate regression coefficient. Find the inter-relation between two or more phenomena with the help of curve fitting and correlation-regression analysis.	4	Un
CO 2	introduce the fundamental concepts of statistical modelling, particularly linear regression models.	1,2	Ap
CO 3	describe the components of time series, apply time series analysis in business scenarios, illustrate the different types of index numbers, and calculate index numbers.	1	An, Ev
CO 4	apply the statistical tools in business, economic and commercial areas with the help of time series, index numbers, etc	1,5	An
CO 5	provide essential knowledge of the theory and key properties of probability and random variables, and the application of these concepts in practical situations.	2,4,5	Un, An
CO 6	made a bridge between the elementary statistical tools and probability theory	1,2	Re

## SEMESTER- II

### Skill Based Enhancements Course - II Professional English for Economics - II

Course Code: 21UECA22	Hours / week :2	Hrs / Semester: 30	Credits :2
-----------------------	-----------------	--------------------	------------

#### Course Outcomes

CO No.	Upon completion of discourse, students will be able to	PSO's addressed	CL
CO 1	Demonstrate knowledge and comprehension of major economic issues	2,4	Un
CO 2	Read a variety of texts critically and proficiently to demonstrate in writing or speech the comprehension, analysis and interpretation of those texts.	2,3	Ev
CO 3	Critically analyze, understand and make an informed critique of economy and different business practices.	1,4	An
CO 4	Think critically and creatively and conceptualize real-world problems from different perspectives.	4,7	Un
CO 5	Recognize and discuss the different concepts in Economics.	1,7	An
CO 6	Provide an in-depth understanding of economy through writing and group discussions.	3,5	Un, Ap

**SEMESTER- III****Core – V                      MACRO ECONOMICS – I****Course Code: 21UECC31   Hours / week :6   Hrs / Sem.: 90   Credits :6****Objectives:**

- To develop the understanding of basic Macro concepts
- To promote critical thinking skills and to analyse impacts of policy actions and to evaluate the advantages and disadvantages of different policies.

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	understand the concepts of Macro Economics and its interrelations with Microeconomics	2, 4	Un
CO 2	compares calculation methods of national income	1, 4,6	Ap
CO 3	describe the relationships among GDP, net domestic product, national income, personal income and disposable income	1, 2,4, 6	Ev
CO 4	categorizes unemployment by types	4,7	Un
CO 5	identify the strengths and weaknesses of the Keynesian and classical model.	2, 4, 5,6	Cr
CO 6	construct and graph the consumption function	4,6	Un



**SEMESTER- III****Allied -III****MATHEMATICAL METHODS- I****Course Code: 21UECA31****Hours / week :4****Hrs / Sem.: 60****Credits :4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	know and apply the skills of commercial arithmetic in business life.	1, 2,4, 5	Un
CO 2	apply the basic concepts of equations in economics.	1, 4,7	Ap
CO 3	acquire knowledge about the linkage between mathematical techniques and economics.	2, 6	Ap
CO 4	use knowledge of content and mathematical procedures to solve problems and make connections between the different areas of mathematics.	6, 7	Un
CO 5	demonstrate the use of mathematical reasoning by justifying and generalizing patterns and relationships	2, 3, 5	Un
CO 6	Explain and apply basic concepts of sets	1, 4	U

**SEMESTER- III****Core Skill Based****TOURISM ECONOMICS- I****Course Code: 21UECS41****Hours / week :4****Hrs / Sem.: 60****Credits :4****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	understand the nature of tourism and explore the reasons for the rapid growth of tourism.	2, 4, 7	Un
CO 2	assert and apply the method to develop an ideal itinerary and function of tour managers.	6, 7	Ap
CO 3	plan, lead and organize the effective and efficient operations through tourism formalities	6, 8	Cr
CO 4	view how the travel motivators promote social tourism, apply the concept to explore the demand, factors influencing tourism	4, 6, 7	Ap
CO 5	better understanding of Travel and Tourism Industry	2	Un
CO 6	understand the place of tourism in the service industry.	2,6	Un

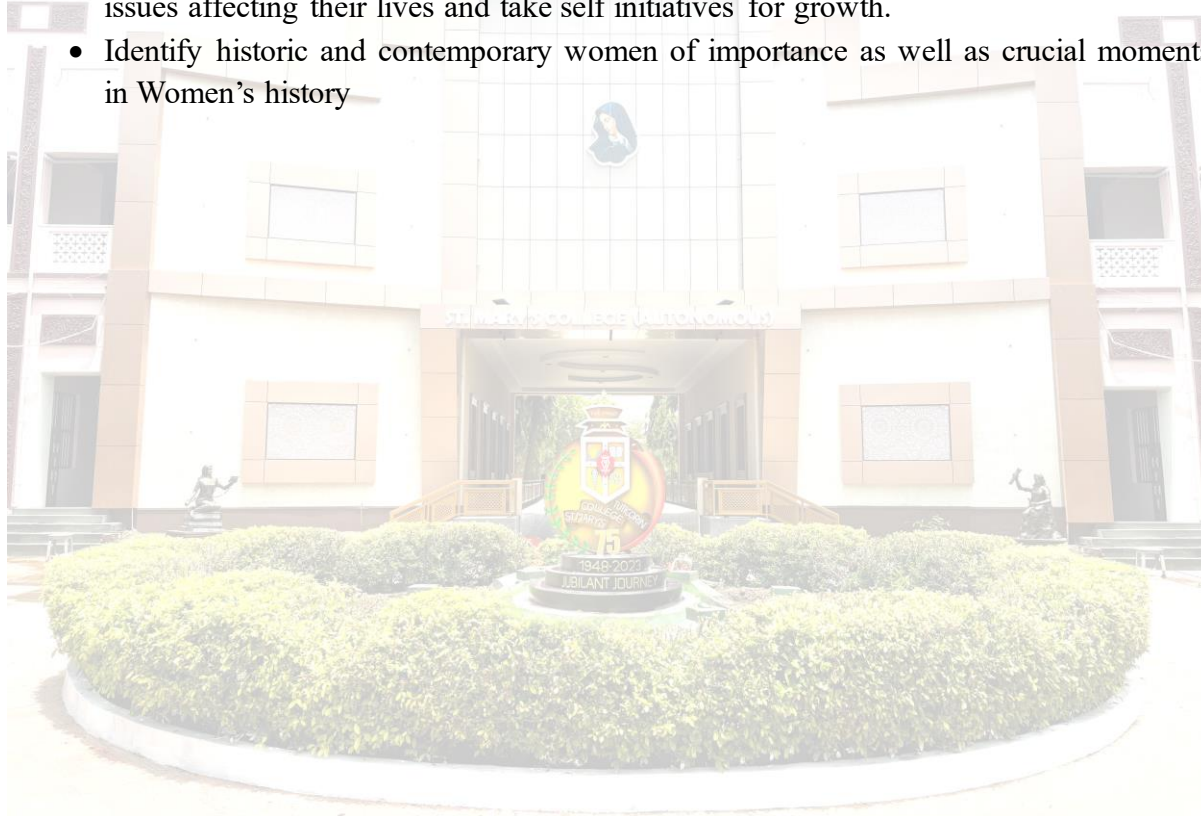
### Semester – III

#### Women's Synergy

<b>Code : 21UAWS31</b>	<b>Hrs/ Week : 2</b>	<b>Hrs/Sem:30</b>	<b>Credits : 2</b>
------------------------	----------------------	-------------------	--------------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER- IV****Core – VI****MACRO ECONOMICS – II****Course Code: 21UECC41****Hours / week :6****Hrs / Sem.: 90****Credits :6****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	know the multiplier and identify the leakages of multiplier	1, 2	Un
CO 2	understand the acceleration principles	2,4	Un
CO 3	analyze different phases of trade cycle, demonstrate various trade cycle theories, understand the impact of cyclical fluctuation on the growth of business, and lay policies to control trade cycle.	2, 4, 6	An
CO 4	describe the business cycle and its primary phases	2,4	Ev
CO 5	compare and contrast the circumstances under which it makes sense to apply the Keynesian and Neoclassical perspectives	4,6, 7	Cr
CO 6	describe the role of financial markets play in an economy.	4,5, 7	Ev



**SEMESTER- IV****Allied -IV****MATHEMATICAL METHODS- II****Course Code: 21UECA41****Hours / week :4****Hrs / Sem.: 60****Credits :4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO 1	understand the foundations of mathematics	1, 4	Un
CO 2	use equations, formulae, and mathematical expressions and relationships in a variety of contexts.	1, 2,4,	Un
CO 3	analyse and demonstrate mathematical skills required in mathematically intensive areas in Economics and business.	4,5,6	An
CO 4	apply the knowledge in mathematics(Matrices, Calculus)in solving business problems.	4,7	Ap
CO 5	acquire an introduction to apply a range of mathematical techniques to economic problems.	1, 5,7	Ap
CO 6	acquire lifelong skills to understand current economics and to investigate economic models using mathematical techniques.	2, 4, 6, 7	Un, Ap

SEMESTER- IV			
Core Skill Based		TOURISM ECONOMICS- II	
Course Code: 21UECS41	Hours / week :4	Hrs / Sem.: 60	Credits :4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO - 1	identify and evaluate the elements of the tourism system and its interaction with the environment.	2,4	Ev
CO - 2	recognize and raise awareness for moral issues and dilemmas in tourism.	4, 5	An
CO - 3	provide information about tour packages	4,5	Un
CO - 4	assert and apply the method to develop an ideal itinerary and function of tour managers.	1, 7	Ap
CO - 5	understand the importance of transport and communication in travel tourism and hospitality industry.	2,4,5	Un
CO - 6	create an awareness on the economic impact generated by tourism.	2,4	Cr

Semester- V			
Core –VIII		Fiscal Economics -I	
Course Code: 21UECC51	Hours / week :6	Hrs / Semester: 90	Credits :4

#### Course Outcomes:

CO. No	Upon completion of this course, students will be able to	PSO's addressed	CL
CO 1	differentiate between public finance and private finance	6	Ap
CO 2	explain tax and non- tax revenue, differentiate between direct and indirect tax. explain shifting of taxation and effects of taxation	2	An
CO 3	classify the public revenue and its various sources; revenue receipts and non- revenue receipts. understand the tax and non-tax revenue.	1	Ev
CO 4	describe how and in which manner government spends. the causes of increasing public expenditure in the modern economies. explain the varying effects of public expenditure on the economy and role of public expenditure in a developing economy.	4	Ev
CO 5	identify the measures to reduce public expenditure.	6	Ev
CO 6	explain the types of public debt and how debt is repaid and analyse the latest government budget allotment.	2, 7	An



**Semester- V****Core - IX****MONEY AND BANKING -I****Course Code: 21UECC52****Hours / week :6****Hrs / Sem.: 90****Credits :4****Course Outcomes:**

CO. No	Upon completion of this course. students will be able to	PSO addressed	CL
CO - 1	able to analyze the theoretical basis and practical implementation of monetary and foreign exchange policy. The adequacy of the current state of the economy and finances of the country and the challenges of development of state and society;	6	Ap
CO - 2	able to assess the effectiveness of implemented monetary and exchange rate policies. Including international benchmarking. Methods of quantifying the money supply, the monetary base and other indicators characterizing the monetary system of the country;	1, 2, 6	An
CO - 3	navigate the legislative and normative acts regulating the circulation of money and the use of instruments in their work;	1.3	Ev
CO - 4	analyze the proposals of the experts. legislators. government and the central bank with respect to monetary policy and to predict the possible consequences of their implementation	2. 3	Ev
CO - 5	deepening the previously obtained knowledge in the field of economic sciences. knowledge and understanding of the functioning of the monetary system and the currency markets. and of theoretical basis of monetary and exchange rate policies;	3	Ev
CO - 6	provide knowledge and skills in the field of economic theory and practice of implementing monetary policy.	1, 2, 5	An



Semester- V			
Core - X INTERNATIONAL ECONOMICS			
Course Code: 21UECC53	Hours / week :5	Hrs / Semester: 75	Credits :4

**Course Outcomes:**

CO. No.	Upon completion of this course, students will be able to	PSO's addressed	CL
CO - 1	describing the benefits of international trade and defects	1	Un
CO - 2	familiar with the main economic theories and models of international trade.	2	Un
CO - 3	get aware of the likely distributional consequences of trade and thus of conflicting interests within an economy regarding trade liberalization.	4	Un & Ev
CO - 4	understand economists' arguments concerning trade policy and its analysis.	7	Un & Ap
CO - 5	apply economics to issues of the day reasoning surrounding globalization	8	Ap
CO - 6	have an elementary understanding of open-economy macroeconomics and the determinants of exchange rates and the balance of payments.	5	Un



Semester- V			
Core Elective		ECONOMICS OF WASTE MANAGEMENT	
Course Code: 21UECE51	Hours / week : 5	Hrs / Semester: 75	Credits :4

#### Course Outcomes:

CO. No.	Upon completion of this course. students will be able to	PSO addressed	CL
CO -1	describe the components of solid waste management and the laws governing it.	1	Un
CO -2	discuss the solid waste collection systems. route optimization techniques and processing of solid wastes.	3	Un
CO -3	outline the design, operation and maintenance of different methods of treatment.	5	Ap
CO -4	explain the operation. and maintenance of sanitary landfill	1	Un
CO -5	examine the operation. and maintenance of Incineration	3	Un
CO -6	conclude the recent trends in reuse of solid waste	1	Un

Semester- V			
Core Elective		ENERGY ECONOMICS	
Course Code: 21UECE52	Hours / week : 5	Hrs / Semester: 90	Credits :4

**Course Outcome:**

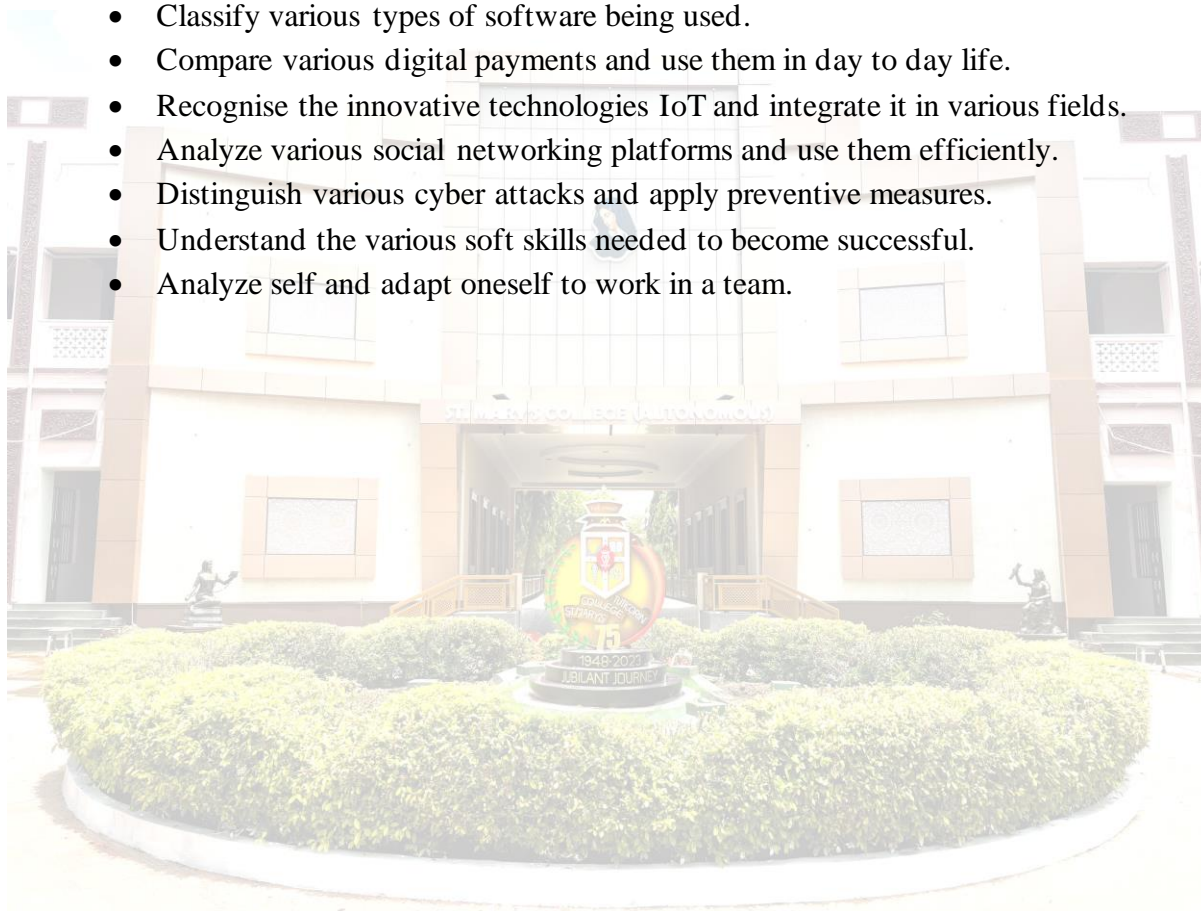
CO. No.	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	deliver the importance of nature & scope of energy Economics	2	Un
CO - 2	give sound information on ONGC. OPEC. OAPEC. IEA and World Bank.	4	Un
CO - 3	understand the basics of energy resources and understand the usage of energy supply and demand.	7	Un
CO - 4	understand the classification and importance of energy resources	6	Un
CO - 5	know about the consequences and remedial measures of environmental crisis	7	Un & Ev
CO - 6	know about the impact of energy consumption on production and environment.	1, 7	Ap



Semester - V			
Common Skill Based Core		Computer for Digital Era and Soft Skills	
Code : 21UCSB51	Hrs / Week : 2	Hrs / Sem : 30	Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.





Semester- VI			
Core XI		FISCAL ECONOMICS -II	
Course Code: 21UECC61	Hours / week :6	Hrs / Semester: 90	Credits :4

**Course Outcome:**

CO. No	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	differentiate public finance and private finance and explain tax and non- tax revenue, differentiate between direct and indirect tax and explain shifting of taxation and effects of taxation	4	Un & An
CO - 2	classify the public revenue and its various sources; revenue receipts and non- revenue receipts. understand the tax and non-tax revenue.	6	Ev
CO - 3	describe how and in which manner government spends, explain the causes of increasing public expenditure in the modern economies. explain the varying effects of public expenditure on the economy and role of public expenditure in a developing economy.	4	Ev
CO - 4	identify the measures to reduce public expenditure and explain the methods to repay public debt.	5, 8	An & Ev
CO - 5	describe the government budget. explain different types of budgets such as balanced and unbalanced budget and know the budgetary procedure.	1, 6	Ev
CO - 6	analyse the latest government budget allotment	2, 5	An

Semester- VI			
Core - XII	MONEY AND BANKING –II		
Course Code: 21UECC62	Hours / week :6	Hrs / Sem.: 90	Credits :4

**Course Outcome:**

CO. No	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	explain and discuss why people hold money and why it is used in the trading process.	2	Un & Re
CO - 2	provides students with theoretical building blocks that are needed for an understanding of the monetary theories and solve macro-economic models and assess the role and efficacy of monetary policy for various types of models in both classical and Keynesian set-ups.	4, 8	Ev & Ap
CO - 3	describe and explain the main channels of the monetary transmission mechanism. through which monetary policy can have real effects on the economy.	5	Ap
CO - 4	discuss the merits and disadvantages of different monetary policies used by Central Banks and discuss the present status of monetary policy.	2, 6	Un
CO - 5	understand and appreciate the relationship between money and inflation.	5	Un
CO - 6	develop understanding of the uncertainties policy-makers face and suggest remedies for policy makers to deal with these.	6	Un & Cr

Semester- VI			
Core -XIII		GROWTH AND DEVELOPMENT	
Course Code: 21UECC63	Hours / week :6	Hrs / Semester: 90	Credits :4

**Course Outcome:**

CO. No.	Upon completion of this course. students will be able to	PSO's addressed	CL
CO -1	understand the concept of economic growth and development and understand India's stage of economic growth.	2	Un
CO -2	identify India's achievements and failures in Five Year plans and describe the nature and meaning of economic development or underdevelopment. both in general. and as applied to people in specific developing countries.	4	Un & An
CO -3	illustrate how economics can be used to create or analyse alternative approaches to promote development.	6	Ap
CO -4	explain the major development problems. choices and opportunities currently faced by developing countries.	7, 8	Un
CO -5	select, assess and justify specific policy choices that developing countries might make to achieve their economic and social objectives.	5	Ev
CO -6	analyse, synthesise and evaluate information drawn from the available data and appropriate theoretical tools. and to express their ideas orally and in writing.	1, 2 & 6	An, Ev



Semester- VI			
Core - XV		Industrial Economics with Internship	
Course Code: 21UECC65	Hours / week :6	Hrs / Semester: 90	Credits :4

### Course Outcomes

CO. No	Upon completion of this course. students will be able to	PSO's addressed	CL
CO - 1	understand Industrial growth and pattern and the role of Industrialization in Economic Development.	2	Un
CO - 2	identify the determinants of Industrial location. Technical, economic, infrastructural and other factors.	4	Ap
CO - 3	have an in-depth knowledge about Industrial productivity. its measurement. Scope and significance.	6	Un
CO - 4	apply knowledge of actual markets and firms within the context of the relevant theories and policies	4	Ap
CO - 5	apply analytical models of firm behaviour and strategic interaction to evaluate various business practices, including tacit collusion, entry deterrence, product differentiation, price discrimination and vertical restraints	1, 2	Ap
CO - 6	analyse various aspects of strategic interaction between firms. Describe and explain the pricing behaviour by firms with market power and its welfare implications	6	Un & Ap



**Programme: M. A. Economics**

Semester– I			
Core I		Advanced Micro Economic Analysis - I	
19PECC11	Hrs/Week: 6	Hrs/ Semester: 90	Credits:4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	identify and apply relevant terminology and concepts to economic issues and problems.	3	Ap
CO-2	compare and contrast the market system of economics with other systems.	4	Ap
CO-3	use demand and supply models in the analysis of real- world issues.	2	Kn
CO-4	use market structure models to explain and to predict business firm behaviour	6	Ap
CO-5	use the theory of consumer choice to explain and to predict consumer behaviour.	5	Kn
CO-6	evaluate the consequences of economic activities and institutions for individual and social welfare.	7	Ev
CO-7	identify the basic features of alternative representations of human behaviour in economics.	4	Ev
CO-8	analysis of the economic behaviour of individuals, firms and markets.	1,3	Ap

Semester– I			
Core II      Advanced Macro Economic Analysis – I			
19PECC 12	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	analysis of the establishment of the functional relationship between the large aggregates.	7	Ap
CO-2	understand the macroeconomic theoretical structure that is considered essential for the proper comprehension of the different issues and policies.	3	Ev
CO-3	study of Macroeconomics and analysis of body of empirical economic knowledge.	6	Ap
CO-4	understand the systemic facts and latest theoretical developments for empirical analysis.	5	An
CO-5	identify the determinants of various macroeconomic aggregates such as output, unemployment, inflation, productivity and the major challenges associated with the measurement of these aggregates.	4	Un
CO-6	discuss the linkages between financial markets and the real economy, and how these linkages influence the impact of economic policies over differing time horizons.	7	An
CO-7	describe the main macroeconomic theories of short term fluctuations and long term growth in the econo	1	Ap
CO-8	critically evaluate the consequences of basic macroeconomic policy options under differing economic conditions within a business cycle.	3	Re

Semester– I			
Core III		Statistics	
19PECC 13	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	increase the skills in describing, analysing and interpreting statistical data	1	An
CO-2	make basic statistical calculations and critically evaluate the basis for these calculations;	8	Ap
CO-3	use graphical and numerical methods to calculate and illustrate descriptive statistics	2	Un
CO-4	identify the statistical concepts in questions about economic models	6	Re
CO-5	identify common problems which may affect regression analyses	4	An
CO-6	identify the appropriate regression model to apply to an economics dataset	5	Ap
CO-7	manipulate the probability models that are most widely used in economics, and apply them correctly and carry out the appropriate statistical analysis	4	An
CO-8	use the basic concepts of probability and Baye's Theorem	6	Un

Semester – I			
Core IV		Economics of Infrastructure	
19PECC 14	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	create well-planned and managed communities with a focus on infrastructure.	3	Ap
CO-2	plan for the impact of climate change on urban growth.	7	An
CO-3	lead whole-of-government approaches to land	8	Ap
CO-4	use, major project developments and infrastructure policy planning, coordination and delivery	4	Un
CO-5	support project proponents—through facilitation services	3	Ap
CO-6	deliver innovative solutions and value for money	5	Re
CO-7	promote public and private investment in infrastructure	7	Un
CO-8	build and protect India's Infrastructures in competitive advantages	8	Ap



Semester – I			
Elective II		Energy Economics	
19PECE12	Hrs/Week: 4	Hrs/ Semester: 60	Credits: 3

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the role of energy in economic activity.	2	Un
CO-2	have a knowledge of methods to assess alternative energy projects technologies, and policies	3	Ap
CO-3	apply this knowledge to the analysis of specific energy issues in India	5	Ap
CO-4	know what key factors and principles need to be considered in evaluating alternative energy policy options.	6	An
CO-5	understand of economic and ability to apply economic and financial evaluation of energy projects.	7	Un
CO-6	learning the basics of cost calculation for electricity and heat production from CHP and power plants	6	Ap
CO-7	provide students with a thorough grounding in the key concepts of energy economics.	5	Re
CO-8	illustrate how these concepts and standard economic tools can be used to analyse energy-related policy issues	7	Un

Semester– II			
Core I                      Advanced Micro Economic Analysis- II			
19PECC21	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

**Course Outcome :**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	identify and apply relevant terminology and concepts to economic issues and problems.	7	Ap
CO-2	compare and contrast the market system of economics with other systems.	6	An
CO-3	use demand and supply models in the analysis of real- world issues.	5	An
CO-4	use market structure models to explain and to predict business firm behaviour	4	Re
CO-5	use the theory of consumer choice to explain and to predict consumer behaviour.	3	Ap
CO-6	students will be able to evaluate the consequences of economic activities and institutions for individual and social welfare.	6	An
CO-7	students will be able to identify the basic features of alternative representations of human behaviour in economics.	3	Ap
CO-8	analysis of the economic behaviour of individuals, firms and markets.	3	Ap

Semester - II			
Core II                      Advanced Macro Economic Analysis- II			
19PECC22	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	analyse of the establishment of the functional relationship between the large aggregates.	2	Un
CO-2	understand the macroeconomic theoretical structure that is considered essential for the proper comprehension of the different issues and policies.	4	Un
CO-3	study of Macroeconomics and analysis of body of empirical economic knowledge.	1	Ap
CO-4	understand the systemic facts and latest theoretical developments for empirical analysis.	5	Un
CO-5	students will be able to identify the determinants of various macroeconomic aggregates such as output, unemployment, inflation, productivity and the major challenges associated with the measurement of these aggregates.	7	Re
CO-6	students will be able to discuss the linkages between financial markets and the real economy, and how these linkages influence the impact of economic policies over differing time horizons.	3	Ap
CO-7	students will be able to describe the main macroeconomic theories of short term fluctuations and long term growth in the economy.	6	An
CO-8	students will be able to critically evaluate the consequences of basic macroeconomic policy options under differing economic conditions within a business cycle.	5	An



Semester – II			
Core VII –Welfare Economics			
Code: 19PECC23	Hrs / Week: 6	Hrs / Semester: 90	Credits : 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the different ways to measure welfare changes for individuals and know how to aggregate them	2	Un
CO-2	be able to properly interpret compensated welfare changes and know how they relate to actual welfare changes typically isolated in demand-supply diagrams	4	Ap
CO-3	understand how to construct models and use general equilibrium analysis	1	An
CO-4	use general equilibrium analysis to evaluate the welfare effects of policy changes in a coherent way and be able to explain the economic intuition for the results	5	Ev
CO-5	be exposed to the applied welfare and public economics literatures and be able to relate the two literatures using conventional welfare economics tools	7	Un
CO-6	solve the problems of proportionality and coherence between objectives and tools in welfare systems.	3	Ap
CO-7	allocate mechanisms to allow for freedom of choice, contestability and competition.	6	Un
CO-8	investigate the distributive and allocate implications of adopting tools to imitate the working of markets	5	Re



**Semester- II****Core –VIII – Mathematics For Economists**

<b>Code: 19PECC24</b>	<b>Hours / Week :4</b>	<b>Hrs / Semester: 60</b>	<b>Credits :3</b>
-----------------------	------------------------	---------------------------	-------------------

**Course Outcome:**

<b>CO. No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	provide for professional cadres in the field of mathematics to support the national development programs within public and higher education institutes.	2	Un
CO-2	encourage scientific research and publications in the accredited scientific publications.	3	Un
CO-3	encourage scientific research and publications in the accredited scientific publications.	5	Ev
CO-4	encourage participation in scientific forums and seminars.	6	Un
CO-5	encourage follow up of latest scientific research and techniques in the field.	7	Ap
CO-6	encourage Scientific all abortion with other related areas such as statistics and mathematics	5	Un
CO-7	establish industry links to develop mathematical models and help the industry.	8	Ap
CO-8	encourage students to conduct student projects to develop their analytical and logical thinking.	3	Ev

Semester –II			
Elective – II		International Economics	
19PECE22	Hrs/Week: 4	Hrs/ Semester: 60	Credits:3

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	develop an in-depth understanding about Import-Export Procedures & Regulations involved.	3	An
CO-2	compare at the level of formal analysis, the major models of international trade and be able to distinguish between them in terms of their assumptions and economic implications.	2	Ap
CO-3	understand the step by step procedures of exporting business	3	Un
CO-4	know the registration requirements to obtain an IEC number to be entitled for export business	3	Un
CO-5	know the ways to arrange finance pre and post shipment for various export obligations	3	Un
CO-6	know the ways for the various export incentives schemes	7	Ap
CO-7	describe how International trade rules could affect your market entry strategy, Customs and distribution.	2	Ev
CO-8	clarify which one are the foreign trade procedures from documentation to payment methods.	2	Ev

Semester - III			
Core IX Growth and Development of Economics			
19PECC31	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO-1	demonstrate theoretical and empirical analysis of economic growth process.	4	Un
CO-2	demonstrate an understanding of economic growth theory, development and policy implications.	7	Un
CO-3	demonstrate an awareness of economic growth problems, issues in globalisation, and provide grounding in major growth strategies and	4	Ap
CO-4	apply empirical analysis of growth models to developing countries and/or regions, and draw appropriate policy recommendations”	1	An
CO-5	analyse empirical evidence on the patterns of economic development.	6	Ev
CO-6	application of Economic Theory in the context of India	8	Ap
CO-7	exposure to Indian Economic Data	4	Ev
CO-8	critical Review of Research Papers	3	Ap

Semester- III			
Core XI		Social Economics	
Code:19 PECC33	Hours / Week :6	Hrs / Semester: 90	Credits :4

**Course Outcome :**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	discuss the structure and functions of the society and the process of social interaction for change towards better human relationships.	1	An
CO-2	describe the roles of philosophy and sociology in education.	2	Ap
CO-3	explain the philosophy of idealism, realism, naturalism and pragmatism and their contributions to educational theory and practice.	7	Un
CO-4	examine the current social problems relating to education in India based on equalization of educational opportunities, education of the backward classes, literacy of girls' education and freedom and discipline.	6	Un
CO-5	develop the educational planning and to create the skill of employment	4	Ap
CO-6	develop the skill of students regarding creating the opportunities of the employment	5	An
CO-7	make the students to aware the socio economic conditions regarding the employment and education	6	Ap
CO-8	create the knowledge to make a difference between the self employment and the sectoral employment	7	Re



Semester - III			
Core XII Research Methodology			
19PECC 34	Hrs/Week: 4	Hrs/ Semester: 60	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand a general definition of research design.	6	Un
CO-2	know why educational research is undertaken, and the audiences that profit from	3	Ap
CO-3	identify the overall process of designing a research study from its	1	Ap
CO-4	be familiar with ethical issues in educational research, including those issues that	8	Un
CO-5	Know the primary characteristics of quantitative research and qualitative research.	2	Ap
CO-6	identify a research problem stated in a study.	8	Ev
CO-7	familiar with how to write a good introduction to an educational research study	6	Ap
CO-8	distinguish a purpose statement, a research question or hypothesis, and a research objective.	4	An

Semester - III			
Elective - I		Marketing Management	
19PECE 31	Hrs/Week: 4	Hrs/ Semester: 60	Credits: 3

**Course Outcome:**

CO.No.	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	develop an ability to understand and develop the marketing mix for an organisation.	2	An
CO-2	develop an ability to assess the impact of the environment on marketing function	2	An
CO-3	develop suitable marketing strategies in light of the environment	1	Ap
CO-4	develop marketing strategies based on product, price, place and promotion objectives.	3	Un
CO-5	create an integrated marketing communications plan which includes promotional strategies and measures of effectiveness.	5	Ev
CO-6	communicate the unique marketing mixes and selling propositions for specific product offerings.	7	Un
CO-7	understanding about marketing management concepts and frameworks, and apply these to a new or existing business.	7	Un
CO-8	apply knowledge and skills to real-world experiences in an internship.	1	Ap

Semester – III			
Elective – I      Computer Application In Economic Analysis			
Code: 19PECE31	Hrs / Week: 4	Hrs / Semester: 60	Credits : 3

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	handle real data with confidence	4	Ap
CO-2	apply econometric methods of analysis to new circumstances	1	Ap
CO-3	understand the conditions under which particular estimators are appropriate	7	Un
CO-4	apply the theoretical methods to numerical data	7	Un
CO-5	write and present technical material lucidly	3	Ap
CO-6	understand the basic theory of the ordinary least squares, generalized least squares and panel data models	2	An
CO-7	apply appropriate estimators to the type of numerical data given in seminar exercises and computing classes	8	Ev
CO-8	interpret empirical results in applied economics literature	6	Un

**Semester- IV****Core XV Financial Institution and Markets****19PECC43****Hrs/Week: 4****Hrs/ Semester: 60****Credits: 4****Course Outcome:**

<b>CO. No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	explain the role of short-term financial management, and the key strategies and techniques used	4	Un
CO-2	describe the dimensions of performance and risk relevant to financial firms.	7	Un
CO-3	calculate contemporary measures of financial measures of performance and risk.	8	Ap
CO-4	describe contemporary managerial risk management oversight processes	1	Ap
CO-5	manage cash, marketable securities, accounts receivable and inventory.	4	Un
CO-6	identify the major sources of short-term financing available to the firm.	2	Ap
CO-7	analyse financial statements using standard financial ratios of liquidity, activity, debt, profitability, and market value.	3	Ev
CO-8	apply techniques to project financial statements for forecasting long-term financial	2	Ap



Semester - IV			
Core XVI		Monetary Economics	
19PECC44	Hrs/Week: 4	Hrs/ Semester: 60	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	explain the role of short-term monetary policy, and the key strategies and techniques used	4	Ap
CO-2	describe the dimensions of performance and risk relevant to financial firms.	7	Un
CO-3	calculate contemporary measures of monetary measures of performance and risk.	8	Ap
CO-4	describe contemporary monetary risk management oversight processes	1	An
CO-5	manage cash, marketable securities, accounts receivable and inventory.	4	Ap
CO-6	identify the major sources of short-term and long term monetary finance available to the firm.	2	Un
CO-7	analyse financial statements using standard financial ratios of liquidity, activity, debt, profitability, and market value.	3	An
CO-8	apply techniques to project financial statements for forecasting long-term financial	2	Un

Semester –I			
Core - I                      ADVANCED MICROECONOMIC ANALYSIS- I			
Course Code: 21PECC11	Hrs / Week: 6	Hrs / Semester : 90	Credits : 4

**Course Outcome:**

CO.No	Upon Completion of this course students will be able to	PSO addressed	CL
CO - 1	identify and apply relevant terminology and concepts to economic issues and problems.	1	Ap
CO - 2	compare and contrast the market system of economics with othersystems	3	Un
CO - 3	use demand and supply modelsin the analysis of real world issues.	5	Ap
CO - 4	use market structure models to explain and to predict businessfirm behavior	6	Ap
CO - 5	identify the basic features of alternative representations of human behaviour in economics.	2	Un
CO - 6	analysis of the economic behaviour of individuals, firmsand markets.	1	Kn



Semester –I			
Core - II ADVANCED MACROECONOMIC ANALYSIS- I			
Course Code: 21PECC12	Hrs / Week: 6	Hrs / Semester : 90	Credits : 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	analysis of the establishment of the functional relationship between the large aggregates.	2	Un
CO - 2	understand the macroeconomic theoretical structure that is considered essential for the proper comprehension of the different issues and policies.	3	Un
CO - 3	study of Macroeconomics and analysis of body of empirical economic knowledge.	1	Kn
CO - 4	identify the determinants of various macroeconomic aggregates such as output, unemployment, inflation, productivity and the major challenges associated with the measurement of these aggregates.	6	Ap
CO - 5	discuss the linkages between financial markets and the real economy, and how these linkages influence the impact of economic policies over differing time horizons	5	Kn
CO - 6	critically evaluate the consequences of basic macroeconomic policy options under differing economic conditions within a business cycle.	4	Ev

Semester– I			
Core - III STATISTICS FOR ECONOMISTS- I			
Course Code: 21PECC13	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO Addressed	CL
CO - 1	increase the skills in describing, analyzing and interpreting statistical data	3	Le
CO - 2	make basic statistical calculations and critically evaluate the basis for these calculations;	1	Kn
CO - 3	use graphical and numerical methods to calculate and illustrate descriptive statistics	5	Ap
CO - 4	identify the appropriate regression model to apply to an economics dataset	5	Ap
CO - 5	manipulate the probability models that are most widely used in economics, and apply them correctly and carry out the appropriate statistical analysis	6	An
CO - 6	use the basic concepts of probability and Bayes Theorem	2	Ap





Semester– I			
Core - IV		LABOUR ECONOMICS	
Course Code: 21PECC14	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

**Course Outcome:**

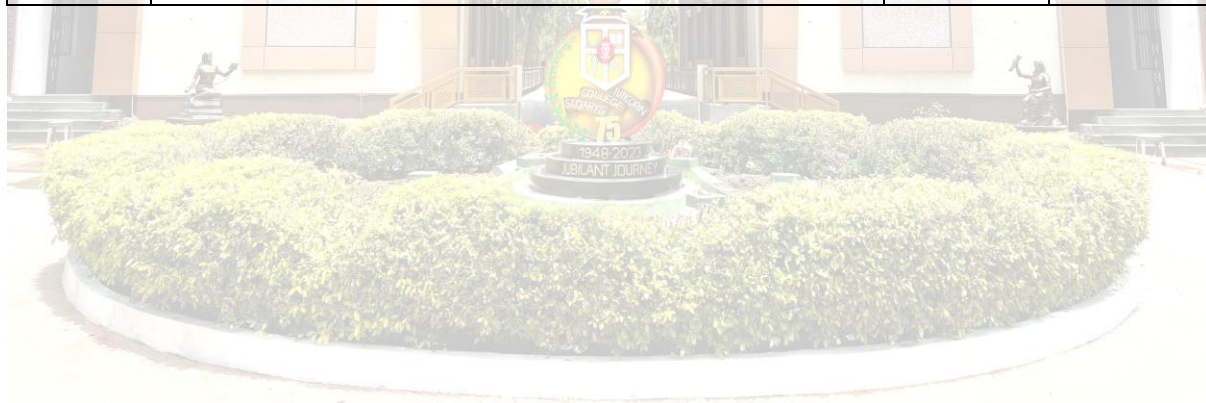
CO. No	Upon Completion of this course, students will be able to	PSO Addressed	CL
CO - 1	understand how labour markets can be analysed from different economic perspectives	3	Un
CO - 2	obtain an understanding of how the experimental method of inquiry can be applied	1	Un
CO - 3	create, integrate and analyse labour data in preparation for bargaining	2	An
CO - 4	describe types and modules of discrimination within the work place	6	Ev
CO - 5	differentiate the collective bargaining environment between the private and public sector of the economy	5	Ap
CO - 6	use the basic concepts of labour economics with the practical laws	1	Ap



Semester– I			
Core - V		ECONOMICS OF FARM BUSINESS	
Course Code: 21PECC12	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	apply economic principles to understand the conduct and performance of agricultural sector.	1	Ap
CO - 2	understand the causes of green revolution.	1	Un
CO - 3	understand role and impact of institutional support to agricultural sector.	3	Kn
CO - 4	be able to demonstrate an awareness of various agricultural market structures.	6	Ap
CO - 5	understand the role of pricing policy in agricultural sector.	5	Ev
CO - 6	develop critical thinking and problem solving skills applicable to farm business and management practices	2	Kn



<b>Semester– II</b>			
<b>Core- VI</b>		<b>ADVANCED MICRO ECONOMIC ANALYSIS- II</b>	
<b>Course Code: 21PECC21</b>	<b>Hrs/Week: 5</b>	<b>Hrs/ Semester: 75</b>	<b>Credits: 4</b>

<b>CO. No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO Addressed</b>	<b>CL</b>
CO - 1	identify and apply relevant terminology and concepts to economic issues and problems.	2	Ap
CO - 2	compare and contrast the market system of economics with other systems.	6	Un
CO - 3	use demand and supply models in the analysis of real-world issues.	1	Kn
CO - 4	use market structure models to explain and to predict business firm behaviour	3	Ap
CO - 5	use the theory of consumer choice to explain and to predict consumer behaviour.	5	Ap
CO - 6	students will be able to identify the basic features of alternative representations of human behaviour in economics.	1	An



Semester – II			
Core - VII		ADVANCED MACRO ECONOMIC ANALYSIS- II	
Course Code: 21PECC22	Hrs/Week: 5	Hrs/ Semester: 75	Credits: 4

### Course Outcome

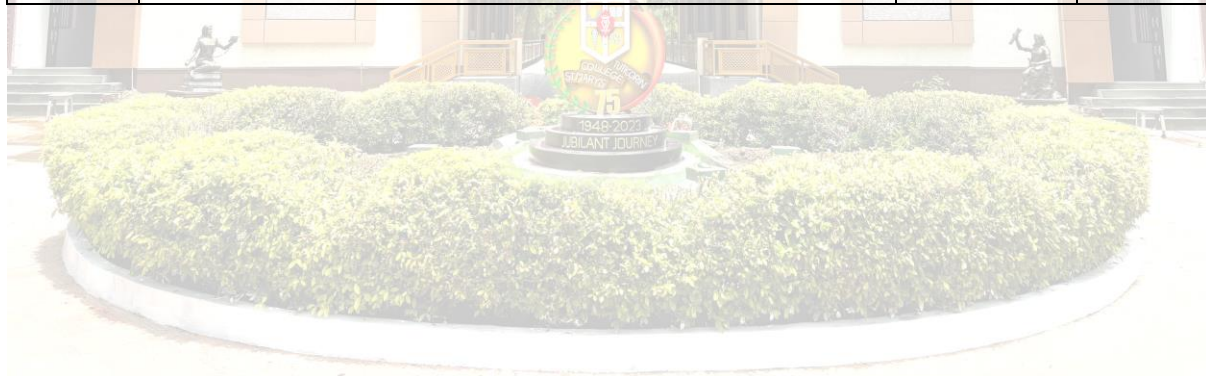
CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	analyse of the establishment of the functional relationship between the large aggregates.	4	An
CO - 2	understand the macroeconomic theoretical structure that is considered essential for the proper comprehension of the different issues and policies.	3	Un
CO - 3	study of Macroeconomics and analysis of body of empirical economic knowledge.	2	Kn
CO - 4	understand the systemic facts and latest theoretical developments for empirical analysis.	1	Un
CO - 5	students will be able to discuss the linkages between financial markets and the real economy, and how these linkages influence the impact of economic policies over differing time horizons.	6	Ap
CO - 6	students will be able to critically evaluate the consequences of basic macroeconomic policy options under differing economic conditions within a business cycle.	2	Ev



Semester – II			
Core - VIII		STATISTICS FOR ECONOMISTS- II	
Course Code: 21PECC23	Hrs/Week: 5	Hrs/ Semester: 75	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	increase the skills in describing, analysing and interpreting statistical data	1	Un
CO - 2	make basic statistical calculations and critically evaluate the basis for these calculations;	4	Ev
CO - 3	use graphical and numerical methods to calculate and illustrate descriptive statistics	7	Kn
CO - 4	identify the statistical concepts in questions about economic models	1	Ap
CO - 5	identify the appropriate regression model to apply to an economics dataset	6	Ap
CO - 6	manipulate the probability models that are most widely used in economics, and apply them correctly and carry out the appropriate statistical analysis	5	Kn



Semester- II			
Core - X INTERNATIONAL BUSINESS			
Course Code: 21PECC25	Hrs/Week: 5	Hrs/ Semester: 75	Credits: 4

### Course Outcome

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	develop communications skill through international trade in reality .	2	Ap
CO - 2	present appropriate techniques to ensure comparability of the measures to accelerate trade.	3	Kn
CO - 3	describe the basic trade rules and regulations in an elaborate way	5	Kn
CO - 4	discuss the key assumptions underlying techniques and tools.	3	Un
CO - 5	describe the relations and calculate indicators in an international trade.	4	An
CO - 6	estimate the rate of change in export and import of India.	6	Ap

**Semester – II****Core Elective - I****FISCAL ECONOMICS****Course Code: 21PECC21****Hrs/Week: 5****Hrs/ Semester: 75****Credits: 4****Course Outcome**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	describe the basic concepts and theories that explain the function and evolution of fiscal economics.	1	Un
CO - 2	demonstrate insight into the properties and role of money and other financial assets within a modern economy.	2	Kn
CO - 3	critically evaluate the functions and operations of fiscal Economics and international financial institutions.	4	Ev
CO - 4	analyse the role of the Fiscal Economy of Indian Status.	3	An
CO - 5	familiarize learners with the vital fiscal policies functions and various banking operations required for smooth functioning of a bank.	6	Ap
CO - 6	inculcate in the participants a comparative understanding of the Traditional and modern functions of fiscal policies.	7	Ap

Semester – III			
Core - XI		HISTORY OF ECONOMIC THOUGHT	
Course Code: 21PECC 31	Hrs / Week: 6	Hrs / Semester: 90	Credits : 4

### Course Outcome

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	debate similarities and differences among different economy schools.	8	Ap
CO - 2	comprehend the development of the theory of economics in historical perspective.	4	Kn
CO - 3	understand the development of economic thought in the context of the evolving global economy.	1	Un
CO - 4	identify the development of economic thought from a historical perspective and how the economic thought of one historical period	2	An
CO - 5	clearly identify how economic theory has developed as a result of the evolution of economic thought.	5	Ev
CO - 6	promote the autonomy of judgment in selecting the most reliable sources of research, in applying a constructive critical approach of the research outcomes	7	Ap



Semester – III			
Core –XIV		RESEARCH METHODOLOGY	
Course Code: 21PECC 34	Hrs/Week: 5	Hrs/ Semester: 75	Credits: 4

### Course Outcome

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	understand a general definition of research design.	1	Un
CO - 2	know why educational research is undertaken, and the audiences that profit from research studies.	2	Kn
CO - 3	identify the overall process of designing a research study from its inception to its report.	3	Un
CO - 4	be familiar with ethical issues in educational research, including those issues that arise in using quantitative and qualitative research	3	Ap
CO - 5	familiar with how to write a good introduction to an educational research study and the components that comprise such an introduction	5	An
CO - 6	distinguish a purpose statement, a research question or hypothesis, and a research objective.	6	Ap

Semester – III			
Core - XV		PUBLIC FINANCE	
Course Code: 21PECC35	Hrs/Week: 4	Hrs/ Semester: 60	Credits: 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	develop written and verbal skills in communicating public finance and economic perspective.	1	Un
CO - 2	describe the effects of taxation on production, distribution and economic stability, role of public expenditure in developing country	3	Kn
CO - 3	increase the student's ability to analyze public finance policies through a deeper understanding of economic behavior and incentives	2	Kn
CO - 4	analyze the fiscal policy practices in the real world using economics methods and tools.	3	An
CO - 5	demonstrate the ability to model public finance issues using fundamental fiscal and economic skills.	5	Ap
CO - 6	understand the possible burden, benefits and distribution of various types of taxes among various classes of people, know the general trend and impact on general welfare and arouse them to suggest good and bad tax system.	3	Ap

Semester - IV			
Core - XVI		MONETARY ECONOMICS	
Course Code: 19PECC 41	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

### Course Outcome

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	explain the role of short-term monetary policy, and the key strategies and techniques used	1	Un
CO - 2	calculate contemporary measures of monetary measures of performance and risk.	2	Kn
CO - 3	describe contemporary monetary risk management oversight processes	3	Kn
CO - 4	identify the major sources of short-term and long-term monetary finance available to the firm.	3	Le
CO - 5	analyse financial statements using standard financial ratios of liquidity, activity, debt, profitability, and market value.	5	An
CO - 6	apply techniques to project financial statements for forecasting long-term financial needs.	4	Ap



Semester- IV			
Core -XVIII		FINANCIAL INSTITUTION AND MARKETS	
Course Code: 21PECC43	Hrs/Week: 6	Hrs/ Semester: 75	Credits: 4

### Course Outcome

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	explain the role of short-term financial management, and the key strategies and techniques used	5	Ap
CO - 2	describe the dimensions of performance and risk relevant to financial firms.	4	Kn
CO - 3	calculate contemporary measures of financial measures of performance and risk.	2	An
CO - 4	apply techniques to project financial statements for forecasting long-term financial needs.	6	Ap
CO - 5	manage cash, marketable securities, accountsreceivable and inventory.	7	Kn
CO - 6	identify the major sources of short-term financing available to the firm.	3	Un





Semester– IV			
Core -XIX		DIGITAL ECONOMY	
Course Code: 21PECC44	Hrs/Week: 6	Hrs/ Semester: 90	Credits: 4

### Course Outcome

CO. No	Upon Completion of this course, students will be able to	PSO addressed	CL
CO - 1	able to know the fundamentals of the digital economy	1	Un
CO - 2	able to evaluate the various challenges that the globalization of digital economy presents	3	Kn
CO - 3	having a framework for analyzing advancement in technological innovation in the global	2	An
CO - 4	development and global scope of digital economy	5	Ap
CO - 5	contemporary and potential challenges arising from global digital transformation	4	An
CO - 6	future opportunities and implications related to digital economy expansion.	7	Ap

**Programme: B. A. English Literature**

<b>SEMESTER – I</b>			
<b>Core – I</b>		<b>Age of Shakespeare and Milton</b>	
<b>18UENC11</b>	<b>Hrs/Week: 5</b>	<b>Hrs / Semester: 75</b>	<b>Credits: 4</b>

**Course Outcome :**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	analyze the structure and rhyme scheme of the sonnets.	1	An
CO-2	develop an appreciation of how the formal elements of language and genre shape meaning.	5	Co
CO-3	practice writing as a process of motivated inquiry engaging other writers' ideas.	6	Ap
CO-4	cultivate their capacity to judge the aesthetic and ethical value of literary texts.	8	Ev
CO-5	recognize how writers can transgress or subvert generic expectations and fulfill them.	3	Un
CO-6	create an aesthetic taste for literary texts.	8	Cr
CO-7	apply the unique qualities of the structure and content of the assigned literary texts by Shakespeare and Milton	4	Ap
CO-8	perceive the unique qualities of the authors studied and compare and contrast them.	4	Ev

**SEMESTER - I****Core - II English Grammar and Usage****18UENC12****Hrs/Week: 5****Hrs/ Semester:75****Credits: 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	perceive the structural meaning of word groups using parts of speech.	3	Ev
CO-2	demonstrate competency in recognizing the tenses. Identify the voice and rewrite the sentences changing the voice.	3,7	Un
CO-3	differentiate the adjectives in comparison and demonstrate the command of conversation using direct and indirect speech.	9	An
CO-4	formulate the structures of English Language using Phrases and Clauses and analyze the transformation of sentences.	7,9	Cr, An
CO-5	construct a well-organized essay with appropriate usage of vocabulary with an effective introduction and conclusion supporting the main topic. Identify the elements of a letter and apply the elements to compose letters.	3,4	An
CO-6	develop knowledge of underlying 'rules' of grammar.	9	Ap
CO-7	improve the skills of structures in written and spoken English and gain confidence.	3	Cr
CO-8	build the mental abilities of reasoning and correct observation.	10	An

**SEMESTER - I****Allied - I****Social History of England****Code: 18UENA11****Hrs/Week: 3****Hrs / Semester: 45****Credits: 3****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	explain the development of science and the age of reasoning.	1	Ev
CO-2	describe the invasion and the expansion of the British colonies all over the world.	4	Ev
CO-3	enumerate the importance of the customs and culture followed by the high class British society.	8	Co
CO-4	relate the war of Americans and French and the development in the industrial field.	2, 4	Un
CO-5	discuss the reforms and the development of education in the modern era.	10	Co
CO-6	demonstrate an awareness of the social, historical and cultural elements of the Centuries.	4,10	Un
CO-7	interpret literary works in a better perspective.	8	Un
CO-8	develop an ability to read text in relation to their historical and cultural context.	1,8	Cr



SEMESTER – I			
Allied - II		Literary Forms	
Code:18UENA12	Hrs/ week: 3	Hrs / Semester: 45	Credits: 3

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	perceive the different genres of Literature.	1	Ev
CO-2	extend the dimensions of Literary forms.	1, 4	Un
CO-3	analyse the meaning of Literary terms.	3, 4	An
CO-4	formulate the exponents of literary genres.	2	Co
CO-5	evaluate one's own perspective in relation to other points of view.	1, 2	Ev
CO-6	distinguish literary texts from other types of texts.	1	An
CO-7	recognize how form and structure shape a text's meaning.	4	Ap
CO-8	demonstrate their ability to explain the influence of genre on a given text.	6	Un

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER - II****Core - III Age of Dryden and Pope****Code: 18UENC21****Hrs/Week: 5****Hrs / Semester: 75****Credits: 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	expose to the representative works of the age.	4, 8	Un
CO-2	enrich the cultural literacy of the characteristic tendency of scientific rationalism.	8	An
CO-3	inculcate the historically represented perspectives and diverse canons of the age.	1	An
CO-4	illustrate the intellectual trends and the philosophical investigations of the age.	4	Un
CO-5	differentiate the various tendencies of the age in connection with the emergence of the novels.	2	An
CO-6	understand various schools of poetry	7	Un
CO-7	understanding of strategies of textual interpretation appropriate to different literary genres	7	Un
CO-8	provide knowledge about the social and political background	3	Kn

**SEMESTER - II****Core- IV****Age of Wordsworth****Code : 18UENC22****Hrs/Week : 5****Hrs / Semester: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	recognize the development of literature and culture of the age.	1	Un
CO-2	introduce the school of Romanticism.	8	Re
CO-3	analyze the significant works of the age.	1, 2	An
CO-4	Identify a writer's thoughts and reflect on points of view that challenge one's perspective.	2	Ev
CO-5	demonstrate an ability to reconstruct the views of the works represented in the age.	1	Un
CO-6	provide knowledge about the social and political background of the age	3	Un
CO-7	develop their introspection by the reading of their prescribed texts.	4,8	An
CO-8	formulate rich vocabulary through their perusal of literary work of art	1	An



## SEMESTER - II

### Allied – III Dramatic Art & Techniques

**Code : 18UENA21**

**Hrs/Week : 3**

**Hrs / Semester: 45**

**Credits : 3**

#### **Vision:**

To cultivate theatrical skills and prepare students for careers in film, stage, television and radio.

#### **Mission:**

To educate and train the students in the skills involved in executing and producing stage plays.

#### **Course Outcome :**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	create love for dramatic works.	7	Cr
CO-2	apply innovative dramatic experiences.	3	Ap
CO-3	develop the ability to create dramatic scripts.	1	Ap
CO-4	build imaginative skills to comprehend the feelings of the people.	4	Ap
CO-5	estimate and assess characters and personalities.	8	Ev
CO-6	prioritize relationships.	3	Ev
CO-7	identify and solve problems.	5	An
CO-8	construct values, co-operation and courageous expression.	3	An

**SEMESTER - II****Allied – IV Children's Literature**

<b>Code : 18UENA22</b>	<b>Hrs/Week : 3</b>	<b>Hrs / Semester: 45</b>	<b>Credits : 3</b>
------------------------	---------------------	---------------------------	--------------------

**Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	recall their childhood experiences and understand the psychology of the children	8	Re
CO-2	extend their empathy towards the issues related to children	10	Un
CO-3	understand life's experiences from a child's perspective	4	Un
CO-4	adapt themselves for a meaningful life with rewarding experiences	2	Co
CO-5	build their capacity for critical thoughts	1	An, Co
CO-6	interpret the texts based on a child's outlook	4	Ev
CO-7	estimate child behaviour across cultures	6	Co
CO-8	compare and contrast childhood experiences with adulthood	8,4	Ev



**SEMESTER – III****Core – V****Age of Tennyson****Code:18UENC31****Hrs/Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	analyse the social and literary history of the Victorian age.	1	An
CO-2	develop an appreciation of trends and movement in Victorian age, through the study of the prose and poetry.	5	Cr
CO-3	practise writing as a process of motivated inquiry engaging other writers' ideas.	6	An
CO-4	cultivate their capacity to judge the aesthetic and ethical value of literary texts.	8	Ev
CO-5	recognize how writers can transgress or subvert generic expectations and fulfil them.	3	Un
CO-6	create an aesthetic taste for literary texts and poems from Alfred Lord Tennyson to G.M Hopkins.	8	Cr
CO-7	render the unique qualities of the structure and content of the assigned literary texts.	4	An
CO-8	perceive the unique qualities of the authors studied and compare and contrast them.	4	Ev

**SEMESTER - III****Allied – V****History of English Literature - I****Code: 18UENA31****Hrs / Week: 3 Hrs****Hrs / Semester: 45 Hrs****Credits: 3****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this Course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	demonstrate an understanding of the functions and historical development of the English language.	4, 10	Un
CO – 2	know the beauty of the coherence of language and literature.	1, 8	Un
CO – 3	become familiar with the important literary figures and the literary works of the period studied.	1, 8	Un
CO – 4	analyze the dominant literary and artistic productions and movements of the early and the modern period.	8	An
CO – 5	understand texts in their cultural and historical contexts.	1, 8	Un
CO – 6	interpret and appreciate the didactic purpose in literature.	8	An, Ev
CO – 7	show insight into the distinctive features of major literary movements and genres.	4, 10	An, Ev
CO – 8	demonstrate an awareness of the social, historical and cultural elements of the centuries.	4,10	Un



**SEMESTER III****Allied VI****Myth in Literature****Code: 18UENA32****Hrs/Week: 3****Hrs/Sem: 45****Credits:3****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO- 1	identify characteristics of myths, folklore	1	Un
CO- 2	describe the different types of myths.	2	Re
CO- 3	analyse the cultural and historical effects of mythological warriors	4	An
CO-4	define what sets apart a hero from the rest of society.	2	Re
CO- 5	appraise the characteristics of gods and goddesses of ancient mythology.	1	Ev
CO-6	relate the cultural effects of mythological systems.	4	An
CO-7	assess how comparative religion is used to compare the themes of sacred myths.	8	Ev
CO-8	understand the use of myths and legends to establish guidelines for living.	8	Un

SEMESTER III			
Skill Based Elective		Employability Skills	
Code: 18UENS31	Hrs/Week: 4	Hrs/Semester: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	create an ability to work constructively with others on a common task.	2	Cr
CO-2	analyse own strengths and weaknesses, aims and values.	10	An
CO-3	analysing and responding positively to changing circumstances	1,3	An
CO-4	predict appropriate methods to find solutions	3,5	Co
CO-5	discuss and achieve mutually satisfactory resolution of contentious issues	1,2	Co
CO-6	become original or inventive and apply lateral thinking	3	Ev
CO-7	create an ability to take action unprompted	5	Cr
CO-8	assess the tasks and rank according to the importance	8	Un

**SEMESTER - III****Non- Major Elective I****Functional English – I****Code: 18UENN31****Hrs/Week: 2****Hrs/ Semester: 30****Credits: 2****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	improve and apply the conventions of academic writing in English.	1	Un, Ap
CO-2	learn the meaning of new vocabulary and use them in speaking and writing.	1	Cr
CO-3	develop insight into the structure of English language.	3	An
CO-4	understand the fundamentals of Grammar.	3	Un
CO-5	provide an account of basic phonology theory.	7	Ap
CO-6	apply their knowledge of English phonetics to improve their pronunciation.	3,7	Ap
CO-7	demonstrate the ability to transcribe speech.	8,9	Un
CO-8	sharpen the writing skill and train them to write clearly, coherently and cohesively.	2,3	An, Cr

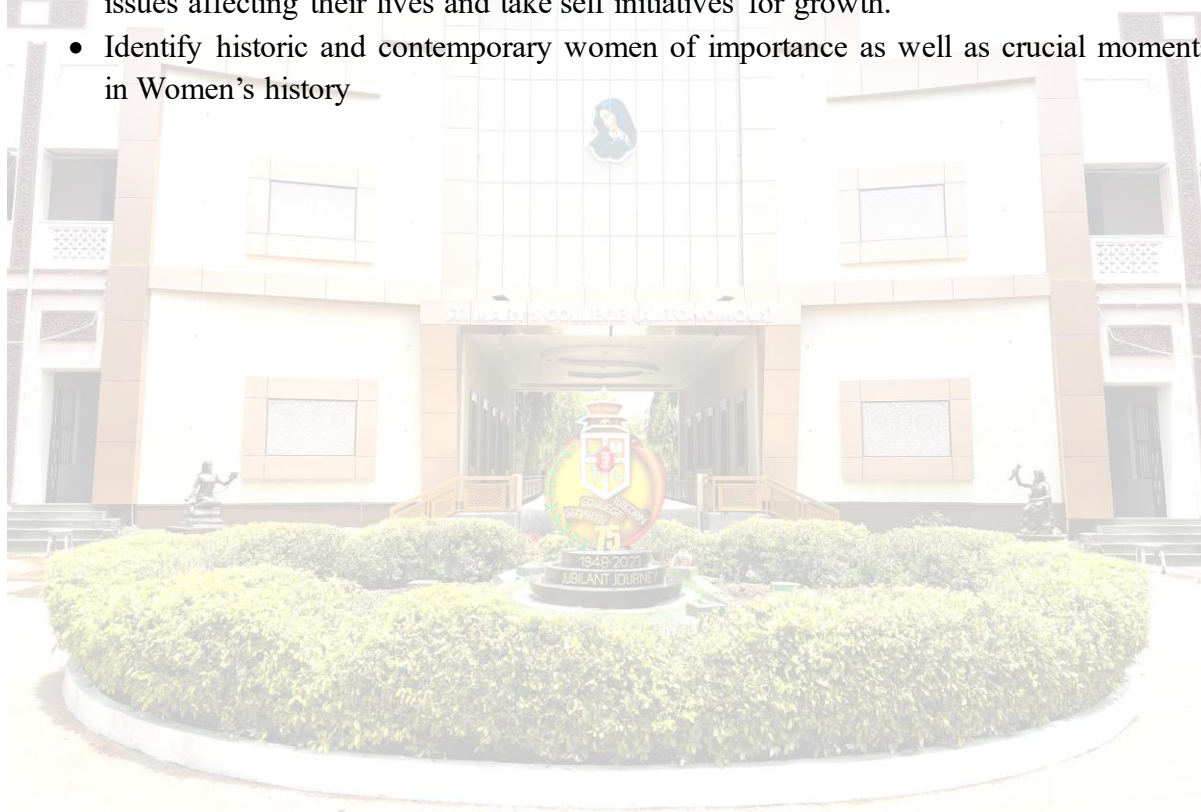
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





**SEMESTER – IV****Core – VI****Twentieth Century British Literature****Code:18UENC41****Hrs/Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify various forms and types of poetry.	1	An
CO-2	develop an appreciation of literature to gain an understanding of the social and literary background of England in the Twentieth Century.	5	Cr
CO-3	Understand and appreciate the literary features of the century	6	An
CO-4	cultivate their capacity to judge the aesthetic and ethical value of literary texts.	8	Ev
CO-5	analyse and appreciate fiction and the enrich their knowledge about diverse fictional forms in prose.	3	Un
CO-6	create an aesthetic taste for literary texts and poems from Alfred Lord Tennyson to G.M Hopkins.	8	Cr
CO-7	gather a general awareness about the Victorian Age and the social milieu of early and mid twentieth century.	4	An
CO-8	to understand and appreciate the basic concepts of style and literary devices in prose.	4	Ev

**SEMESTER - IV****Allied – VII****History of English Literature - II****Code: 18UENA41****Hrs/Week: 3 Hrs****Hrs/Semester: 45 Hrs****Credits: 3****Course Outcome:**

CO. No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO-1	demonstrate an understanding of the functions and historical development of the English language.	4, 10	Un
CO-2	know the beauty of the coherence of language and literature	1, 8	Un
CO-3	become familiar with important literary figures and literary works of the period studied.	1, 8	Un
CO-4	analyse the dominant literary and artistic productions and movements of the early and the modern period	8	An
CO-5	understand texts in their cultural and historical contexts.	1,8	Un
CO-6	interpret and appreciate the didactic purpose in literature	8	An, Ev
CO-7	show insight into the distinctive features of major literary movements and genres.	4, 10	An, Ev
CO-8	demonstrate an awareness of the social, historical and cultural elements of the centuries.	4,10	Un, An

**SEMESTER - IV****Core Skill Based****English for Proficiency****Code: 18UENS41****Hrs/Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	perceive the nuances involved in proficiency exams.	10	Ev
CO-2	enrich themselves with the aspects of Grammar.	1	Un
CO-3	improve their vocabulary.	1	Cr
CO-4	develop English Language Skills.	1	Cr
CO-5	apply strategies to comprehend words and ideas.	7	Ap
CO-6	acquire an in depth knowledge of the skills essential for professional mastery.	7	Un
CO-7	develop reading and writing skills	1	Cr
CO-8	improve communicative competency and thereby enhance personality	5	Un

**SEMESTER – IV****Non- Major Elective II****Functional English – II****Code: 18UENN41****Hrs/Week: 2****Hrs / Semester: 30****Credits: 2****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	improve and apply the conventions of academic writing in English.	1	Un, Ap
CO-2	learn the meaning of new words and use them in speaking and writing.	1	Cr
CO-3	convert their passive vocabulary into active one; enhancing their speaking and writing skills.	7	Ap
CO-4	gain proficiency in writing skills	4	Un
CO-5	organise ideas logically and to present them appropriately in various situations of communication.	5	An
CO-6	apply their knowledge of English phonetics to improve their pronunciation.	5	Ap
CO-7	practise the unique qualities of professional rhetoric and writing style.	1	Un
CO-8	analyse and use the formal elements to write a report.	6	An, Cr



**SEMESTER – V****Core VIII****Essentials in Shakespearean Writings****Code : 18UENC52****Hrs/ week : 6****Hrs/ Sem : 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon successful completion of this course students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquaint with Shakespeare's dramatic and poetic genius.	8	Un
CO-2	identify the distinct features of the literary genres of Shakespeare's works.	2	Ev
CO-3	trace the development of Elizabethan theatre.	2,8	Un
CO-4	analyse Shakespeare's works in the modern context.	1,8	An
CO-5	analyse how a writer's tone and voice influence audiences' perception.	1, 2	An
CO-6	find out the difference between the English used during the Elizabethan Age and today.	7	Un
CO-7	understand the universal appeal of Shakespeare's works	8	Un
CO-8	involve themselves in creative writing.	6	Cr

**SEMESTER V****Core IX American Literature****Code: 18UENC53****Hrs/Sem:90****Hrs/Week: 6****Credits:5****Course Outcome:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	highlight the important social condition of each period in order to understand the authors.	1	Re
CO-2	understand the important features of American literature.	2	Un
CO-3	identify and interpret the representative works of American writers.	2	Un
CO-4	assess the significant themes in American Literature.	4	Ev
CO-5	appraise the literary devices employed by the major writers.	2	Ev
CO-6	interpret the historical perspective of American Literature.	4	Un
CO-7	review the dimensions of American literature in the universal context.	8	Ev
CO-8	formulate imagination to a wider range of voices across cultures.	8	Cr

**SEMESTER V****Core Integral I****Literary Criticism****Code:18UEN151****Hrs/Week: 5****Hrs/Sem: 75****Credits:4****Course Outcome:**

<b>C.O. No.</b>	<b>Upon Completion of this course students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	practise critical thinking and devise novel ideas.	1	An
CO-2	develop critical sensibility and impart basic knowledge of criticism.	2	An
CO-3	interpret literary compositions to shape their perceptions of the world .	4	Ap, Un, Ev
CO-4	acquaint with the classical and modern theories to compete in the world of higher learning.	5	Un
CO-5	develop literary taste to articulate original ideas.	2	An
CO-6	view literary texts with a critical outlook to compete in the global market.	5	Ev
CO-7	acquaint with the factors involved in criticism like interpretation, elucidation, judgment and appreciation.	1	Un
CO-8	evaluate any work of art to higher perception.	4	Ev

**SEMESTER-V****Core Integral II      Phonetics : Theory and Practice****Code : 18UENI52****Hrs/ week :5****Hrs/ Sem : 75****Credits :4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	discuss in detail the production and articulation of Speech Sounds	3, 7	Un
CO-2	construct the vowel and consonant sounds using Phonetic symbols	7	Ap
CO-3	understand correct Stress and Intonation pattern	3,9	Un
CO-4	enumerate transcription to improve Speech Sounds	3,7	Ap
CO-5	acquire good LSRW skills to foster effective oral and written communication	3,5	Ev
CO-6	articulate standard pronunciation of English words	1, 7	Ap
CO-7	better accentuation and effective communication	5	Ap
CO-8	understand and analyse variations in speech sounds	3	Ap



## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

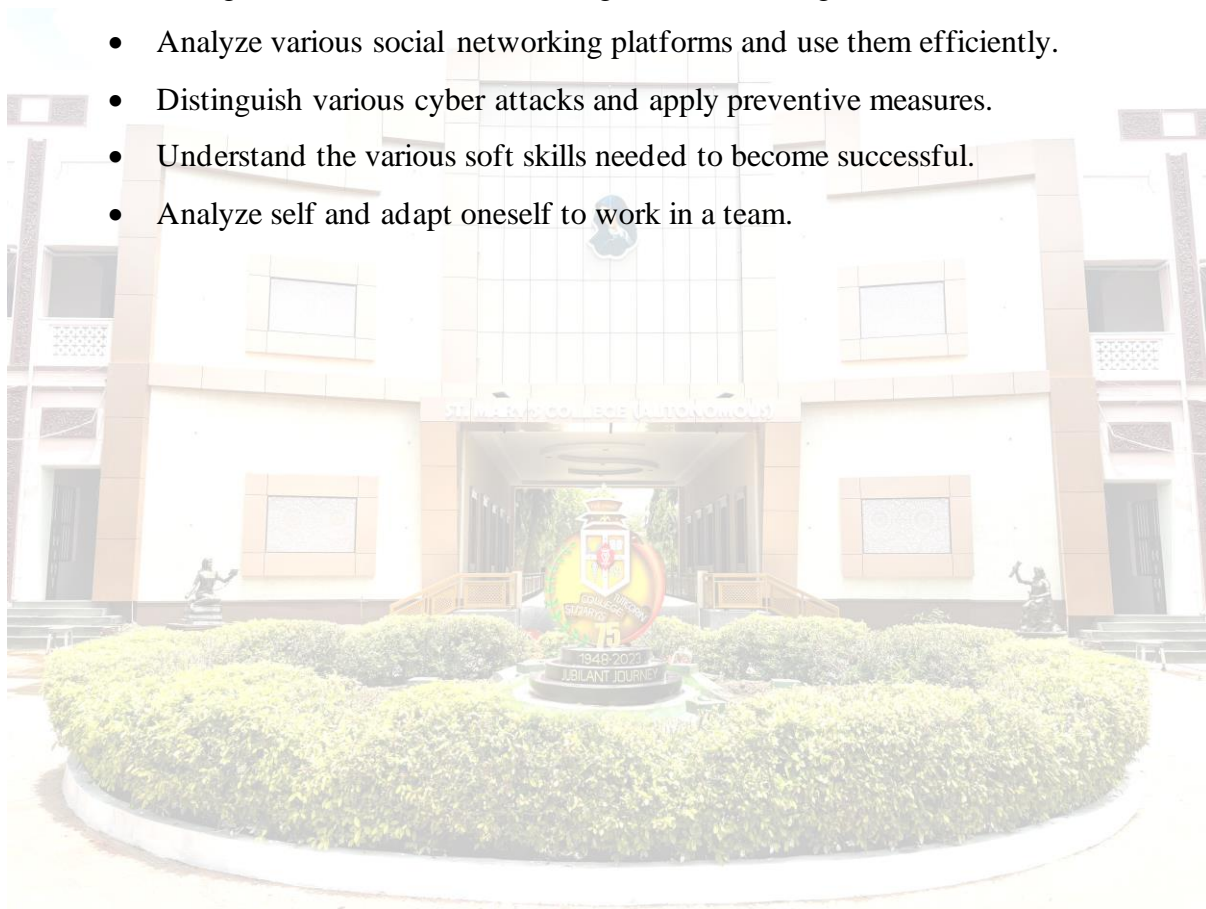
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



**SEMESTER VI****Core XI****Women's Writing****Code: 18UENC62****Hrs/Week: 6****Hrs/Sem: 90****Credits: 4****Course Outcome:**

CO No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO – 1	understand the role of women in Literature	2	Un
CO – 2	recognise the biased social structure of women in the modern era.	3	Un
CO – 3	interpret women's writings across cultures.	3, 5	Ap
CO – 4	analyse the artistic and intellectual contributions of women to literature.	8	An
CO – 5	identify the marginalization of women in society.	8	Un
CO – 6	analyse gender perspectives in writings	3	An
CO – 7	construct their Identity.	4	Cr
CO – 8	appraise the multi-faceted personality of women.	2,6	Ev

**SEMESTER-VI****Core XII****New Literatures in English****Code : 18UENC63****Hrs/ week :6****Hrs/ Sem : 90****credits :4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquire knowledge about contemporary literature across cultures.	1, 2	Un
CO-2	recognize similarity of experiences of Post-Colonial writers	8	Un
CO-3	identify the various themes presented in New Literatures in English.	1	Ap
CO-4	appreciate the diversity of literary and social voices.	1, 2	Ev
CO-5	develop a penchant for New Literatures in English.	1, 8	Cr
CO-6	understand texts in their cultural and historic contexts.	4	Un
CO-7	develop a critical understanding of how literature can both uphold and resist existing structures of power.	8, 10	Un
CO-8	critically analyse different literary texts across cultures	8	An

**SEMESTER-VI****Core Integral III****World Classics****Code : 18UENI61****Hrs/ week :6****Hrs/ Sem : 75****Credits :4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	relate to the ideologies and psychological impact of diverse people through the classics	1	Un
CO-2	appraise literary texts of great masters	2, 3	Ev
CO-3	analyze the rhetorical pattern and themes of the classics	1,2	An
CO-4	compare and evaluate Literature of diverse cultures	2	Ev
CO-5	improve the skill of analyzing the language used in prose and poetry.	3,7	An
CO-6	evaluate the text against its socio-cultural historic background	1, 8	Ev
CO-7	analyse the literary devices and techniques in different genres of the classics	1	An
CO-8	develop a critical analyses of translations	4, 8	Ev



**SEMESTER VI****Core Integral IV****Diasporic Literature****Code: 18UENI62****Hrs/Week: 6****Hrs/Sem:90****Credits:4****Course Outcome:**

<b>Co. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	highlight the important social condition of each culture in order to understand the authors.	1	Re
CO-2	understand the important features of diasporic literature.	2	Un
CO-3	identify and interpret the representative works of the writers of diaspora.	2	Un
CO-4	assess the significant themes in diasporic literature.	4	Ev
CO-5	appraise the literary devices employed by the major writers.	2	Ev
CO-6	interpret the historical perspective of diasporic literature.	4	Un
CO-7	review the dimensions of diasporic literature in the universal context.	8	Ev
CO-8	formulate imagination to a wider range of voices across cultures.	8	Cr



SEMESTER – I			
Core II		English Grammar and Usage	
Course Code: 21UENC12	Hrs/Week: 5	Hrs/Semester: 75	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course students will be able to	PSO addressed	Cognitive Level
CO-1	understand the basic functions of the different parts of speech.	2	Un
CO-2	analyse the usage of various tenses.	6	An
CO-3	employ different kinds of sentences in the oral and written communication.	1,7	Un, Ap
CO-4	apply degrees of comparison in the appropriate context.	3	Ap
CO-5	synthesise the structure of the sentence.	1	Ev
CO-6	construct well-organized essays with appropriate usage of grammar and vocabulary with an effective introduction and conclusion, supporting the main topic.	7,8	Cr

SEMESTER – I			
Allied – I		Social History of England	
Course Code :21UENA11	Hrs/ week: 4	Hrs / Semester: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO -1	develop an awareness of the social, historical, religious and cultural politics of England.	1,4	Un
CO - 2	understand the social changes within the country and its relationship with other nations.	4	Un
CO - 3	analyse the causes and consequences of civil war and American independence	5	An
CO - 4	analyse the major trends that shaped the English society and identify the key themes which encapsulate the period and review the reforms and developments of education in the modern era.	5	An
CO - 5	evaluate the invasion and expansion of the British colonies all over the world, across culture	2	Ev
CO - 6	evaluate the effects of the revolutions and their impacts on society	1	Ev



**SEMESTER – I****Skill Enhancement Course – I      Professional English – I****Course Code :21UENPE1****Hrs / Week : 2****Hrs / Sem : 30****Credits : 2****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	refine written and verbal communication skills.	1	Un
CO-2	speak confidently in any professional environment.	1,3	Ap
CO-3	face interviews with confidence.	1,3	Ap
CO-4	analyse and comprehend unfamiliar texts.	7	Ap
CO-5	develop strategic competence through efficient listening.	3,7	Ap, Cr
CO-6	construct error free sentences for content writing.	3,7	Ap, Cr

## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

## SEMESTER – II

### Core – III Age of Restoration and Transition (1660 – 1770)

Course Code: 21UENC21	Hrs/Week: 5	Hrs / Semester: 75	Credits: 4
-----------------------	-------------	--------------------	------------

#### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	remember the historical perspective and the representative writers of the age.	2	Re
CO-2	acquire knowledge of the social and political background.	2	Un
CO- 3	understand the various movements of the age.	2	Un
CO- 4	understand the various aspects of literary genres.	2,6	Un
CO- 5	analyse the distinctive features of the age.	6	An
CO-6	analyse the cultural legacy of the age.	6	An

**SEMESTER - II****Core - IV****Romantic Age (1770-1830)****Course Code : 21UENC22****Hrs/Week : 5****Hrs / Semester : 75****Credits : 4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	recognise the development of literature and culture of the age.	2, 6	Un, An
CO-2	understand the school of Romanticism and analyse the significant works of the age.	2, 5	Un, An
CO-3	gain knowledge about the social and political background of the age.	4, 6	Un, An
CO-4	practice the ethical values gained from the works of art.	8	Ap
CO- 5	develop introspection into the literary and artistic movement of the age	1	Un
CO-6	identify the writers' thoughts and points of view and reflect from one's own perspective	5	Ev



SEMESTER – II			
Allied – II		Literary Forms and Terms	
Course Code : 21UENA21	Hrs/ week: 4	Hrs / Semester: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO -1	comprehend the dimensions of literary forms.	2	Un
CO - 2	distinguish and differentiate different literary terms and apply wherever necessary.	1	Un
CO - 3	recognise how form and structure shape the meaning of a text.	5	Ap
CO - 4	identify, analyse and interpret the different genres of literature.	4	An
CO - 5	evaluate one's own perspective in relation to various forms of literature.	6	Ev
CO-6	formulate literary creations of their own and emerge as educators.	1	Ev

**SEMESTER – II****Skill Enhancement Course – II Professional English - II****Course Code : 21UENPE2 Hrs / Week: 2 Hrs / Sem: 30 Credits: 2****Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSOs addressed	Cognitive Level
CO-1	understand the theoretical and practical components of professional English and soft skills.	1, 3	Un, An
CO-2	write advertisements, create web pages, business e-mail / video logs, etc.	3, 7	Ap, Cr
CO-3	use power point and make oral presentations.	7	Cr
CO-4	write minutes and reports.	7	Cr
CO-5	build a strong professional vocabulary which can be effectively used in different platforms.	7	Cr
CO-6	write creative and innovative script for short films, blogs, flyers, brochures and posters.	8	Cr



SEMESTER – III			
Core V		Victorian Age (1837-1901)	
Course Code:21UENC31	Hrs/Week: 6 Hrs	Hrs/ Semester: 90	Credits: 6

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	have a comprehensive knowledge of the principles of Victorian society characterized by class based society with its gender and race	4	Un
CO-2	comprehend, categorize and distinguish the representative writers of the age along with the working class cultures	4	An
CO-3	review a work with its relationship to the Victorian scientific development, its continued aggressive expansion and its significant migration	4	Ap
CO-4	perceive the unique qualities of the author studied and analyse the text with their socio-economic and literary background	6	Ap
CO-5	evaluate the ethical values in the literary texts to evolve as better citizen	5	Ev
CO-6	create an aesthetic taste for literary pieces and emerge as educator	7	Cr

**SEMESTER – III****Allied III****History of English Literature - I****Course Code: 21UENA31****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

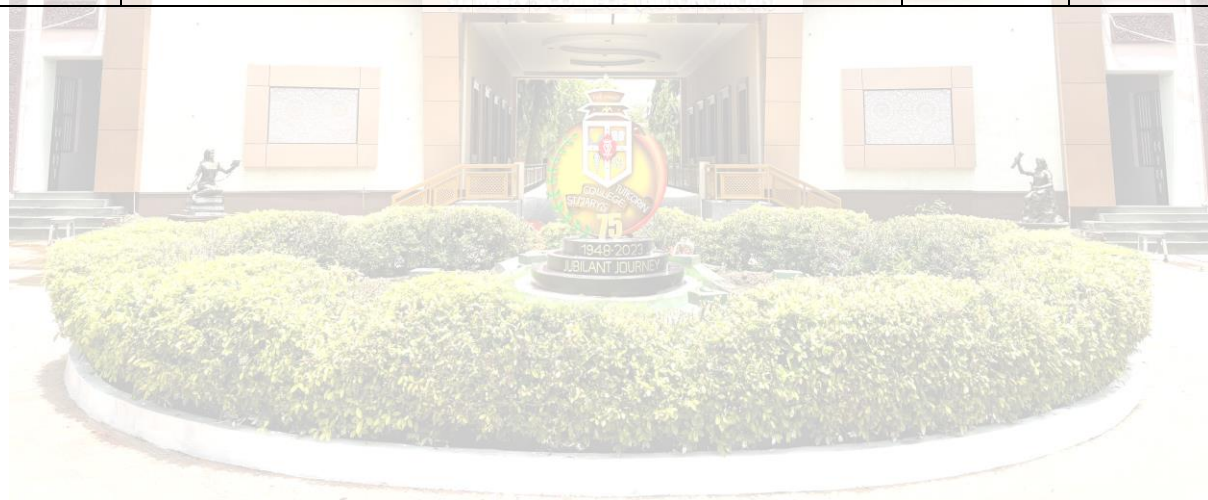
CO. No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO 1	identify and interpret the didactic purpose in literature.	8	Re, Un
CO 2	understand the phases of evolution of English literature and classify English literatures according to their periods	2	Un, Ap
CO 3	comprehend the characteristic features of the age and analyse texts in their cultural and historical contexts	4	An
CO 4	categorise the major literary movements and genres	4	An
CO 5	analyze the distinct literary contribution of England	2	An
CO 6	compare, review and estimate literary texts over the periods.	6	An





**SEMESTER - III****Non - Major Elective****Functional English – I****Course Code: 21UENN31****Hrs/Week: 2****Hrs/ Semester: 30****Credits: 2****Course Outcome:**

Co No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the fundamentals of English Grammar.	1	Un
CO-2	illustrate simple transcription of words and pronounce them in correct accent.	2	Un
CO-3	understand the basics of phonetics.	1	Un
CO-4	relate vocabulary , use them appropriately and apply the LSRW skills effectively in regular usage.	1	Un, Ap
CO-5	converse and to communicate effectively in English.	7	Ap
CO-6	develop the ability to read and write in English .	1	Cr



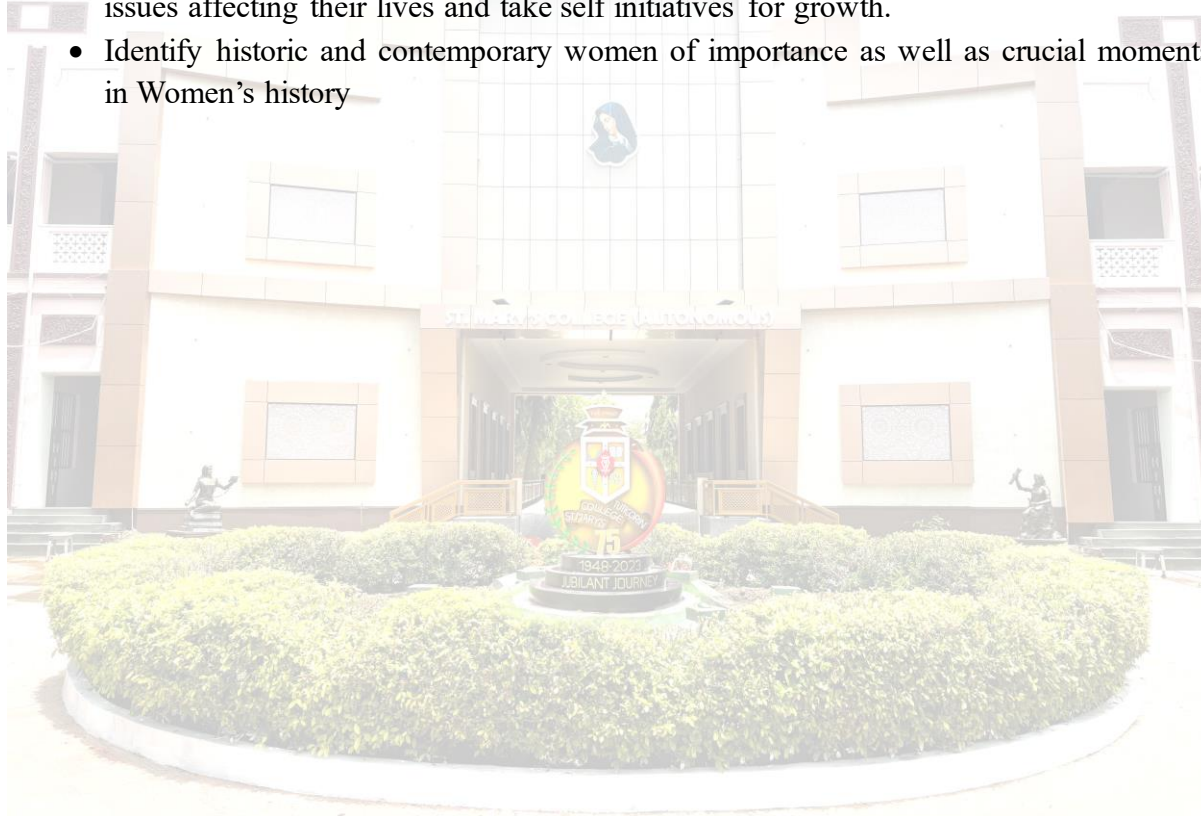
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



### SEMESTER – III

#### Self Study/MOOC/Internship (Compulsory) Myth in Literature

Course Code: 21UENSS1

Credits: 2

#### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	define what sets apart a hero from the rest of society.	2	Re
CO- 2	identify the characteristics of myths and folklore	2	Un
CO-3	understand the use of myths and legends to establish guidelines for living.	2,5	Un, Ap
CO-4	analyse the cultural and historical effects of mythological warriors	4	An
CO-5	relate the cultural effects of mythological systems.	4	Ev
CO-6	interpret moral lessons and historical events in literature	6	Un



**SEMESTER – IV****Core – VI****Twentieth Century British Literature****Course Code:21UENC41****Hrs/Week: 6****Hrs / Semester: 90****Credits: 6****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the thematic concerns of 20 <sup>th</sup> C British Literature.	2	Un
CO-2	recognize the standpoints of different British writers of the age.	2	Un
CO-3	apply the moral values voiced in the literary texts.	5,8	Ap
CO-4	analyze and appreciate the literary features of the genres and develop an aesthetic sense and appreciation of literary texts.	3,6	An
CO-5	analyze the social milieu of twentieth century England through the literary texts.	4	Ev
CO-6	evaluate the contributions and perceptions of the 20 <sup>th</sup> C British writers.	4	Ev





## SEMESTER – IV

**Allied–IV**

**History of English Literature –II**

**Course Code: 21UENA41** **Hrs/Week: 4 Hrs** **Hrs/Semester: 60 Hrs** **Credits:4**

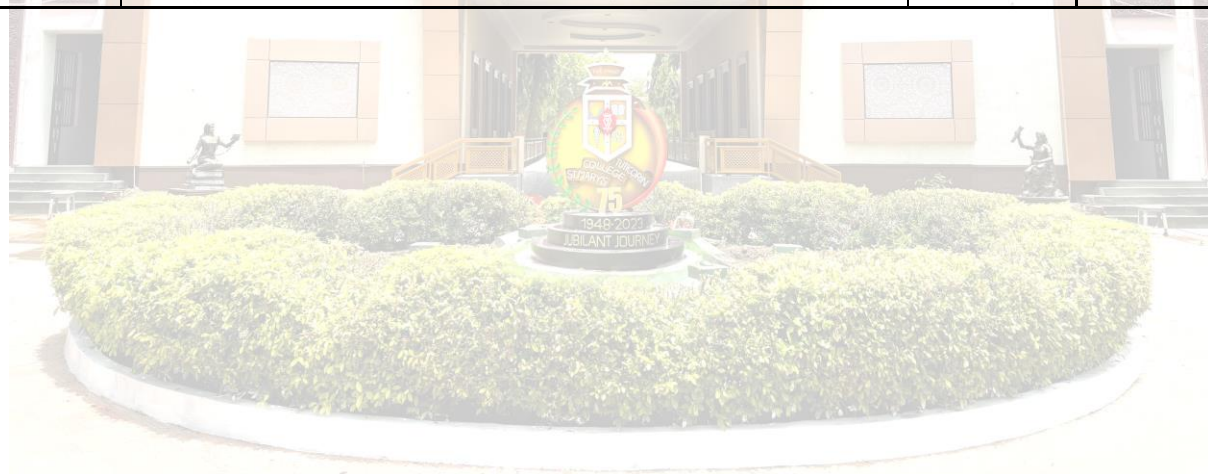
### Course Outcome:

CO. No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO-1	identify the important literary figures and literary works of the period	2	Re
CO-2	understand the chronologically arranged collection of biographical sketches	2	Un
CO-3	prepare themselves for UGC NET/SET competitive examinations	7	Un, An
CO-4	analyze the dominant literary and artistic movements in literature.	2	An
CO-5	examine the issues discussed in the texts in the socio-historic and cultural contexts.	4	An
CO-6	demonstrate an awareness of the social, historical and cultural elements of the centuries.	6	An, Ev



**SEMESTER – IV****Non - Major Elective****Functional English – II****Course Code: 21UENN41****Hrs/Week: 2****Hrs / Semester: 30****Credits: 2****Course Outcome:**

Co No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the basic mechanics of writing in English.	1	Un
CO-2	relate and enrich their vocabulary.	1	Un, Ap
CO-3	develop proficiency in speaking and writing.	1	Cr
CO-4	organize ideas coherently while speaking or writing and engage themselves in simple conversation effectively.	7	An
CO-5	formulate the unique qualities of professional rhetoric.	7	Cr
CO-6	apply the acquired proficiency in formal communication	7	Ap



**SEMESTER IV****Self-Study/Online Course/Internship (Optional) World Classic Fiction****Course Code: 21UENSS2****Credits: 2****Course Outcome:**

CO No.	Upon the completion of the course, the students will be able to:	PSO addressed	CL
CO -1	engage themselves in close reading of literary texts.	1	An
CO -2	understand the socio-cultural dimensions through fiction.	2	Ap
CO -3	analyse the wide range of themes, concerns and literary techniques.	4	An
CO -4	analyze characters in the light of their cultural and historical contexts.	2	Ev
CO -5	comprehend the creative aspects of significant world classic writers.	6	Un
CO -6	evaluate the aesthetic and moral responses in texts.	3	Ev



**SEMESTER – V****Core VIII****Essentials in Shakespearean Writings****Course Code : 21UENC51****Hrs/ week : 6****Hrs/ Semester : 90****Credits : 4****Course Outcome:**

CO No.	Upon successful completion of this course students will be able to:	PSO addressed	CL
CO-1	acquaint with Shakespeare's dramatic and poetic art.	1	Un
CO-2	know the depth of the art of characterization and development of plot.	1	Un
CO-3	understand the components of Shakespearean drama and theatre.	4	Un
CO-4	analyze Shakespeare's works in the modern context.	7	An
CO-5	identify the distinctive features and evaluate the universal appeal of Shakespeare's works.	1, 7	Ev
CO-6	dramatize Shakespearean theatrical art.	3	Cr





**SEMESTER V****Core IX****American Literature****Course Code: 21UENC52****Hrs/Week: 6****Hrs/Semester: 90****Credits:4****Course Outcome:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend the social, cultural and historical milieu of texts.	2	Un
CO-2	Interpret the psychological perspective of American Literature.	4	Ap
CO-3	identify and interpret the representative works of American writers.	4	An
CO-4	appraise the themes and literary devices employed by the major writers.	6	Ev
CO-5	review the ethical dimensions of American literature in the universal context.	8	Ev
CO-6	formulate imagination to a wider range of voices across cultures.	2	Cr

## SEMESTER V

**Core X**

**Literary Criticism**

**Course Code:21UENC53**

**Hrs/Week: 5**

**Hrs/Semester: 75**

**Credits:4**

### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the evolution of the history and principles of literary criticism through the ages and view literary texts in relation to their age and critical perception.	1, 4	Un, An
CO-2	understand how critical reasoning enhances the study of literary art.	4	Un
CO-3	compare and analyze significant critics and their view points.	2	An
CO-4	apply the different approaches of criticism in analyzing texts	1	Ap
CO-5	examine how literary criticism develops tastes and shapes literature and culture across centuries.	8	Ev
CO-6	develop analytical and critical skills with which literature can be appreciated.	7	Cr

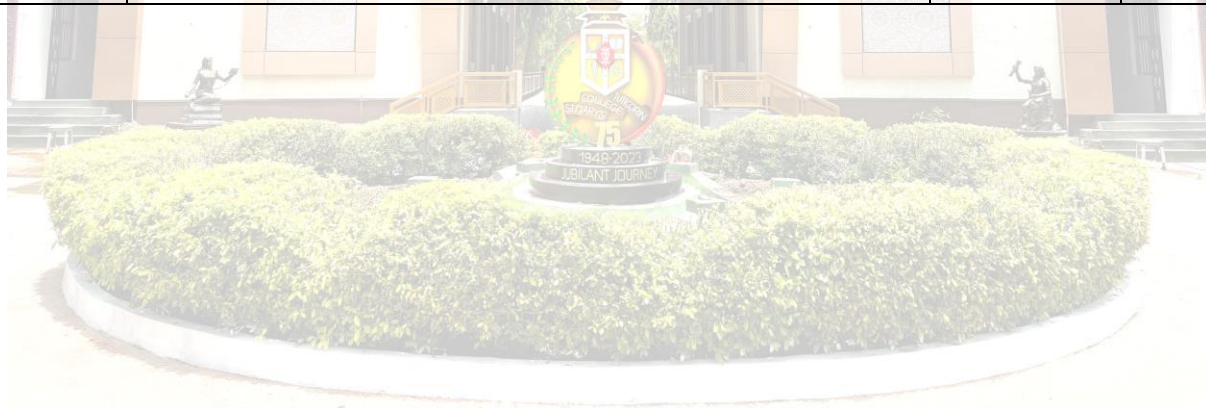
**SEMESTER-V****Core Elective                      Phonetics for English Proficiency****Course Code : 21UENE51    Hrs/ week : 5    Hrs/ Semester : 75    Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss in detail the production and articulation of Speech Sounds.	1, 2	Un
CO-2	understand correct Stress and Intonation pattern.	1	Un
CO-3	understand and analyze variations in speech sounds.	1	Un, An
CO-4	acquire good LSRW skills to foster effective oral and written communication to compete in the global market.	3	Ap
CO-5	better their accentuation and effective communication to emerge as media personnel and soft skill trainers.	7	Ap, Ev
CO-6	articulate standard pronunciation of English words.	3	Ap, Cr

SEMESTER-V			
Core Elective		Practical Criticism	
Course Code :21UENE52	Hrs/ week :5	Hrs/ Semester : 75	Credits :4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend the significant deployment of content and technique used by writers	2	Un
CO-2	analyze the rhetorical pattern, themes and style.	2	An
CO-3	improve the skill of analyzing the language used in prose and poetry.	3	An
CO-4	analyse the devices and techniques used in drama	6	An
CO-5	develop the ability to apply literary techniques to analyze literary texts.	5	Ev
CO-6	critically examine literature with the help of literary forms and terms.	6	Ev





### Semester - V

**Common Skill Based Core**

**Computer for Digital Era and Soft Skills**

**Code : 21UCSB51**

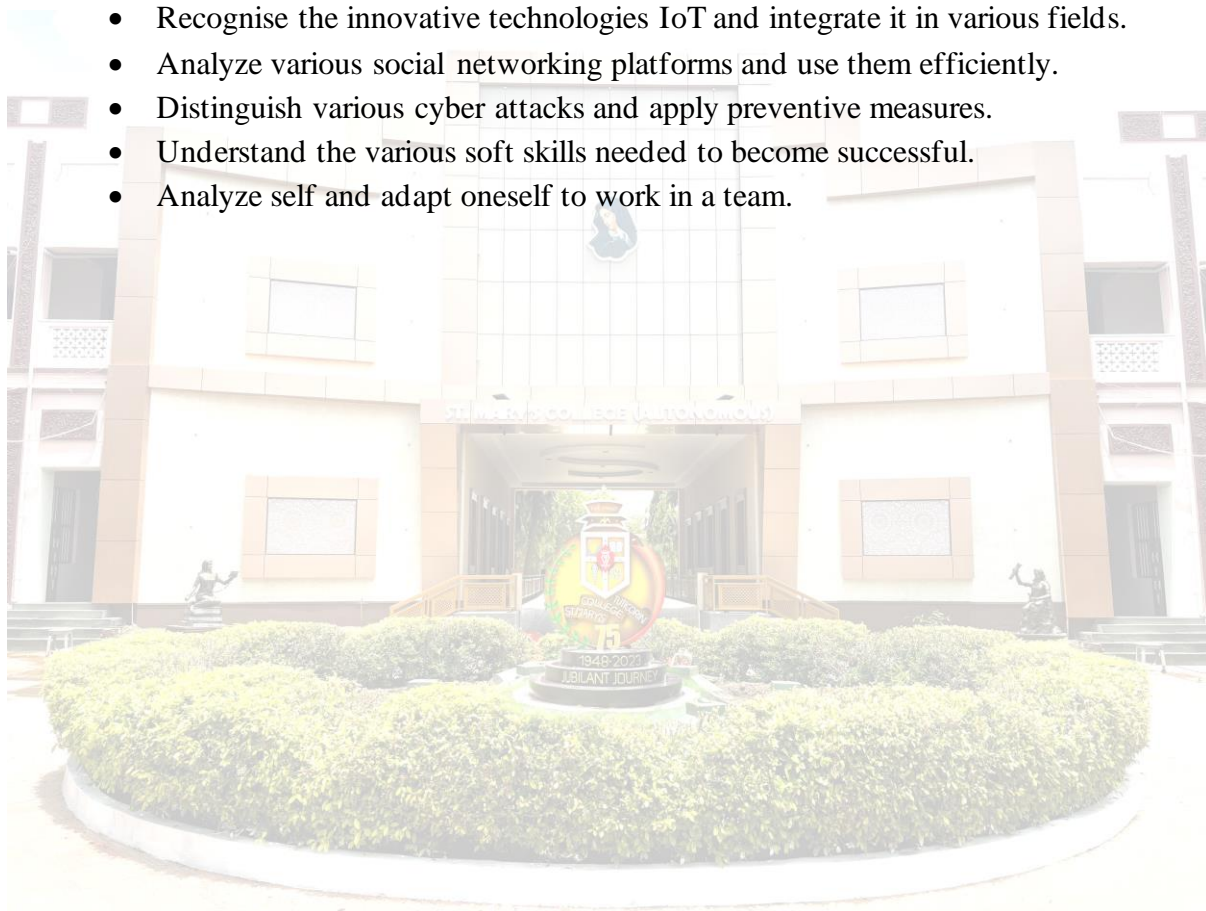
**Hrs / Week : 2**

**Hrs / Sem : 30**

**Credits : 2**

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



Semester – V	
Self-Study/Online Course/Internship (Optional)      Science Fiction	
Course Code: 21UENSS3	Credits :2

**Course Outcome:**

CO No.	Upon completion of this course students will be able to	PSO addressed	CL
CO-1	understand how science and technology influence the world of Literature	2	Un
CO-2	have a critical perspective of the future scene of the world	3	An
CO-3	interpret the stylistic features of science fiction writings	6	Ev
CO-4	apply the caution stated in the studies to safeguard interests of the humans and the earth	5	Ap
CO-5	compare and contrast the advantages and disadvantage of science in its global context	3	Ap
CO-6	seek solution in humanism as an ultimatum to resolve technological and scientific issues	5	Ap,Ev,Cr

**SEMESTER VI****Core XII****Women's Writing****Course Code: 21UENC62****Hrs/Week: 6****Hrs/Semester: 90****Credits: 4****Course Outcome:**

CO No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO 1	understand the role of women in Literature	2	Un
CO 2	interpret women's writings across cultures.	6, 7	An
CO 3	analyse gender perspectives in writings	4	An
CO 4	evaluate the artistic and intellectual contributions of women to literature.	2, 4	Ev
CO 5	identify the marginalization of women in society.	2, 5	Ev
CO 6	construct and reorient the identity of women through creative writing.	8, 5	Cr



SEMESTER-VI			
Core XIII		New Literatures in English	
Course Code: 21UENC63	Hrs/ week :6	Hrs/ Semester: 90	credits :4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire knowledge about contemporary literature across cultures.	1, 2	Un
CO-2	understand texts in their cultural and historic contexts.	1	Un
CO-3	identify the various themes present in New Literatures in English.	1	Un, Ap
CO-4	develop a critical understanding of how literature can both uphold and resist existing structures of power.	8	Un, An
CO-5	critically analyse different literary texts across cultures	6	An
CO-6	evaluate the diversity of literary and social voices.	1, 2	Ev



**SEMESTER-VI****Core XIV****World Literatures in Translation****Course Code: 21UENC64****Hrs / Week: 6****Hrs/ Semester: 90****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the literary genres of World Literatures through translation.	2	Un
CO-2	infer a comprehensive knowledge of diverse cultures and values expressed	2	Un
CO-3	relate the translation theories and interpret literatures accordingly	1	Ap
CO-4	explore the psychological dimensions and approaches of writers to human existence	4	An
CO-5	analyze the aesthetic philosophy and spiritual values expounded in world literature	8	An
CO-6	estimate the conventions and ideologies of world's greatest writers and comprehend the philosophy stated.	6	Ev

**SEMESTER VI****Core XV****Diasporic Literary Studies****Course Code: 21UENC65****Hrs/Week: 6****Hrs/Sem: 90****Credits:4****Course Outcome:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the problem of exile and displacement	2	Un
CO-2	comprehend the significant features of diasporic literature.	2	Un
CO-3	identify and interpret the representative works of the writers of diaspora.	2, 4	An
CO-4	appraise the significant themes and literary devices employed by the major writers.	4	Un, Ev
CO-5	interpret the historical perspective of diasporic literature.	4, 8	An
CO-6	formulate imagination to a wider range of voices across cultures.	2, 6	Ap, Cr

Semester VI			
Project			
Course Code : 21UENP61	Hrs / Week : 6	Hrs / Sem : 90	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand the fundamentals of Research process in characterizing, instantiating, and critiquing the dominant critical theories, methodologies, and practices in the field.	2	Un
CO-2	cultivate research culture by combining theory with practical application for an exceptional professional foundation.	2	Ev
CO-3	interpret new literary works to build broad-based knowledge and skills necessary to fulfil their goals.	7	Ev
CO-4	evaluate critically the sources they find and develop the thesis into a well-supported argument.	6	Ev
CO-5	formulate an original, increasingly analytical thesis of their own.	7	Cr
CO-6	document and present their work in accordance with the concepts of research methodology.	8	Cr



**Programme: B. A. English Literature – Batch II**

<b>SEMESTER – I</b>			
<b>Core – I</b>		<b>Age of Shakespeare and Milton</b>	
<b>18UENC11</b>	<b>Hrs/Week: 5</b>	<b>Hrs / Semester: 75</b>	<b>Credits: 4</b>

**Course Outcome :**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	analyze the structure and rhyme scheme of the sonnets.	1	An
CO-2	develop an appreciation of how the formal elements of language and genre shape meaning.	5	Co
CO-3	practice writing as a process of motivated inquiry engaging other writers' ideas.	6	Ap
CO-4	cultivate their capacity to judge the aesthetic and ethical value of literary texts.	8	Ev
CO-5	recognize how writers can transgress or subvert generic expectations and fulfill them.	3	Un
CO-6	create an aesthetic taste for literary texts.	8	Cr
CO-7	apply the unique qualities of the structure and content of the assigned literary texts by Shakespeare and Milton	4	Ap
CO-8	perceive the unique qualities of the authors studied and compare and contrast them.	4	Ev



**SEMESTER - I****Core - II English Grammar and Usage****18UENC12****Hrs/Week: 5****Hrs/ Semester:75****Credits: 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	perceive the structural meaning of word groups using parts of speech.	3	Ev
CO-2	demonstrate competency in recognizing the tenses. Identify the voice and rewrite the sentences changing the voice.	3,7	Un
CO-3	differentiate the adjectives in comparison and demonstrate the command of conversation using direct and indirect speech.	9	An
CO-4	formulate the structures of English Language using Phrases and Clauses and analyze the transformation of sentences.	7,9	Cr, An
CO-5	construct a well-organized essay with appropriate usage of vocabulary with an effective introduction and conclusion supporting the main topic. Identify the elements of a letter and apply the elements to compose letters.	3,4	An
CO-6	develop knowledge of underlying 'rules' of grammar.	9	Ap
CO-7	improve the skills of structures in written and spoken English and gain confidence.	3	Cr
CO-8	build the mental abilities of reasoning and correct observation.	10	An

**SEMESTER - I****Allied - I****Social History of England****Code: 18UENA11****Hrs/Week: 3****Hrs / Semester: 45****Credits: 3****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	explain the development of science and the age of reasoning.	1	Ev
CO-2	describe the invasion and the expansion of the British colonies all over the world.	4	Ev
CO-3	enumerate the importance of the customs and culture followed by the high class British society.	8	Co
CO-4	relate the war of Americans and French and the development in the industrial field.	2, 4	Un
CO-5	discuss the reforms and the development of education in the modern era.	10	Co
CO-6	demonstrate an awareness of the social, historical and cultural elements of the Centuries.	4,10	Un
CO-7	interpret literary works in a better perspective.	8	Un
CO-8	develop an ability to read text in relation to their historical and cultural context.	1,8	Cr

SEMESTER – I			
Allied - II		Literary Forms	
Code:18UENA12	Hrs/ week: 3	Hrs / Semester: 45	Credits: 3

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	perceive the different genres of Literature.	1	Ev
CO-2	extend the dimensions of Literary forms.	1, 4	Un
CO-3	analyse the meaning of Literary terms.	3, 4	An
CO-4	formulate the exponents of literary genres.	2	Co
CO-5	evaluate one's own perspective in relation to other points of view.	1, 2	Ev
CO-6	distinguish literary texts from other types of texts.	1	An
CO-7	recognize how form and structure shape a text's meaning.	4	Ap
CO-8	demonstrate their ability to explain the influence of genre on a given text.	6	Un

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct



**SEMESTER - II****Core - III Age of Dryden and Pope****Code: 18UENC21****Hrs/Week: 5****Hrs / Semester: 75****Credits: 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	expose to the representative works of the age.	4, 8	Un
CO-2	enrich the cultural literacy of the characteristic tendency of scientific rationalism.	8	An
CO-3	inculcate the historically represented perspectives and diverse canons of the age.	1	An
CO-4	illustrate the intellectual trends and the philosophical investigations of the age.	4	Un
CO-5	differentiate the various tendencies of the age in connection with the emergence of the novels.	2	An
CO-6	understand various schools of poetry	7	Un
CO-7	understanding of strategies of textual interpretation appropriate to different literary genres	7	Un
CO-8	provide knowledge about the social and political background	3	Kn

**SEMESTER - II****Core- IV****Age of Wordsworth****Code : 18UENC22****Hrs/Week : 5****Hrs / Semester: 75****Credits : 4****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	recognize the development of literature and culture of the age.	1	Un
CO-2	introduce the school of Romanticism.	8	Re
CO-3	analyze the significant works of the age.	1, 2	An
CO-4	Identify a writer's thoughts and reflect on points of view that challenge one's perspective.	2	Ev
CO-5	demonstrate an ability to reconstruct the views of the works represented in the age.	1	Un
CO-6	provide knowledge about the social and political background of the age	3	Un
CO-7	develop their introspection by the reading of their prescribed texts.	4,8	An
CO-8	formulate rich vocabulary through their perusal of literary work of art	1	An

## SEMESTER - II

### Allied – III Dramatic Art & Techniques

**Code : 18UENA21**

**Hrs/Week : 3**

**Hrs / Semester: 45**

**Credits : 3**

#### **Vision:**

To cultivate theatrical skills and prepare students for careers in film, stage, television and radio.

#### **Mission:**

To educate and train the students in the skills involved in executing and producing stage plays.

#### **Course Outcome :**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	create love for dramatic works.	7	Cr
CO-2	apply innovative dramatic experiences.	3	Ap
CO-3	develop the ability to create dramatic scripts.	1	Ap
CO-4	build imaginative skills to comprehend the feelings of the people.	4	Ap
CO-5	estimate and assess characters and personalities.	8	Ev
CO-6	prioritize relationships.	3	Ev
CO-7	identify and solve problems.	5	An
CO-8	construct values, co-operation and courageous expression.	3	An

**SEMESTER - II****Allied – IV Children's Literature**

<b>Code : 18UENA22</b>	<b>Hrs/Week : 3</b>	<b>Hrs / Semester: 45</b>	<b>Credits : 3</b>
------------------------	---------------------	---------------------------	--------------------

**Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	recall their childhood experiences and understand the psychology of the children	8	Re
CO-2	extend their empathy towards the issues related to children	10	Un
CO-3	understand life's experiences from a child's perspective	4	Un
CO-4	adapt themselves for a meaningful life with rewarding experiences	2	Co
CO-5	build their capacity for critical thoughts	1	An, Co
CO-6	interpret the texts based on a child's outlook	4	Ev
CO-7	estimate child behaviour across cultures	6	Co
CO-8	compare and contrast childhood experiences with adulthood	8,4	Ev





**SEMESTER – III****Core – V****Age of Tennyson****Code:18UENC31****Hrs/Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	analyse the social and literary history of the Victorian age.	1	An
CO-2	develop an appreciation of trends and movement in Victorian age, through the study of the prose and poetry.	5	Cr
CO-3	practise writing as a process of motivated inquiry engaging other writers' ideas.	6	An
CO-4	cultivate their capacity to judge the aesthetic and ethical value of literary texts.	8	Ev
CO-5	recognize how writers can transgress or subvert generic expectations and fulfil them.	3	Un
CO-6	create an aesthetic taste for literary texts and poems from Alfred Lord Tennyson to G.M Hopkins.	8	Cr
CO-7	render the unique qualities of the structure and content of the assigned literary texts.	4	An
CO-8	perceive the unique qualities of the authors studied and compare and contrast them.	4	Ev

**SEMESTER - III****Allied – V****History of English Literature - I****Code: 18UENA31****Hrs / Week: 3 Hrs****Hrs / Semester: 45 Hrs****Credits: 3****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this Course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	demonstrate an understanding of the functions and historical development of the English language.	4, 10	Un
CO – 2	know the beauty of the coherence of language and literature.	1, 8	Un
CO – 3	become familiar with the important literary figures and the literary works of the period studied.	1, 8	Un
CO – 4	analyze the dominant literary and artistic productions and movements of the early and the modern period.	8	An
CO – 5	understand texts in their cultural and historical contexts.	1, 8	Un
CO – 6	interpret and appreciate the didactic purpose in literature.	8	An, Ev
CO – 7	show insight into the distinctive features of major literary movements and genres.	4, 10	An, Ev
CO – 8	demonstrate an awareness of the social, historical and cultural elements of the centuries.	4,10	Un

**SEMESTER III****Allied VI****Myth in Literature****Code: 18UENA32****Hrs/Week: 3****Hrs/Sem: 45****Credits:3****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO- 1	identify characteristics of myths, folklore	1	Un
CO- 2	describe the different types of myths.	2	Re
CO- 3	analyse the cultural and historical effects of mythological warriors	4	An
CO-4	define what sets apart a hero from the rest of society.	2	Re
CO- 5	appraise the characteristics of gods and goddesses of ancient mythology.	1	Ev
CO-6	relate the cultural effects of mythological systems.	4	An
CO-7	assess how comparative religion is used to compare the themes of sacred myths.	8	Ev
CO-8	understand the use of myths and legends to establish guidelines for living.	8	Un

SEMESTER III			
Skill Based Elective		Employability Skills	
Code: 18UENS31	Hrs/Week: 4	Hrs/Semester: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	create an ability to work constructively with others on a common task.	2	Cr
CO-2	analyse own strengths and weaknesses, aims and values.	10	An
CO-3	analysing and responding positively to changing circumstances	1,3	An
CO-4	predict appropriate methods to find solutions	3,5	Co
CO-5	discuss and achieve mutually satisfactory resolution of contentious issues	1,2	Co
CO-6	become original or inventive and apply lateral thinking	3	Ev
CO-7	create an ability to take action unprompted	5	Cr
CO-8	assess the tasks and rank according to the importance	8	Un



**SEMESTER - III****Non- Major Elective I****Functional English – I****Code: 18UENN31****Hrs/Week: 2****Hrs/ Semester: 30****Credits: 2****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	improve and apply the conventions of academic writing in English.	1	Un, Ap
CO-2	learn the meaning of new vocabulary and use them in speaking and writing.	1	Cr
CO-3	develop insight into the structure of English language.	3	An
CO-4	understand the fundamentals of Grammar.	3	Un
CO-5	provide an account of basic phonology theory.	7	Ap
CO-6	apply their knowledge of English phonetics to improve their pronunciation.	3,7	Ap
CO-7	demonstrate the ability to transcribe speech.	8,9	Un
CO-8	sharpen the writing skill and train them to write clearly, coherently and cohesively.	2,3	An, Cr

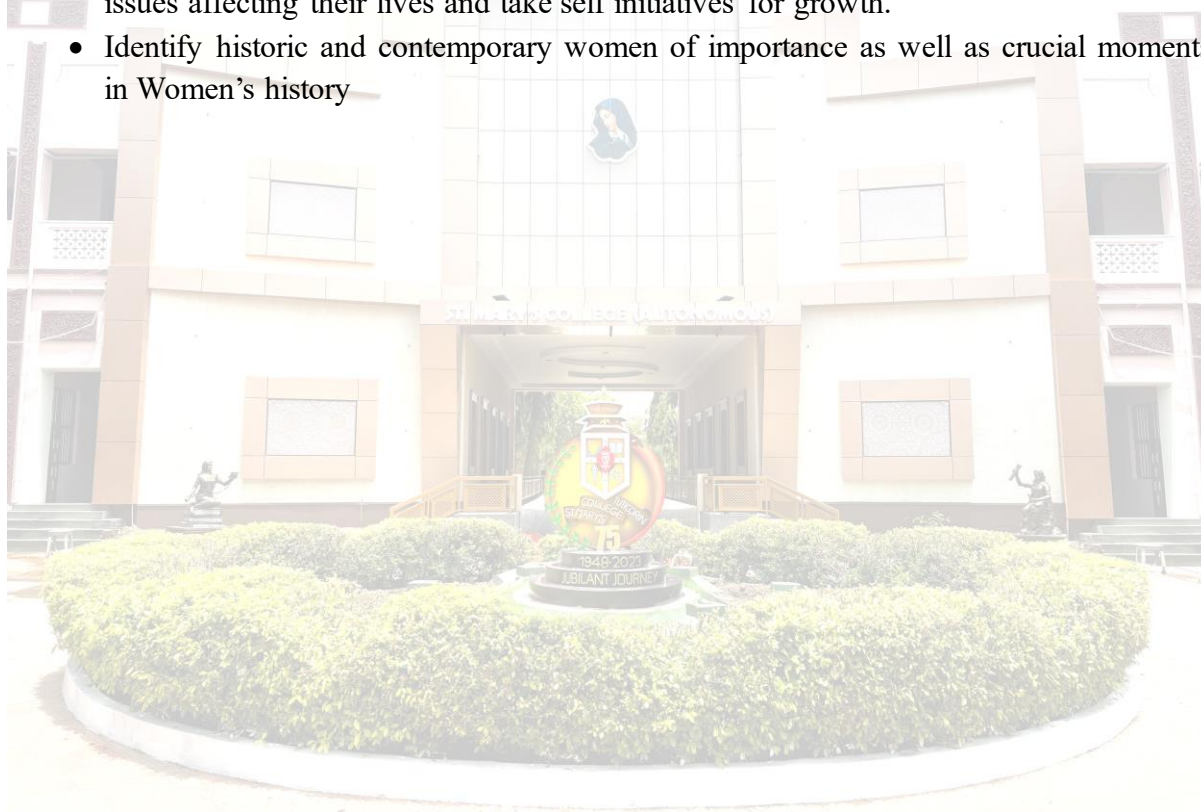
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER – IV****Core – VI****Twentieth Century British Literature****Code:18UENC41****Hrs/Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify various forms and types of poetry.	1	An
CO-2	develop an appreciation of literature to gain an understanding of the social and literary background of England in the Twentieth Century.	5	Cr
CO-3	Understand and appreciate the literary features of the century	6	An
CO-4	cultivate their capacity to judge the aesthetic and ethical value of literary texts.	8	Ev
CO-5	analyse and appreciate fiction and the enrich their knowledge about diverse fictional forms in prose.	3	Un
CO-6	create an aesthetic taste for literary texts and poems from Alfred Lord Tennyson to G.M Hopkins.	8	Cr
CO-7	gather a general awareness about the Victorian Age and the social milieu of early and mid twentieth century.	4	An
CO-8	to understand and appreciate the basic concepts of style and literary devices in prose.	4	Ev

**SEMESTER - IV****Allied – VII****History of English Literature - II****Code: 18UENA41****Hrs/Week: 3 Hrs****Hrs/Semester: 45 Hrs****Credits: 3****Course Outcome:**

CO. No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO-1	demonstrate an understanding of the functions and historical development of the English language.	4, 10	Un
CO-2	know the beauty of the coherence of language and literature	1, 8	Un
CO-3	become familiar with important literary figures and literary works of the period studied.	1, 8	Un
CO-4	analyse the dominant literary and artistic productions and movements of the early and the modern period	8	An
CO-5	understand texts in their cultural and historical contexts.	1,8	Un
CO-6	interpret and appreciate the didactic purpose in literature	8	An, Ev
CO-7	show insight into the distinctive features of major literary movements and genres.	4, 10	An, Ev
CO-8	demonstrate an awareness of the social, historical and cultural elements of the centuries.	4,10	Un, An



**SEMESTER - IV****Core Skill Based****English for Proficiency****Code: 18UENS41****Hrs/Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	perceive the nuances involved in proficiency exams.	10	Ev
CO-2	enrich themselves with the aspects of Grammar.	1	Un
CO-3	improve their vocabulary.	1	Cr
CO-4	develop English Language Skills.	1	Cr
CO-5	apply strategies to comprehend words and ideas.	7	Ap
CO-6	acquire an in depth knowledge of the skills essential for professional mastery.	7	Un
CO-7	develop reading and writing skills	1	Cr
CO-8	improve communicative competency and thereby enhance personality	5	Un

**SEMESTER – IV****Non- Major Elective II****Functional English – II****Code: 18UENN41****Hrs/Week: 2****Hrs / Semester: 30****Credits: 2****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	improve and apply the conventions of academic writing in English.	1	Un, Ap
CO-2	learn the meaning of new words and use them in speaking and writing.	1	Cr
CO-3	convert their passive vocabulary into active one; enhancing their speaking and writing skills.	7	Ap
CO-4	gain proficiency in writing skills	4	Un
CO-5	organise ideas logically and to present them appropriately in various situations of communication.	5	An
CO-6	apply their knowledge of English phonetics to improve their pronunciation.	5	Ap
CO-7	practise the unique qualities of professional rhetoric and writing style.	1	Un
CO-8	analyse and use the formal elements to write a report.	6	An, Cr

**SEMESTER – V****Core VIII****Essentials in Shakespearean Writings****Code : 18UENC52****Hrs/ week : 6****Hrs/ Sem : 90****Credits : 4****Course Outcome:**

<b>CO No.</b>	<b>Upon successful completion of this course students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquaint with Shakespeare's dramatic and poetic genius.	8	Un
CO-2	identify the distinct features of the literary genres of Shakespeare's works.	2	Ev
CO-3	trace the development of Elizabethan theatre.	2,8	Un
CO-4	analyse Shakespeare's works in the modern context.	1,8	An
CO-5	analyse how a writer's tone and voice influence audiences' perception.	1, 2	An
CO-6	find out the difference between the English used during the Elizabethan Age and today.	7	Un
CO-7	understand the universal appeal of Shakespeare's works	8	Un
CO-8	involve themselves in creative writing.	6	Cr

**SEMESTER V****Core IX American Literature****Code: 18UENC53****Hrs/Sem:90****Hrs/Week: 6****Credits:5****Course Outcome:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	highlight the important social condition of each period in order to understand the authors.	1	Re
CO-2	understand the important features of American literature.	2	Un
CO-3	identify and interpret the representative works of American writers.	2	Un
CO-4	assess the significant themes in American Literature.	4	Ev
CO-5	appraise the literary devices employed by the major writers.	2	Ev
CO-6	interpret the historical perspective of American Literature.	4	Un
CO-7	review the dimensions of American literature in the universal context.	8	Ev
CO-8	formulate imagination to a wider range of voices across cultures.	8	Cr



**SEMESTER V****Core Integral I****Literary Criticism****Code:18UEN151****Hrs/Week: 5****Hrs/Sem: 75****Credits:4****Course Outcome:**

<b>C.O. No.</b>	<b>Upon Completion of this course students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	practise critical thinking and devise novel ideas.	1	An
CO-2	develop critical sensibility and impart basic knowledge of criticism.	2	An
CO-3	interpret literary compositions to shape their perceptions of the world .	4	Ap, Un, Ev
CO-4	acquaint with the classical and modern theories to compete in the world of higher learning.	5	Un
CO-5	develop literary taste to articulate original ideas.	2	An
CO-6	view literary texts with a critical outlook to compete in the global market.	5	Ev
CO-7	acquaint with the factors involved in criticism like interpretation, elucidation, judgment and appreciation.	1	Un
CO-8	evaluate any work of art to higher perception.	4	Ev

**SEMESTER-V****Core Integral II      Phonetics : Theory and Practice****Code : 18UENI52****Hrs/ week :5****Hrs/ Sem : 75****Credits :4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	discuss in detail the production and articulation of Speech Sounds	3, 7	Un
CO-2	construct the vowel and consonant sounds using Phonetic symbols	7	Ap
CO-3	understand correct Stress and Intonation pattern	3,9	Un
CO-4	enumerate transcription to improve Speech Sounds	3,7	Ap
CO-5	acquire good LSRW skills to foster effective oral and written communication	3,5	Ev
CO-6	articulate standard pronunciation of English words	1, 7	Ap
CO-7	better accentuation and effective communication	5	Ap
CO-8	understand and analyse variations in speech sounds	3	Ap

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

**Code : 18UCSB51**

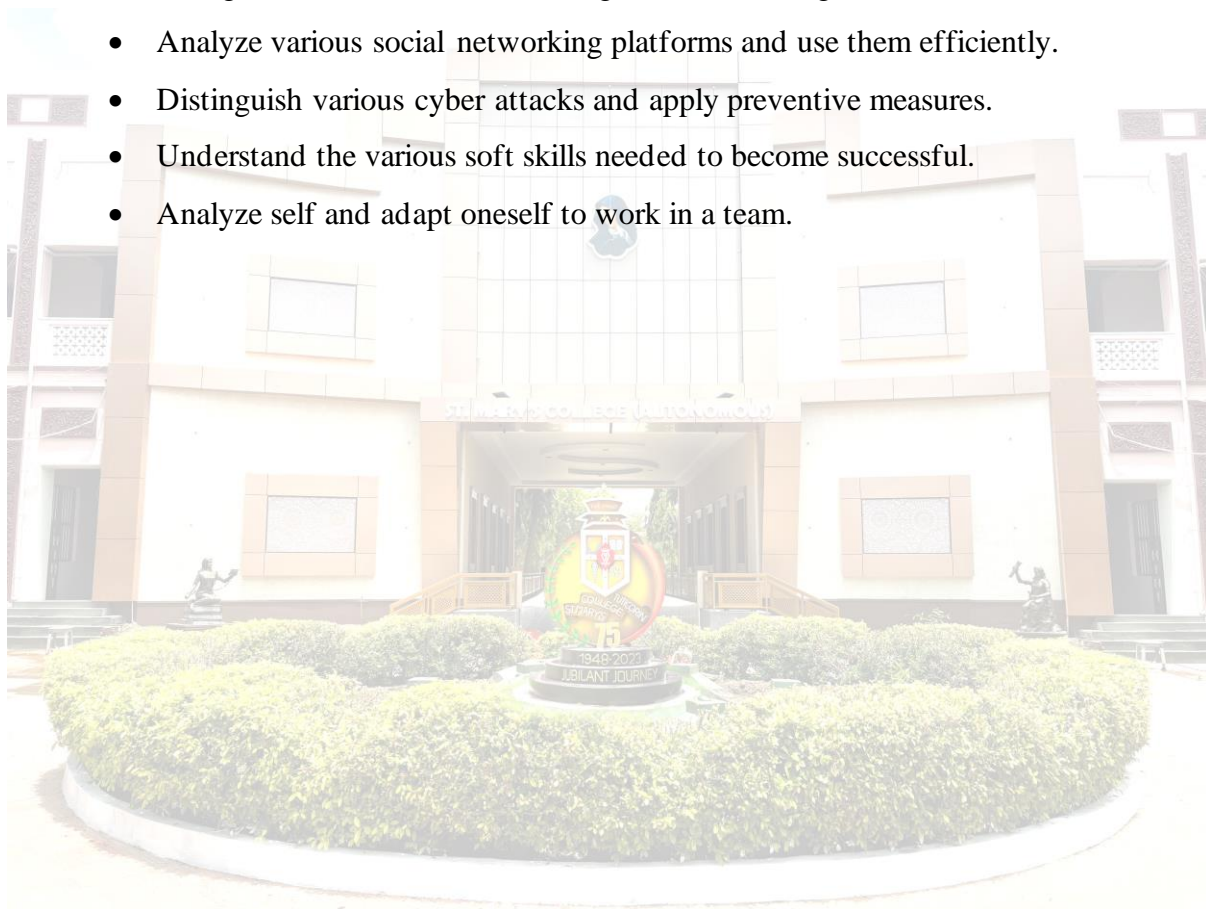
**Hrs / Week : 2**

**Hrs / Sem : 30**

**Credits : 2**

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



**SEMESTER VI****Core XI****Women's Writing****Code: 18UENC62****Hrs/Week: 6****Hrs/Sem: 90****Credits: 4****Course Outcome:**

CO No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO – 1	understand the role of women in Literature	2	Un
CO – 2	recognise the biased social structure of women in the modern era.	3	Un
CO – 3	interpret women's writings across cultures.	3, 5	Ap
CO – 4	analyse the artistic and intellectual contributions of women to literature.	8	An
CO – 5	identify the marginalization of women in society.	8	Un
CO – 6	analyse gender perspectives in writings	3	An
CO – 7	construct their Identity.	4	Cr
CO – 8	appraise the multi-faceted personality of women.	2,6	Ev



**SEMESTER-VI****Core XII****New Literatures in English****Code : 18UENC63****Hrs/ week :6****Hrs/ Sem : 90****credits :4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquire knowledge about contemporary literature across cultures.	1, 2	Un
CO-2	recognize similarity of experiences of Post-Colonial writers	8	Un
CO-3	identify the various themes presented in New Literatures in English.	1	Ap
CO-4	appreciate the diversity of literary and social voices.	1, 2	Ev
CO-5	develop a penchant for New Literatures in English.	1, 8	Cr
CO-6	understand texts in their cultural and historic contexts.	4	Un
CO-7	develop a critical understanding of how literature can both uphold and resist existing structures of power.	8, 10	Un
CO-8	critically analyse different literary texts across cultures	8	An

**SEMESTER-VI****Core Integral III****World Classics****Code : 18UENI61****Hrs/ week :6****Hrs/ Sem : 75****Credits :4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	relate to the ideologies and psychological impact of diverse people through the classics	1	Un
CO-2	appraise literary texts of great masters	2, 3	Ev
CO-3	analyze the rhetorical pattern and themes of the classics	1,2	An
CO-4	compare and evaluate Literature of diverse cultures	2	Ev
CO-5	improve the skill of analyzing the language used in prose and poetry.	3,7	An
CO-6	evaluate the text against its socio-cultural historic background	1, 8	Ev
CO-7	analyse the literary devices and techniques in different genres of the classics	1	An
CO-8	develop a critical analyses of translations	4, 8	Ev

**SEMESTER VI****Core Integral IV****Diasporic Literature****Code: 18UENI62****Hrs/Week: 6****Hrs/Sem:90****Credits:4****Course Outcome:**

<b>Co. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	highlight the important social condition of each culture in order to understand the authors.	1	Re
CO-2	understand the important features of diasporic literature.	2	Un
CO-3	identify and interpret the representative works of the writers of diaspora.	2	Un
CO-4	assess the significant themes in diasporic literature.	4	Ev
CO-5	appraise the literary devices employed by the major writers.	2	Ev
CO-6	interpret the historical perspective of diasporic literature.	4	Un
CO-7	review the dimensions of diasporic literature in the universal context.	8	Ev
CO-8	formulate imagination to a wider range of voices across cultures.	8	Cr

**SEMESTER – I****Core – I                                      Age of Renaissance (1500 to 1660)****Course Code: 21UENC11      Hrs/Week:5                      Hrs / Semester: 75                      Credits: 4****Course Outcome:**

<b>Co. No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	understand literary texts in their social, political, historical and cultural contexts.	2	Un
CO-2	analyse the structure and rhyme scheme of the sonnets.	6	Un
CO-3	appreciate and analyse the structure and content of any literary piece.	6	An
CO-4	judge the aesthetic and ethical values of Renaissance.	4,6	Ev, Ap
CO-5	perceive the distinct qualities of the writers of the Age of Renaissance.	4	Ev
CO-6	practise writing as a process of motivated inquiry engaging other writers' ideas.	7	Cr



SEMESTER – I			
Core II		English Grammar and Usage	
Course Code: 21UENC12	Hrs/Week: 5	Hrs/Semester: 75	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course students will be able to	PSO addressed	Cognitive Level
CO-1	understand the basic functions of the different parts of speech.	2	Un
CO-2	analyse the usage of various tenses.	6	An
CO-3	employ different kinds of sentences in the oral and written communication.	1,7	Un, Ap
CO-4	apply degrees of comparison in the appropriate context.	3	Ap
CO-5	synthesise the structure of the sentence.	1	Ev
CO-6	construct well-organized essays with appropriate usage of grammar and vocabulary with an effective introduction and conclusion, supporting the main topic.	7,8	Cr

SEMESTER – I			
Allied – I		Social History of England	
Course Code :21UENA11	Hrs/ week: 4	Hrs / Semester: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO -1	develop an awareness of the social, historical, religious and cultural politics of England.	1,4	Un
CO - 2	understand the social changes within the country and its relationship with other nations.	4	Un
CO - 3	analyse the causes and consequences of civil war and American independence	5	An
CO - 4	analyse the major trends that shaped the English society and identify the key themes which encapsulate the period and review the reforms and developments of education in the modern era.	5	An
CO - 5	evaluate the invasion and expansion of the British colonies all over the world, across culture	2	Ev
CO - 6	evaluate the effects of the revolutions and their impacts on society	1	Ev

**SEMESTER – I****Skill Enhancement Course – I      Professional English – I****Course Code :21UENPE1****Hrs / Week : 2****Hrs / Sem : 30****Credits : 2****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	refine written and verbal communication skills.	1	Un
CO-2	speak confidently in any professional environment.	1,3	Ap
CO-3	face interviews with confidence.	1,3	Ap
CO-4	analyse and comprehend unfamiliar texts.	7	Ap
CO-5	develop strategic competence through efficient listening.	3,7	Ap, Cr
CO-6	construct error free sentences for content writing.	3,7	Ap, Cr

## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014



## SEMESTER – II

### Core – III Age of Restoration and Transition (1660 – 1770)

Course Code: 21UENC21	Hrs/Week: 5	Hrs / Semester: 75	Credits: 4
-----------------------	-------------	--------------------	------------

#### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	remember the historical perspective and the representative writers of the age.	2	Re
CO-2	acquire knowledge of the social and political background.	2	Un
CO- 3	understand the various movements of the age.	2	Un
CO- 4	understand the various aspects of literary genres.	2,6	Un
CO- 5	analyse the distinctive features of the age.	6	An
CO-6	analyse the cultural legacy of the age.	6	An

**SEMESTER - II****Core - IV****Romantic Age (1770-1830)****Course Code : 21UENC22****Hrs/Week : 5****Hrs / Semester : 75****Credits : 4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	recognise the development of literature and culture of the age.	2, 6	Un, An
CO-2	understand the school of Romanticism and analyse the significant works of the age.	2, 5	Un, An
CO-3	gain knowledge about the social and political background of the age.	4, 6	Un, An
CO-4	practice the ethical values gained from the works of art.	8	Ap
CO- 5	develop introspection into the literary and artistic movement of the age	1	Un
CO-6	identify the writers' thoughts and points of view and reflect from one's own perspective	5	Ev

SEMESTER – II			
Allied – II		Literary Forms and Terms	
Course Code : 21UENA21	Hrs/ week: 4	Hrs / Semester: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO -1	comprehend the dimensions of literary forms.	2	Un
CO - 2	distinguish and differentiate different literary terms and apply wherever necessary.	1	Un
CO - 3	recognise how form and structure shape the meaning of a text.	5	Ap
CO - 4	identify, analyse and interpret the different genres of literature.	4	An
CO - 5	evaluate one's own perspective in relation to various forms of literature.	6	Ev
CO-6	formulate literary creations of their own and emerge as educators.	1	Ev

**SEMESTER – II****Skill Enhancement Course – II Professional English - II****Course Code : 21UENPE2 Hrs / Week: 2 Hrs / Sem: 30 Credits: 2****Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSOs addressed	Cognitive Level
CO-1	understand the theoretical and practical components of professional English and soft skills.	1, 3	Un, An
CO-2	write advertisements, create web pages, business e-mail / video logs, etc.	3, 7	Ap, Cr
CO-3	use power point and make oral presentations.	7	Cr
CO-4	write minutes and reports.	7	Cr
CO-5	build a strong professional vocabulary which can be effectively used in different platforms.	7	Cr
CO-6	write creative and innovative script for short films, blogs, flyers, brochures and posters.	8	Cr





SEMESTER – III			
Core V		Victorian Age (1837-1901)	
Course Code:21UENC31	Hrs/Week: 6 Hrs	Hrs/ Semester: 90	Credits: 6

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	have a comprehensive knowledge of the principles of Victorian society characterized by class based society with its gender and race	4	Un
CO-2	comprehend, categorize and distinguish the representative writers of the age along with the working class cultures	4	An
CO-3	review a work with its relationship to the Victorian scientific development, its continued aggressive expansion and its significant migration	4	Ap
CO-4	perceive the unique qualities of the author studied and analyse the text with their socio-economic and literary background	6	Ap
CO-5	evaluate the ethical values in the literary texts to evolve as better citizen	5	Ev
CO-6	create an aesthetic taste for literary pieces and emerge as educator	7	Cr

**SEMESTER – III****Allied III****History of English Literature - I****Course Code: 21UENA31****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this Course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	identify and interpret the didactic purpose in literature.	8	Re, Un
CO 2	understand the phases of evolution of English literature and classify English literatures according to their periods	2	Un, Ap
CO 3	comprehend the characteristic features of the age and analyse texts in their cultural and historical contexts	4	An
CO 4	categorise the major literary movements and genres	4	An
CO 5	analyze the distinct literary contribution of England	2	An
CO 6	compare, review and estimate literary texts over the periods.	6	An

**SEMESTER - III****Non - Major Elective****Functional English – I****Course Code: 21UENN31****Hrs/Week: 2****Hrs/ Semester: 30****Credits: 2****Course Outcome:**

Co No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the fundamentals of English Grammar.	1	Un
CO-2	illustrate simple transcription of words and pronounce them in correct accent.	2	Un
CO-3	understand the basics of phonetics.	1	Un
CO-4	relate vocabulary , use them appropriately and apply the LSRW skills effectively in regular usage.	1	Un, Ap
CO-5	converse and to communicate effectively in English.	7	Ap
CO-6	develop the ability to read and write in English .	1	Cr



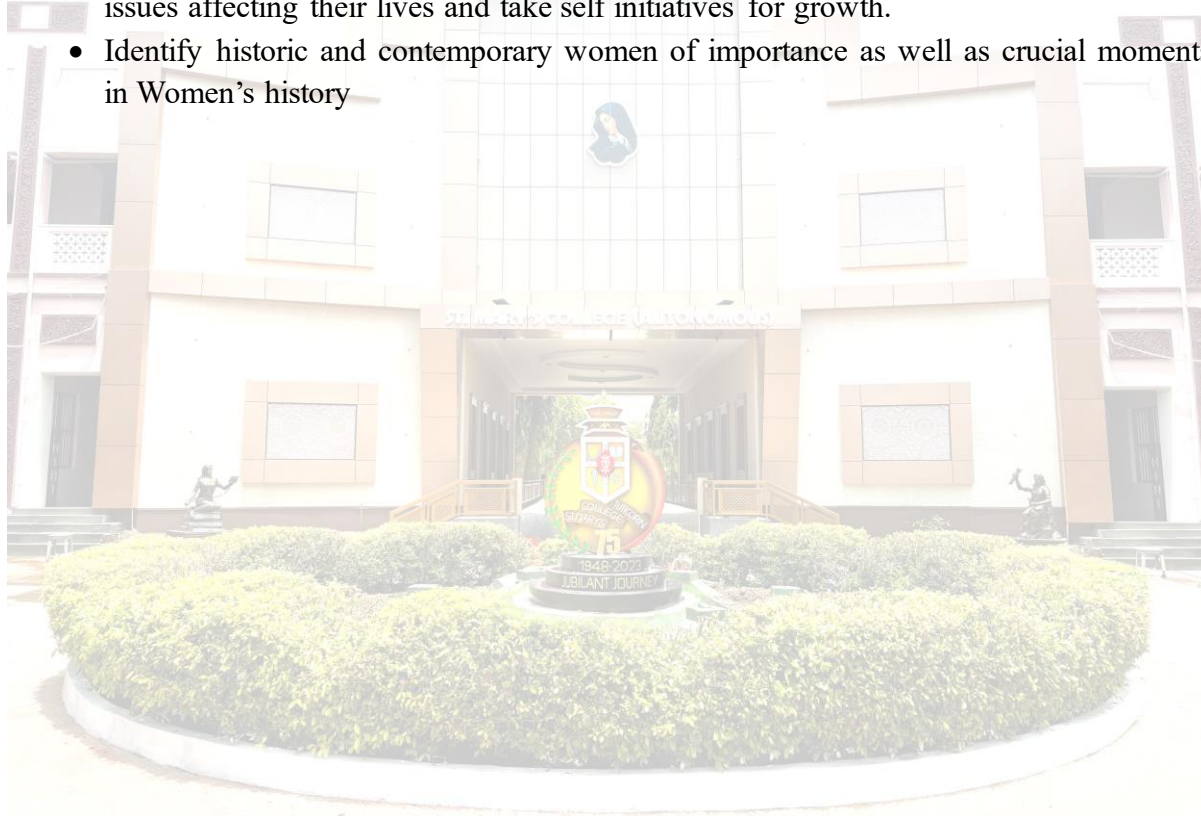
### Semester – III

#### Women's Synergy

<b>Code : 18UAWS31</b>	<b>Hrs/ Week : 2</b>	<b>Hrs/Sem:30</b>	<b>Credits : 2</b>
------------------------	----------------------	-------------------	--------------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





### SEMESTER – III

#### Self Study/MOOC/Internship (Compulsory) Myth in Literature

Course Code: 21UENSS1

Credits: 2

#### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	define what sets apart a hero from the rest of society.	2	Re
CO- 2	identify the characteristics of myths and folklore	2	Un
CO-3	understand the use of myths and legends to establish guidelines for living.	2,5	Un, Ap
CO-4	analyse the cultural and historical effects of mythological warriors	4	An
CO-5	relate the cultural effects of mythological systems.	4	Ev
CO-6	interpret moral lessons and historical events in literature	6	Un



**SEMESTER – IV****Core – VI****Twentieth Century British Literature****Course Code:21UENC41****Hrs/Week: 6****Hrs / Semester: 90****Credits: 6****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the thematic concerns of 20 <sup>th</sup> C British Literature.	2	Un
CO-2	recognize the standpoints of different British writers of the age.	2	Un
CO-3	apply the moral values voiced in the literary texts.	5,8	Ap
CO-4	analyze and appreciate the literary features of the genres and develop an aesthetic sense and appreciation of literary texts.	3,6	An
CO-5	analyze the social milieu of twentieth century England through the literary texts.	4	Ev
CO-6	evaluate the contributions and perceptions of the 20 <sup>th</sup> C British writers.	4	Ev



## SEMESTER – IV

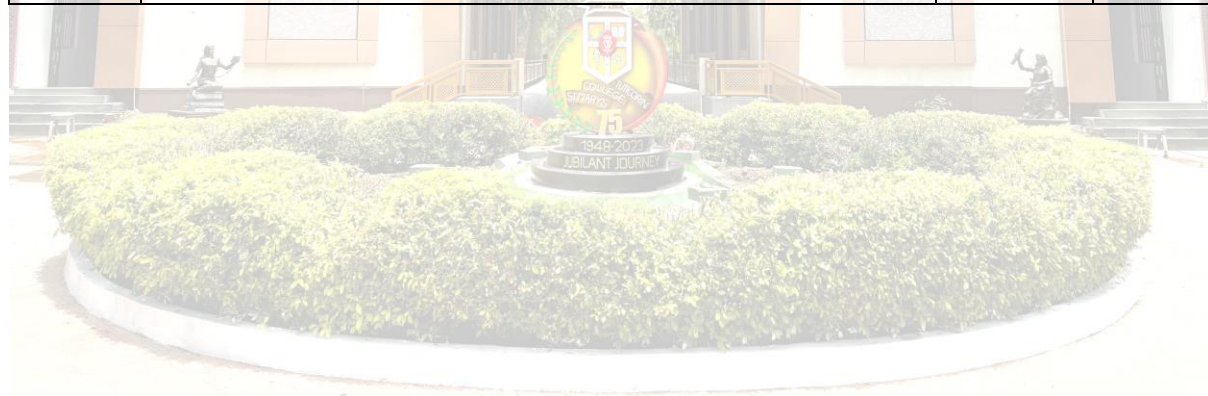
**Allied–IV**

**History of English Literature –II**

**Course Code: 21UENA41 Hrs/Week: 4 Hrs Hrs/Semester: 60 Hrs Credits:4**

### Course Outcome:

CO. No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO-1	identify the important literary figures and literary works of the period	2	Re
CO-2	understand the chronologically arranged collection of biographical sketches	2	Un
CO-3	prepare themselves for UGC NET/SET competitive examinations	7	Un, An
CO-4	analyze the dominant literary and artistic movements in literature.	2	An
CO-5	examine the issues discussed in the texts in the socio-historic and cultural contexts.	4	An
CO-6	demonstrate an awareness of the social, historical and cultural elements of the centuries.	6	An, Ev



**SEMESTER – IV****Non - Major Elective****Functional English – II****Course Code: 21UENN41****Hrs/Week: 2****Hrs / Semester: 30****Credits: 2****Course Outcome:**

Co No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the basic mechanics of writing in English.	1	Un
CO-2	relate and enrich their vocabulary.	1	Un, Ap
CO-3	develop proficiency in speaking and writing.	1	Cr
CO-4	organize ideas coherently while speaking or writing and engage themselves in simple conversation effectively.	7	An
CO-5	formulate the unique qualities of professional rhetoric.	7	Cr
CO-6	apply the acquired proficiency in formal communication	7	Ap





**SEMESTER IV****Self-Study/Online Course/Internship (Optional) World Classic Fiction****Course Code: 21UENSS2****Credits: 2****Course Outcome:**

CO No.	Upon the completion of the course, the students will be able to:	PSO addressed	CL
CO -1	engage themselves in close reading of literary texts.	1	An
CO -2	understand the socio-cultural dimensions through fiction.	2	Ap
CO -3	analyse the wide range of themes, concerns and literary techniques.	4	An
CO -4	analyze characters in the light of their cultural and historical contexts.	2	Ev
CO -5	comprehend the creative aspects of significant world classic writers.	6	Un
CO -6	evaluate the aesthetic and moral responses in texts.	3	Ev



**SEMESTER – V****Core VIII****Essentials in Shakespearean Writings****Course Code : 21UENC51****Hrs/ week : 6****Hrs/ Semester : 90****Credits : 4****Course Outcome:**

CO No.	Upon successful completion of this course students will be able to:	PSO addressed	CL
CO-1	acquaint with Shakespeare's dramatic and poetic art.	1	Un
CO-2	know the depth of the art of characterization and development of plot.	1	Un
CO-3	understand the components of Shakespearean drama and theatre.	4	Un
CO-4	analyze Shakespeare's works in the modern context.	7	An
CO-5	identify the distinctive features and evaluate the universal appeal of Shakespeare's works.	1, 7	Ev
CO-6	dramatize Shakespearean theatrical art.	3	Cr



**SEMESTER V****Core IX****American Literature****Course Code: 21UENC52****Hrs/Week: 6****Hrs/Semester: 90****Credits:4****Course Outcome:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend the social, cultural and historical milieu of texts.	2	Un
CO-2	Interpret the psychological perspective of American Literature.	4	Ap
CO-3	identify and interpret the representative works of American writers.	4	An
CO-4	appraise the themes and literary devices employed by the major writers.	6	Ev
CO-5	review the ethical dimensions of American literature in the universal context.	8	Ev
CO-6	formulate imagination to a wider range of voices across cultures.	2	Cr

## SEMESTER V

**Core X**

**Literary Criticism**

**Course Code:21UENC53**

**Hrs/Week: 5**

**Hrs/Semester: 75**

**Credits:4**

### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the evolution of the history and principles of literary criticism through the ages and view literary texts in relation to their age and critical perception.	1, 4	Un, An
CO-2	understand how critical reasoning enhances the study of literary art.	4	Un
CO-3	compare and analyze significant critics and their view points.	2	An
CO-4	apply the different approaches of criticism in analyzing texts	1	Ap
CO-5	examine how literary criticism develops tastes and shapes literature and culture across centuries.	8	Ev
CO-6	develop analytical and critical skills with which literature can be appreciated.	7	Cr



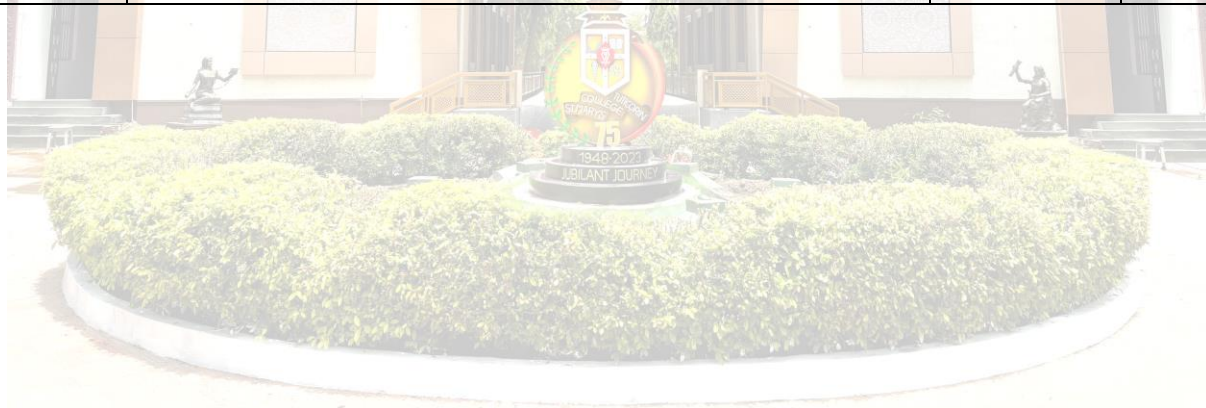
**SEMESTER-V****Core Elective                      Phonetics for English Proficiency****Course Code : 21UENE51    Hrs/ week : 5    Hrs/ Semester : 75    Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss in detail the production and articulation of Speech Sounds.	1, 2	Un
CO-2	understand correct Stress and Intonation pattern.	1	Un
CO-3	understand and analyze variations in speech sounds.	1	Un, An
CO-4	acquire good LSRW skills to foster effective oral and written communication to compete in the global market.	3	Ap
CO-5	better their accentuation and effective communication to emerge as media personnel and soft skill trainers.	7	Ap, Ev
CO-6	articulate standard pronunciation of English words.	3	Ap, Cr

<b>SEMESTER-V</b>			
<b>Core Elective</b>		<b>Practical Criticism</b>	
<b>Course Code :21UENE52</b>	<b>Hrs/ week :5</b>	<b>Hrs/ Semester : 75</b>	<b>Credits :4</b>

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	comprehend the significant deployment of content and technique used by writers	2	Un
CO-2	analyze the rhetorical pattern, themes and style.	2	An
CO-3	improve the skill of analyzing the language used in prose and poetry.	3	An
CO-4	analyse the devices and techniques used in drama	6	An
CO-5	develop the ability to apply literary techniques to analyze literary texts.	5	Ev
CO-6	critically examine literature with the help of literary forms and terms.	6	Ev



### Semester - V

**Common Skill Based Core**

**Computer for Digital Era and Soft Skills**

**Code : 21UCSB51**

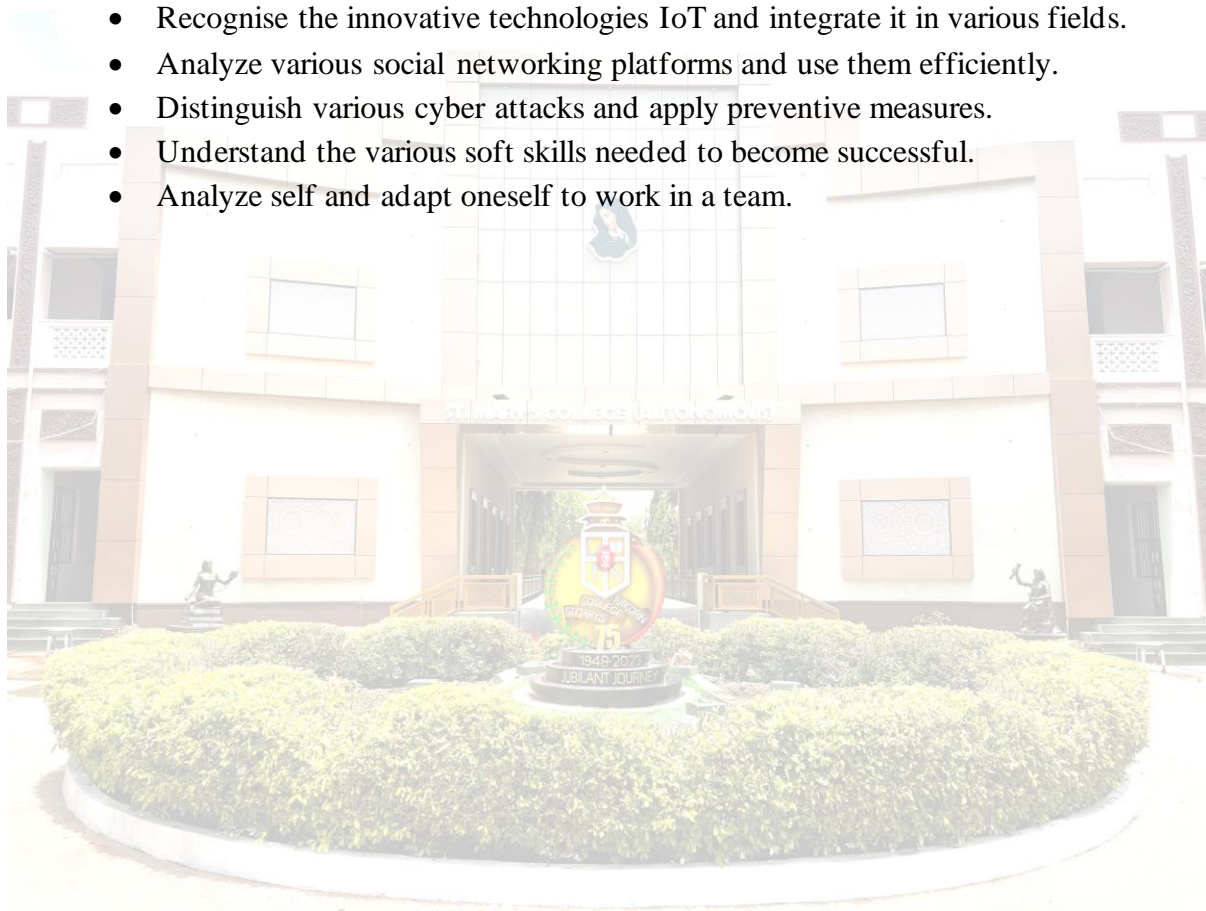
**Hrs / Week : 2**

**Hrs / Sem : 30**

**Credits : 2**

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



Semester – V	
Self-Study/Online Course/Internship (Optional)      Science Fiction	
Course Code: 21UENSS3	Credits :2

**Course Outcome:**

CO No.	Upon completion of this course students will be able to	PSO addressed	CL
CO-1	understand how science and technology influence the world of Literature	2	Un
CO-2	have a critical perspective of the future scene of the world	3	An
CO-3	interpret the stylistic features of science fiction writings	6	Ev
CO-4	apply the caution stated in the studies to safeguard interests of the humans and the earth	5	Ap
CO-5	compare and contrast the advantages and disadvantage of science in its global context	3	Ap
CO-6	seek solution in humanism as an ultimatum to resolve technological and scientific issues	5	Ap,Ev,Cr



**SEMESTER VI****Core XII****Women's Writing****Course Code: 21UENC62****Hrs/Week: 6****Hrs/Semester: 90****Credits: 4****Course Outcome:**

CO No.	Upon completion of this Course, students will be able to	PSO addressed	CL
CO 1	understand the role of women in Literature	2	Un
CO 2	interpret women's writings across cultures.	6, 7	An
CO 3	analyse gender perspectives in writings	4	An
CO 4	evaluate the artistic and intellectual contributions of women to literature.	2, 4	Ev
CO 5	identify the marginalization of women in society.	2, 5	Ev
CO 6	construct and reorient the identity of women through creative writing.	8, 5	Cr



SEMESTER-VI			
Core XIII		New Literatures in English	
Course Code: 21UENC63	Hrs/ week :6	Hrs/ Semester: 90	credits :4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire knowledge about contemporary literature across cultures.	1, 2	Un
CO-2	understand texts in their cultural and historic contexts.	1	Un
CO-3	identify the various themes present in New Literatures in English.	1	Un, Ap
CO-4	develop a critical understanding of how literature can both uphold and resist existing structures of power.	8	Un, An
CO-5	critically analyse different literary texts across cultures	6	An
CO-6	evaluate the diversity of literary and social voices.	1, 2	Ev

**SEMESTER-VI****Core XIV****World Literatures in Translation****Course Code: 21UENC64****Hrs / Week: 6****Hrs/ Semester: 90****Credits : 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the literary genres of World Literatures through translation.	2	Un
CO-2	infer a comprehensive knowledge of diverse cultures and values expressed	2	Un
CO-3	relate the translation theories and interpret literatures accordingly	1	Ap
CO-4	explore the psychological dimensions and approaches of writers to human existence	4	An
CO-5	analyze the aesthetic philosophy and spiritual values expounded in world literature	8	An
CO-6	estimate the conventions and ideologies of world's greatest writers and comprehend the philosophy stated.	6	Ev

**SEMESTER VI****Core XV****Diasporic Literary Studies****Course Code: 21UENC65****Hrs/Week: 6****Hrs/Sem: 90****Credits:4****Course Outcome:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the problem of exile and displacement	2	Un
CO-2	comprehend the significant features of diasporic literature.	2	Un
CO-3	identify and interpret the representative works of the writers of diaspora.	2, 4	An
CO-4	appraise the significant themes and literary devices employed by the major writers.	4	Un, Ev
CO-5	interpret the historical perspective of diasporic literature.	4, 8	An
CO-6	formulate imagination to a wider range of voices across cultures.	2, 6	Ap, Cr



Semester VI			
Project			
Course Code : 21UENP61	Hrs / Week : 6	Hrs / Sem : 90	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand the fundamentals of Research process in characterizing, instantiating, and critiquing the dominant critical theories, methodologies, and practices in the field.	2	Un
CO-2	cultivate research culture by combining theory with practical application for an exceptional professional foundation.	2	Ev
CO-3	interpret new literary works to build broad-based knowledge and skills necessary to fulfil their goals.	7	Ev
CO-4	evaluate critically the sources they find and develop the thesis into a well-supported argument.	6	Ev
CO-5	formulate an original, increasingly analytical thesis of their own.	7	Cr
CO-6	document and present their work in accordance with the concepts of research methodology.	8	Cr



**Programme: M.A. English Literature**

<b>SEMESTER – I</b>			
<b>Core I</b>		<b>British Poetry</b>	
<b>19PENC11</b>	<b>Hrs / Week: 6</b>	<b>Hrs / Semester: 90</b>	<b>Credits: 4</b>

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	discuss British poetry from the earliest era to the modern	4	Un, An
CO-2	understand social, political and intellectual contexts of Elizabethan England	1	Un, An
CO-3	analyse the influences of a variety of cultures on the development of early British Literature	3	Re, An
CO-4	distinguish the artistry of early British poets	2	Re, An
CO-5	originate the impetus to master the literary canon of the representative poets	1, 2	Un, Ap, An
CO-6	cultivate in them the impetus to master the representative writers	8	Un, Ap
CO-7	develop their abilities to interpret, analyze and evaluate poems in the perspective of literary history and theory	2	Ap, Ev
CO-8	build knowledge of the content and methods of literary studies	3	Re, Un

**SEMESTER - I****Core II****British Prose****19PENC12****Hrs / Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	display a working knowledge of the historical and cultural contexts of British prose pieces.	1	Un, An
CO-2	identify and describe distinct literary characteristics of British prose.	2	Re, An
CO-3	relate the greatness of major prose writers and their relationships to the significant literary traditions of their time.	4	Un, Ap
CO-4	communicate ideas related to the distinct characteristics of British prose.	7	An, Ev
CO-5	classify the dimensions of British Literature in the universal context.	6	An
CO-6	acquire a comprehensive knowledge of British prose.	3	Un
CO-7	cultivate necessary impetus to study more of the representative prose writers.	1, 2	Ap, Cr
CO-8	label the characteristics of literature in English from the contemporary literary historical period and culture.	3, 4	An, Ev

**SEMESTER – I****Core IV****American Literature****19PENC14****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	explain the historical and literary contexts, genres and themes and ethical dimensions of representative works of American literature.	2	Re, Un
CO-2	survey a diverse group of authors and reveal the evolving American experience and character.	3	An, Ev
CO-3	analyse major movements and figures of American Literature.	5	An
CO-4	discuss the strengths, limitations, and cultural assumptions of various literary forms practised in America.	4	Un, An
CO-5	evaluate the roles which gender, race, age, class, ethnicity and geography have played in creating American ethnic literature.	6	An, Ev
CO-6	understand the dimensions of American Literature in the universal context.	1, 2	Un
CO-7	acquire a historical and socio-cultural background of American Literature.	3	Un
CO-8	critically examine the works of representative writers of American Literature.	1	Ap, An



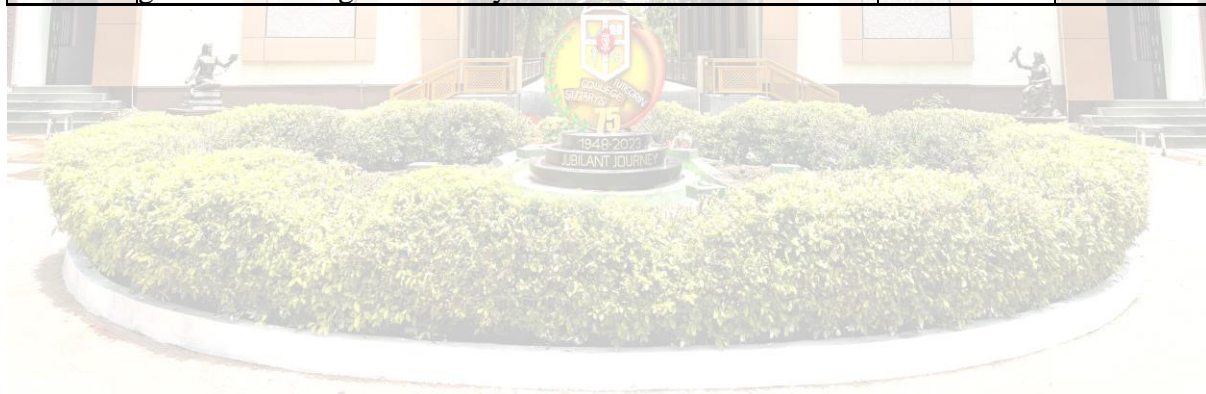
## SEMESTER - I

### Elective I      B      English Literature for Career Advancement

<b>19PENE11</b>	<b>Hrs / Week: 4</b>	<b>Hrs / Semester: 60</b>	<b>Credits: 3</b>
-----------------	----------------------	---------------------------	-------------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	demonstrate a broad knowledge of major and minor authors, major texts and contexts.	7	Un, Ap
CO -2	formulate an excellent foundation for a very wide range of careers.	8	Cr
CO -3	develop expertise ideally suited to a range of careers in the age of information.	6	An, Cr
CO -4	improve the objective knowledge of the subject required for the career paths.	10	An, Ev
CO -5	modify competencies necessary for success in the job market, or in furthering their academic career.	9	Ev, Cr
CO – 6	prepare themselves for a career.	5, 6	Cr
CO – 7	face NET/SET and other competitive examinations.	6, 7	Re, Ap
CO - 8	Appreciate and enjoy the rich cultural background and grandeur of English Literary trends.	6	Un, An



SEMESTER – II			
Core V		British Drama	
Code : 19PENC21	Hrs/week : 6	Hrs/sem : 90	Credits : 4

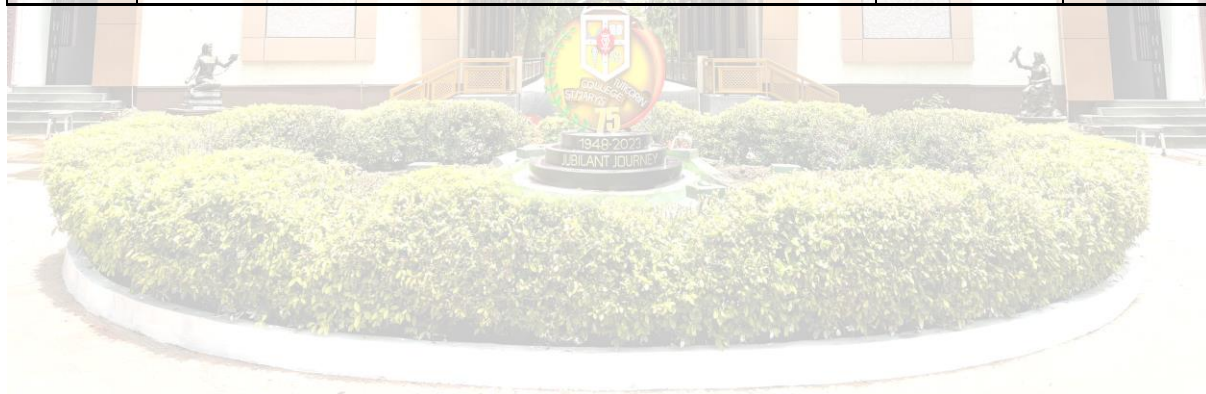
### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze representative dramas in British Literature	1	An
CO-2	develop methods for critical interpretation through reading	3	Ap
CO-3	discuss the aesthetic, cultural and historical aspects of British Drama	4	An
CO-4	value the artistic and innovative use of language employed by the representative dramatists	5	Ev
CO-5	improve the skills of critical thinking, elucidation and effective writing	8	Cr
CO-6	enhance critical outlook on the representative dramatists	7	Cr
CO-7	get a comprehensive picture of the contemporary age	3	Un
CO-8	analyze the unique difference in the theme and stylistic features of British Drama	5	An

SEMESTER –II			
Core VI		Critical Theory-I	
Code : 19PENC22	Hrs/week : 6	Hrs/sem : 90	Credits : 4

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze theories of various early schools of criticism	8	An
CO-2	apply literary terminology for narrative, poetic and dramatic genres	5	Ap
CO-3	modify their perspectives of various trends in criticism	4	Ev
CO-4	assume a greater sense of how rhetoric and literary principles function to shape society and culture	3	Ev
CO-5	make use of critical theories to interpret literary texts	8	Ap
CO-6	apply theories of various schools of criticism	6	Ap
CO-7	interpret literary texts with literary theories	1	Cr
CO-8	develop their critical perspectives of various trends	5	Ap



Semester – II			
Core VII		Women's Writing	
Code : 19PENC23	Hrs/week : 6	Hrs/sem : 90	Credits : 4

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	spell the range of feminist perspectives on literature	8	Re
CO-2	explore the writer's philosophy, aesthetics and techniques	4	Ev
CO-3	analyse women writers from the sixteenth to the twentieth century, who wrote about womanhood and authorship	1	An
CO-4	classify the changing role women have experienced culturally, sexually, and psychologically through their writing	3	Ev
CO-5	discuss the women writers who challenged gender stereotypes and questioned the patriarchal status quo	6	An
CO-6	explore the ideologies of women writers across cultures	1	Cr
CO-7	understand the nuances of women's writings in English	2	Un
CO-8	discuss questions of social conflict as they are reflected in works of literature	4	An



Semester – II			
Core VIII		Religion and Literature	
Code : 19PENC24	Hrs / Week :4	Hrs / Sem : 60	Credits :4

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop and apply critical toolkit to the study of religion and religious traditions	2	Ap
CO-2	understand and interpret religious traditions by examining religion as historical, social and cultural phenomena	3	Un
CO-3	explore philosophical, psychological and cognitive dynamics of religion	1	Ev
CO-4	focus on the plurality of religious voices and expressions	2	Un
CO-5	evaluate the significance of certain literary works in shaping larger social, cultural and historical contexts	3	Ev
CO-6	interpret and explain religion emphasizing systematic, historically based and cross cultural perspectives	3	An
CO-7	demonstrate how social, cultural contexts influence the construction of literary works	8	Cr
CO-8	distinguish among various kinds of evidence by identifying reliable sources and valid arguments	4	An



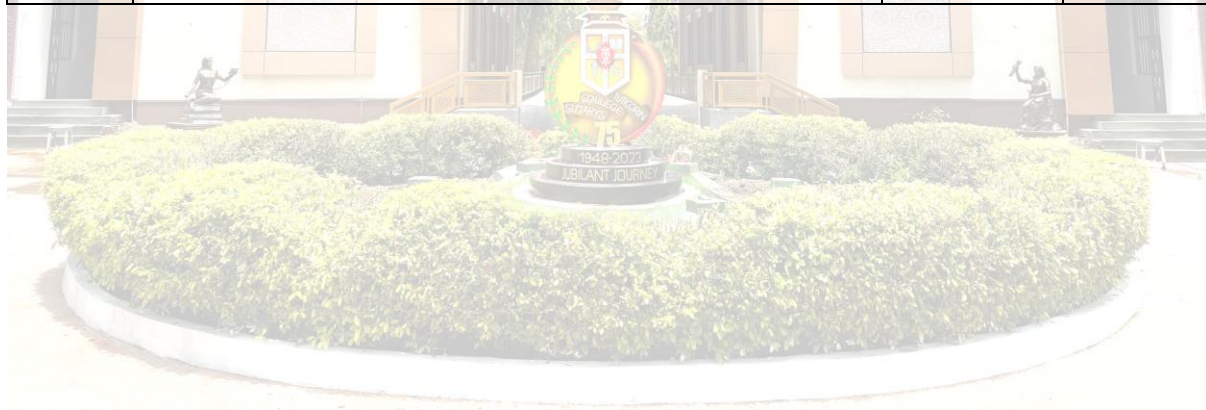
**SEMESTER – II****Elective III A****Psychology and Literature****Code : 19PENE21****Hrs/week : 4****Hrs/Sem : 60****Credits : 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	assess the ways in which various aspects of identity, subject positions and affiliations influence the development of literary traditions	3	Ev
CO-2	appraise how race, gender, class and sexuality influence psychology concepts and literature	4	An
CO-3	develop an understanding of the various types of development that an individual experiences across the life- course	6	Un
CO-4	demonstrate an understanding of human experiences through the study of literature	2	Ap
CO-5	analyze and relate psychological theories in literary context	1	An
CO-6	critically examine the relation between life and literature	3	Ev
CO-7	understand the depth and range of psychologists' unique vision	1,3	Un
CO-8	critically evaluate literary writings in its modern context	1	Ev

SEMESTER – II			
Elective III	B	Communication Skills	
Code 19PENE21	Hrs/Week :4	Hrs/Sem :60	Credits: 3

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	display competence in oral, written and visual communication	2	Ap
CO-2	originate a uniquely practical and creative grasp of the English language	3	An
CO-3	demonstrate appropriate and professional ethical behaviour	2	Ap
CO-4	expose themselves to various forms of personal and professional communication	4	Un
CO-5	hone effective communication skills in a modern, globalised context	5	Cr
CO-6	prepare themselves for a career	6	Cr
CO-7	develop artistic and innovative use of language	8	Cr
CO-8	enhance their literary and linguistic competence	6	Cr



SEMESTER – II			
Elective IV	A	English Language Teaching	
Code: 19PENE22	Hrs/Week :4	Hrs/Sem :60	Credits: 3

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	compare and contrast language structures and explain the relationship between language and literature	1	Ev
CO-2	originate a uniquely practical and creative grasp of the English language	5	Cr
CO-3	develop pedagogic skills required for teaching English	8	Ap
CO-4	adapt methods of teaching English for different levels	5	Ap
CO-5	appraise the ways in which the content could be taught through whole class activities, pair work and small group or individual activities	3	An
CO-6	prepare themselves for a career	6	Ev
CO-7	develop artistic and innovative use of language	6	Ap
CO-8	enhance their literary and linguistic competence	8	Cr





SEMESTER – II			
Elective IV	B	Comparative Literature	
Code 19PENE22	Hrs/Week :4	Hrs/Sem :60	Credits: 3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	gain knowledge on the study of Indian Literature and the importance and influence of European language and literature on the Indian language and literature	1	Un
CO-2	look beyond the national frontiers of languages and cultures	2	Un
CO-3	examine the divides that exist between tradition and modernity	4	Ev
CO-4	understand literature across linguistic and cultural borders	3	Un
CO-5	analyze the methodological problems in the practice of comparative literature	7	An
CO-6	explore the global diversity of literary forms	6	Cr
CO-7	acquaint themselves with a broad range of interdisciplinary and cross cultural perspectives	8	Un
CO-8	respond articulately to literary works both orally and in writing	7	Ev



SEMESTER III			
Core IX		British Fiction	
Code : 19PENC31	Hrs / Week : 6	Hrs / Sem : 90	Credits : 4

**Course Outcome:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the social and cultural background of the British writers.	1,2	Un
CO-2	analyse the socio-cultural problems reflected in the novels	5	An
CO-3	acquire a comprehensive knowledge of British novels.	2	Un, An
CO-4	relate how language shapes human understanding.	4	An
CO-5	differentiate the uniqueness of British fiction from their counterparts belonging to other nationality.	4,5	Ap
CO-6	develop a fascination to write fiction.	5	An
CO-7	evaluate the theme and the nuances of narrative techniques employed in British fiction.	7,8	An
CO-8	modify their perspective of reading and to kindle the spirit of doing research.	6,7,8	Cr

SEMESTER III			
Core X	Critical Theory – II		
Code : 19PENC32	Hrs / Week : 6	Hrs / Sem : 90	Credits:4

**Course Outcome:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand different schools of criticism	1	Un
CO-2	evaluate literary texts with a critical outlook	2	Ev
CO-3	develop the ability to apply the theories in their endeavour on an in depth study of a literary text.	8	Cr
CO-4	analyse recent developments in complex critical theories.	6	An
CO-5	interpret literary texts based on the knowledge of the critical theories.	5	Ap
CO-6	locate the dominance of either the creative faculty or the critical faculty present within them	3	Un
CO-7	define the function of theories in literary works.	5	Re
CO-8	read text between lines.	8	Ev

**SEMESTER III****Core XI****Study of the English Language****Code : 19PENC33****Hrs / Week : 6****Hrs / Sem : 90****Credits : 4****Course Outcome:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the phonological aspects of English Language	2	Un
CO-2	evaluate the relationship between phonetics and phonology.	5	Ev
CO-3	construct grammatically correct sentences	6	Cr
CO-4	imbibe an in depth knowledge of the phonology of the English language	3	Ap
CO-5	enhance writing competency	6	Cr
CO-6	categorise the different types of phonemes.	4	An
CO-7	identify the basic units of phonology.	4	An
CO-8	explain distinctive feature theory.	2	Un



SEMESTER III			
Core XII		Research Methodology	
Code : 19PENC34	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcome:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the process involved in writing a thesis.	5	Un
CO-2	apply and incorporate the mechanics of writing while writing research papers	4	Ap
CO-3	learn how to document the collected sources.	6	Re
CO-4	develop the ability to identify the different forms of plagiarism and avoid them in writing.	2	Re
CO-5	organise the research paper coherently.	8	Cr
CO-6	design quality research papers.	8	Cr
CO-7	edit research articles.	8	Cr
CO-8	define the purpose of research.	4	Re



**SEMESTER III****Elective V      A                      Translation: Theory and Practice****Code : 19PENE31B****Hrs / Week : 4****Hrs / Sem : 60****Credits : 3****Course Outcome:**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>C L</b>
CO-1	evaluate the history of translation of works	4	Un
CO-2	apply the various theories and techniques of translation while translating a literary piece.	6	Ap
CO-3	locate and synthesise cultural complexities involved in translation.	8	Co
CO-4	evaluate the resultant change of meaning evolved in the process of translation.	2	Ev
CO-5	develop their ability to translate.	6	Re
CO-6	compile new terms of expression from different fields.	3	Re
CO-7	interpret the difficulties involved in translation.	5	Un
CO-8	evaluate personal language skills.	4	Ev

**SEMESTER III****Elective V      B      Transformational Generative Grammar****Code : 19PENE31****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcome:**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>C L</b>
CO-1	evaluate the linguistic aspects of English Language	1	Ev
CO-2	interpret the structure of English language	5	Ap
CO-3	formulate grammatically correct sentences	8	Cr
CO-4	imbibe an in depth knowledge of the morphology of the English language	3	Ap
CO-5	enhance writing competency	8	Cr
CO-6	categorise the structure of the Phonemes.	4	An
CO-7	compile analytically the different types of Morphemes.	6	An
CO-8	analyse syntactic theories.	2	An

**SEMESTER III****Elective VI****A Travel Literature****Code : 19PENE32****Hrs / Week : 4****Hrs / Sem : 60****Credits : 3****Course outcome:**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	read the rhetoric of travel writing.	4	Un
CO-2	demonstrate a sound knowledge of the various primary sources studied.	6	Ap
CO-3	develop their critical thinking and reach conclusions both about the society observed and the subjectivity of the observer in the prescribed texts.	6	Re
CO-4	analyse the theoretical issues involved in using colonial and travel literature as a source.	2	An
CO-5	evaluate the concepts and issues such as race, gender, class, caste, criminality coercion, resistance, identity etc.	2	Ev
CO-6	interpret different historical methodologies, travel texts theoretical properties.	5	Ap
CO-7	locate the theoretical positions of 'gaze' and there by infer as to how it infiltrates the society at large.	8	Co
CO-8	disseminate the acquired knowledge of the uniqueness of other cultures worldwide to their own.	4	An



**SEMESTER III****Elective VI****B Detective Fiction****Code : 19PENE32****Hrs / Week : 4****Hrs / Sem : 60****Credits : 3****Course Outcome:**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	recognize genre conventions specific to detective fiction across different media forms.	2	Re
CO-2	understand critical dialogues surrounding detective fiction.	5	Un
CO-3	analyse the distinct features of detective fiction.	6	Cr
CO-4	adapt the innovative techniques and themes used in detective fiction.	3	Ap
CO-5	identify and appreciate the uniqueness of individual writers	6	Ev
CO-6	enhance the cognitive level of the students.	4	Co
CO-7	compare and contrast the special feature of the literary pieces with the literary works of other ages.	4	An
CO-8	write critical and comparative essays based on the core concepts learnt.	2	Ap

SEMESTER IV			
Core XIII		Shakespeare	
Code:19PENC41	Hrs / Week: 6	Hrs / Sem:90	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	demonstrate mastery of the discipline by understanding the social and intellectual background of Shakespeare.	1,2	Un
CO-2	analyse the cultural problems that reflect an insight into the relevant, historical, traditional and social contexts.	5	An
CO-3	infer a comprehensive knowledge of the dramatic and the poetic structures in Shakespeare's work.	2	Un, An,
CO-4	relate how language shapes human understanding.	4	An
CO-5	implement Shakespeare's works in the modern context— involving the structuralist, existentialist and linguistic approaches.	4,5	Ap
CO-6	differentiate the distinctiveness of Shakespeare's plays with special reference to the immortal characters he has created intuitively.	5	An
CO-7	distinguish Shakespearean philosophy, feminism, aesthetics and techniques.	7,8	An
CO-8	create an ability to reconstruct the dramatic and theatrical conventions of his craftsmanship.	6,7,8	Cr

**SEMESTER IV****Core XIV****Canadian Literature****Code: 19PENC42****Hrs/ Week: 6****Hrs / Sem: 90****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	demonstrate mastery of the history and background of Canadian Literature.	1	Ap
CO-2	develop comprehensive knowledge by combining theory with practical application for a wider understanding of Canadian Literature.	2,6	Ap, Cr
CO-3	develop an ability to recognize and identify the uniqueness of Canadian Literature.	6	Cr
CO-4	analyse the themes of cultural identity with that of the socio economic conditions of Canada.	5	An
CO-5	perceive, categorise, interpret and dramatise the characters, dramatic situations and devices used.	9	Ev
CO-6	appraise, differentiate and distinguish the magnitude of Canadian literary genres with that of other Literatures.	5	Ev
CO-7	make use of theory as a lens for thinking critically the central aspects of Canadian culture and the complexities of Canadian society.	3	Ap
CO-8	modify high-level applied, active learning experiences to bring out the new avenues for future research work.	8	Cr

**SEMESTER IV****Core XV****New Literatures in English****Code: 19PENC43****Hrs/ Week: 5****Hrs/ Sem:75****Credits : 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to:	PSO addressed	CL
CO-1	demonstrate diverse genres of various countries and develop a taste for New Literatures across cultures.	1	Un, Ap
CO-2	infer a comprehensive knowledge about the problems related to the early days of colonization and the challenges faced by the early settlers.	2	An
CO-3	develop an ability to recognize the universality of the representative writers and their works through critical thinking.	6	Cr
CO-4	make use of theory to value the social inequities of various cultures.	3	Ap
CO-5	analyse, examine, interpret, adapt and evaluate the characters, of various cultures through critical thinking .	6	An, Cr
CO-6	appraise, categorise and distinguish the writers of new literatures and enjoy various cultures through their works.	9	Ev
CO-7	develop habits to evaluate, judge and assess the concept of hybridity and cultural plurality, to recognize the complexities in every culture.	6	Cr
CO-8	develop a critical understanding of how literature can both uphold and resist existing structures of power.	6	Cr



SEMESTER IV			
Core XVI		World Literature in Translation	
Code: 19PENC44	Hrs / Week: 5	Hrs/ Sem:75	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	demonstrate mastery of the literary genres of World Literatures through translation.	1	An
CO-2	infer a comprehensive knowledge of the diversity of cultures.	2	Un
CO-3	build broad-based knowledge and skills necessary to recognize professional goals.	7	Cr
CO-4	make use of theory to comprehend the values behind every work.	3	Ev
CO-5	relate the connections among theories and principles to examine the various interpretations and methods adopted.	4	An
CO-6	appraise, categorise, enjoy and practice the values of various cultures on their own.	5,6	Ev
CO-7	develop habits to evaluate, revise and estimate the conventions and ideologies of world's greatest writers and comprehend the philosophy put forth.	6	Cr
CO-8	formulate professional activities, like producing a variety of academic and multimodal genres, proposals, presentations, reports, and review essays.	8,9,10	Cr

**SEMESTER IV****Project and Viva-Voce****Code: 19PENC45****Hrs/ Week: 8****Hrs/ Sem:120****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
<b>CO-1</b>	make use of the critical theories to perceive how to write papers in literature.	3,9	Ap, Ev
<b>CO-2</b>	Acquaint with the fundamentals of Research process in characterizing, instantiating, and critiquing the dominant critical theories, methodologies, and practices in the field.	2	Un
<b>CO-3</b>	Cultivate research culture by combining theory with practical application for an exceptional professional foundation.	2	Ev
<b>CO-4</b>	Interpret new literary works to build broad-based knowledge and skills necessary to fulfil their goals.	7	Ev
<b>CO-5</b>	Formulate an original, increasingly complex thesis of their own.	6	Cr
<b>CO-6</b>	Evaluate critically the sources they find.	6	Ev
<b>CO-7</b>	Develop the thesis into a well-supported argument.	6	Cr
<b>CO-8</b>	Document and present their work in accordance with the concepts of research methodology.	10	Cr

**SEMESTER – I****Core IV****American Literature****Course Code : 21PENC14****Hrs / Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	locate the significance of the American literary tradition and examine the works of the representative writers of American Literature	1,2,4	Un
CO-2	articulate the historical and the socio-cultural background of American Literature.	2,3	Ap
CO-3	appraise the historical and literary contexts, genres, themes and ethical dimensions of the representative works of American literature.	2,4	An
CO-4	distinguish a diverse group of authors and reveal the evolving American experience and character.	1,3	An
CO-5	analyse the major movements and works of American Literature and evaluate the strengths and limitations of the major trends in American Literature.	4,5,7	An, Ev
CO-6	review the roles of gender, race, age, class, ethnicity and geography in creating American ethnic literature.	6,8	Ev

**SEMESTER – II**

**Core VI****British Drama****Course Code : 21PENC21****Hrs/week :5****Hrs/Sem : 75****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO Addressed</b>	<b>Cognitive Level</b>
CO-1	apply the concepts of British Drama in drafting a play.	4	Ap
CO- 2	analyse the representative plays in British Literature	1	An
CO- 3	compare the aesthetic, cultural and historical aspects of British Drama.	3,8	An
CO- 4	evaluate the artistic and innovative use of language employed by the representative dramatists.	6	Ev
CO- 5	improve the skills of critical thinking, elucidation and effective writing.	6	Cr
CO- 6	develop the required employability skills to meet the demands of creative industries.	7	Cr

**SEMESTER II**

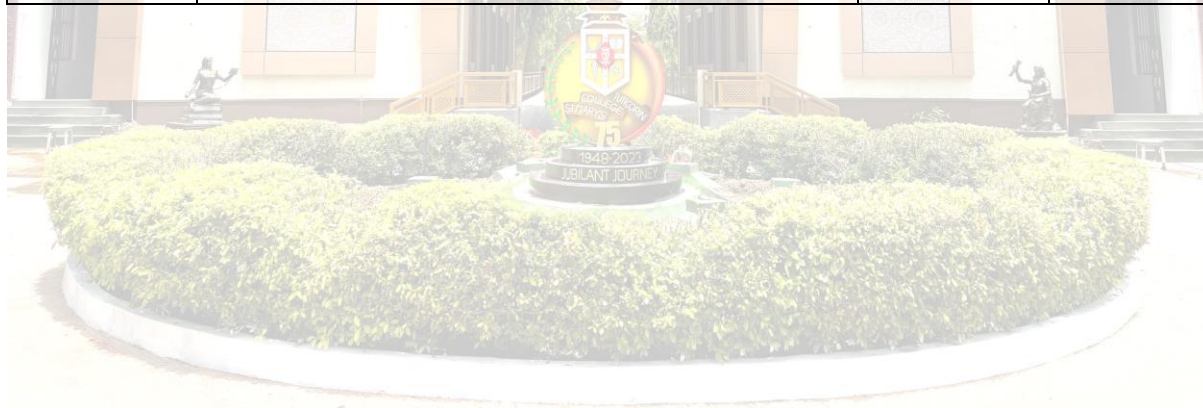


**Core VII****Approaches to Literary Criticism**

<b>Course Code: 21PENC22</b>	<b>Hrs / Week : 5</b>	<b>Hrs / Sem : 75</b>	<b>Credits : 4</b>
------------------------------	-----------------------	-----------------------	--------------------

**Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	comprehend theories of various early approaches of criticism.	1	Un
CO-2	develop critical perspectives to interpret literary texts.	2, 3	Un, Ap
CO-3	apply theoretical approaches in research and creative inputs.	5, 6	Ap
CO-4	apply literary approaches for narrative, poetic and dramatic genres.	2, 4	Ap
CO-5	interpret and modify the socio-cultural and psychological contexts of humankind to better living.	8	Ev
CO-6	assess the functioning of rhetoric and psychology in literature and society for employability.	7, 6	Ev



Semester – II			
Core VIII		Women's Writing	
Course Code: 21PENC23	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the uniqueness of women's writing.	1	Un
CO-2	discuss the social and cultural conflicts in women's writings.	3	Un
CO-3	classify the role of women in the current global scenario .	2, 8	Ap
CO-4	analyze the ideology of women writers who challenged gender stereotypes and the patriarchal status quo.	4	An
CO- 5	examine the themes and narrative techniques in the works.	6	An
CO-6	analyse womanhood and women writers from the 16 <sup>th</sup> to the 20 <sup>th</sup> Century	2,6	An

Semester – II			
Core IX		Religion and Literature	
Course Code: 21PENC24	Hrs /Week : 5	Hrs / Sem : 75	Credits :4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	apprehend and accept all religions as traditional and cultural phenomena.	2	Un
CO- 2	critically analyse the religious components in literature.	1	An
CO- 3	analyse the spiritual dynamics of relationship between God and humans.	8	An
CO- 4	explore and interpret philosophical, psychological and cognitive dynamics of religion.	1,3	Ev
CO- 5	spot out the essential values of mankind.	3	Ev
CO- 6	evaluate the significance of literary works in shaping the society.	8	Ev

**SEMESTER – II****Core X****Psychology and Literature****Course Code : 21PENC25****Hrs / Week : 5****Hrs / Sem : 75****Credits : 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the various types of development that an individual experiences in life.	2	Un
CO-2	understand the depth and range of psychological theories and analyse the texts based on psychological and literary theories	2, 3	Un
CO-3	demonstrate the understanding of human experiences through the study of literature.	4	Ap
CO-4	appraise how race, gender, class and sexuality influence the consciousness of human beings.	6	An
CO-5	assess the ways in which various aspects of identity, subject positions and affiliations influence literary traditions	3	An
CO-6	evaluate literary writings in the psychological perspective.	6	Ev



## SEMESTER – II

### Core Elective 1 English Language Teaching: Methods and Practices

Course Code: 21PENE21

Hrs / Week: 5

Hrs / Semester: 75

Credits: 4

#### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO- 1	perceive the pedagogical skills and the various approaches in learning English language for employability.	7	Un
CO- 2	adapt to different methods of teaching English.	4	Ap
CO- 3	develop the artistic and innovative use of language.	4,7	Ap
CO- 4	to assess the various teaching methods.	1	Ev
CO- 5	design a practical and creative method of teaching the English language.	7	Cr
CO- 6	enhance their literary and linguistic competence.	6	Cr

Semester III			
Core XI		British Fiction	
Course Code : 21PENC31	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the social and cultural background of the British culture	1	Un
CO-2	analyse the socio-cultural problems reflected in the novels	3	An
CO-3	relate how British novels bring in ideology to shape human understanding	2, 6	An, Ev
CO-4	develop critical thinks and review of British writing	3, 4	Un, Ap
CO-5	analyse and evaluate the themes and nuances of narrative techniques employed in British fiction	3, 8	Ev
CO-6	formulate creative and research writing	5, 6	Cr, An, Ap



**Semester III****Core XII****Recent Trends in Critical Theory****Course Code : 21PENC32****Hrs / Week :5****Hrs / Sem : 75****Credits : 4****Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO-1	understand the theoretical implications of recent critics	1	Un
CO-2	explore new knowledge of cultural space and identity in literary texts	2	An
CO-3	develop the faculty of analytical thinking and research for higher learning	2, 4, 6	An, Un
CO-4	analyze the role of the reader and responses to texts	2, 6	An
CO-5	apply the theories and approaches to the close reading of texts to better human perception.	3, 8	Ap
CO-6	interpret attitudes and prevalent notions of national and socio-cultural consciousness	8	Ev, Ap

Semester III			
Core XIII	Research Methodology		
Course Code : 21PENC33	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No.	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	define and compile the features of Research Writing	6	Un
CO-2	practise and relate the mechanics of MLA style to organize research papers coherently	7	Un, An
CO-3	relate the aspects of creating documentation of a research paper	2	An
CO-4	distinguish the overall knowledge on the techniques of documentation	8	An
CO-5	classify the principles of documentation, edit and proof read research articles	5	Ap
CO-6	develop the ability to identify the different forms of plagiarism and avoid them in research writing.	6	Cr



Semester III			
Core XIV		Canadian Literature	
Course Code : 21PENC34	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	analyse the themes of cultural identity with the socio-economic conditions of Canada.	2	An
CO-2	appraise and distinguish the magnitude of Canadian literary genres with other Literatures.	6	An
CO-3	analyse how Canada's history and geography compliment its literature	5	An
CO-4	evaluate the use of theory as a lens critically analysing the central aspects of Canadian culture and the complexities of Canadian society.	8	Ev
CO-5	develop the ability to recognize and identify the uniqueness of Canadian Literature	1	Cr
CO-6	formulate tendencies and trends that embody English Canadian writing	3	Cr

Semester III			
Core XV		South Asian Writings in English	
Course Code : 21PENC35	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO - 1	understand South Asian texts in the historical and cultural contexts.	1	Un
CO - 2	discuss various South Asian Literatures and their traditions with a critical outlook.	2	Un
CO - 3	predict critically and creatively about the cultural politics of South Asian writings in English	2,3	Ap
CO - 4	demonstrate awareness of British imperialism and the experiences of immigration as reflected in South Asian writings.	3, 8	Ap
CO - 5	examine themes of colonialism, identity, assimilation and resistance in literary texts.	5, 6	An
CO - 6	discriminate the geographical, linguistic, cultural, religious, racial and other differences among South Asian writers.	2, 6	Ev

Semester III			
Core Elective II		Translation: Theory and Practice	
Course Code : 21PENE31	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the history of translation of works	1	Un
CO-2	apply various theories and techniques of translation while translating a literary texts	6	Ap
CO-3	locate and synthesize cultural complexities involved in translation.	8	An
CO-4	analyse the resultant change of meaning evolved in the process of translation.	2	Ev
CO-5	critically review the thematic and technical aspects of translated texts.	4	Ev
CO-6	develop the ability to translate and compile new terms of expression from different fields.	3	Cr

Semester III		
Self Study Course / MOOC	Travel Literature	
Course Code : 21PENSS31		Credits : 2

**Course Outcome:**

CO. No.	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	comprehend the richness of travel literature through historical methodologies.	1	Un
CO-2	apply the acquired knowledge of the uniqueness of other cultures worldwide.	7, 8	Ap
CO-3	differentiate the socio-cultural spaces inherent in texts.	2	An
CO-4	analyse the theoretical issues involved in using colonial and travel literature as a source.	6	An
CO-5	evaluate the concepts and issues such as race, gender, resistance and identity.	6, 8	Ev
CO-6	develop critical thinking and subjectivity of an observer.	3	Cr



Semester IV			
Core XVI		Shakespeare	
Course Code : 21PENC41	Hrs / Week : 6	Hrs / Sem : 90	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO's addressed	CL
CO-1	demonstrate mastery of the discipline by understanding the social and intellectual background of the age.	1,2	Un
CO-2	teach Shakespearean philosophy, feminism, aesthetics and techniques reflecting on the critical reviews.	4	Ap
CO-3	dramatise Shakespeare's unique vision with special reference to the immortal characters he has created for journalistic, commercial, technical, and web-based writing.	5	Ap
CO-4	implement Shakespeare's works in the modern context— involving the structuralist, existentialist and linguistic approaches for research and critical writing.	6	An
CO-5	infer a comprehensive knowledge of the dramatic and the poetic structures in Shakespeare's work and relate how language shapes human values and human identity.	3,5	An
CO-6	create the ability to reconstruct the dramatic and theatrical conventions of his craftsmanship to theatrical, dramatic and commercial purposes.	5	Cr

Semester IV			
Core XVII		Study of the English Language	
Course Code : 21PENC42	Hrs / Week : 6	Hrs / Sem : 90	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	understand the change of meaning of words over a period of time and the influence of other languages in English	1	Un
CO-2	use correct Stress and Intonation to speak English with good pronunciation.	8	Ap
CO-3	articulate words from different languages with the help of phonetic transcription	2	Ap
CO-4	imbibe an in-depth knowledge of the phonology of the English language	4	An
CO-5	designate the place and manner of articulation of phonemes in the English language and categorize speech sounds into various types.	6	An
CO-6	critically evaluate the significant the growth of the English language	5	Ev

**Semester IV****Core XVIII****Post-Colonial Writings in English****Course Code : 21PENC43****Hrs / Week : 6****Hrs / Sem : 90****Credits : 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop a critical understanding of how literature can both uphold and resist the existing structures of power.	4	Un, Ap, An
CO-2	analyse the postcolonial texts in their historical and cultural contexts and investigate the problems related to colonization and the challenges faced by early settlers.	1, 4	An
CO-3	appraise and distinguish Postcolonial Literatures on the concepts of ambivalence, mimicry and hybridity.	6	Un, Ev
CO-4	synthesize multiple sources of postcolonial research and extend a textual analysis	2	Ev, An
CO-5	interpret the questions of human identity and values with a sense of intellectual independence.	3	Ap, An
CO-6	analytically teach Postcolonial Literature in its relationship with culture, racism, migration and diaspora colonialism, nationalism, citizenship and cosmopolitanism.	8	Cr, An

Semester IV			
Project			
Course Code : 21PENP41	Hrs / Week : 6	Hrs / Sem : 90	Credits : 6

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	acquaint with the fundamentals of Research process in characterizing and critiquing the dominant critical theories, methodologies, and practices in the field.	2	Un
CO-2	cultivate research culture by combining theory with practical application.	2	Ev
CO-3	interpret new literary works to build broad-based knowledge and skills.	4	Ev
CO-4	formulate an original and increasingly analytical thesis.	6	Cr
CO-5	develop the thesis into a well-supported argument.	6	Cr
CO-6	document and present their work in accordance with the concepts of research methodology.	7	Cr



**Programme: M. A. English Literature– Batch II**

<b>SEMESTER – I</b>			
<b>Core I</b>		<b>British Poetry</b>	
<b>19PENC11</b>	<b>Hrs / Week: 6</b>	<b>Hrs / Semester: 90</b>	<b>Credits: 4</b>

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	discuss British poetry from the earliest era to the modern	4	Un, An
CO-2	understand social, political and intellectual contexts of Elizabethan England	1	Un, An
CO-3	analyse the influences of a variety of cultures on the development of early British Literature	3	Re, An
CO-4	distinguish the artistry of early British poets	2	Re, An
CO-5	originate the impetus to master the literary canon of the representative poets	1, 2	Un,Ap, An
CO-6	cultivate in them the impetus to master the representative writers	8	Un, Ap
CO-7	develop their abilities to interpret, analyze and evaluate poems in the perspective of literary history and theory	2	Ap, Ev
CO-8	build knowledge of the content and methods of literary studies	3	Re, Un

**SEMESTER - I****Core II****British Prose****19PENC12****Hrs / Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	display a working knowledge of the historical and cultural contexts of British prose pieces.	1	Un, An
CO-2	identify and describe distinct literary characteristics of British prose.	2	Re, An
CO-3	relate the greatness of major prose writers and their relationships to the significant literary traditions of their time.	4	Un, Ap
CO-4	communicate ideas related to the distinct characteristics of British prose.	7	An, Ev
CO-5	classify the dimensions of British Literature in the universal context.	6	An
CO-6	acquire a comprehensive knowledge of British prose.	3	Un
CO-7	cultivate necessary impetus to study more of the representative prose writers.	1, 2	Ap, Cr
CO-8	label the characteristics of literature in English from the contemporary literary historical period and culture.	3, 4	An, Ev

**SEMESTER – I****Core IV****American Literature****19PENC14****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	explain the historical and literary contexts, genres and themes and ethical dimensions of representative works of American literature.	2	Re, Un
CO-2	survey a diverse group of authors and reveal the evolving American experience and character.	3	An, Ev
CO-3	analyse major movements and figures of American Literature.	5	An
CO-4	discuss the strengths, limitations, and cultural assumptions of various literary forms practised in America.	4	Un, An
CO-5	evaluate the roles which gender, race, age, class, ethnicity and geography have played in creating American ethnic literature.	6	An, Ev
CO-6	understand the dimensions of American Literature in the universal context.	1, 2	Un
CO-7	acquire a historical and socio-cultural background of American Literature.	3	Un
CO-8	critically examine the works of representative writers of American Literature.	1	Ap, An

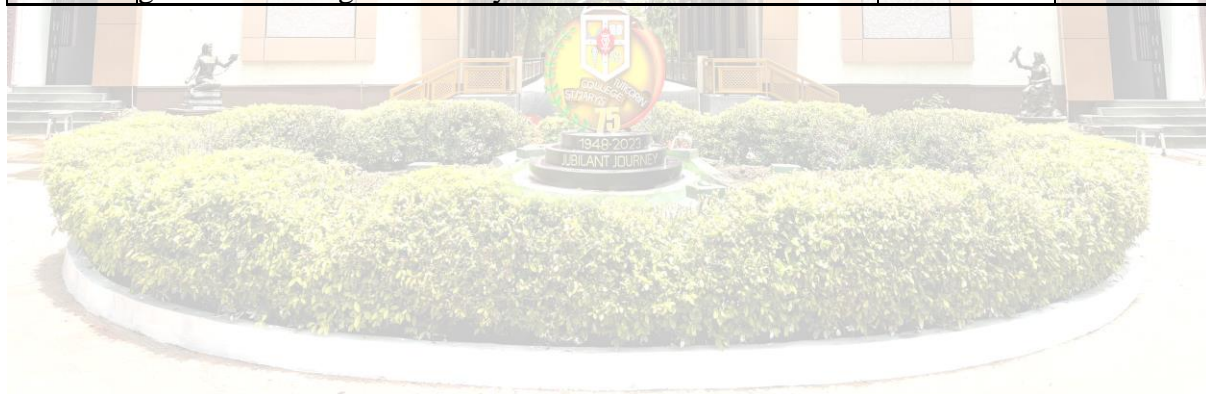
## SEMESTER - I

### Elective I      B      English Literature for Career Advancement

<b>19PENE11</b>	<b>Hrs / Week: 4</b>	<b>Hrs / Semester: 60</b>	<b>Credits: 3</b>
-----------------	----------------------	---------------------------	-------------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	demonstrate a broad knowledge of major and minor authors, major texts and contexts.	7	Un, Ap
CO -2	formulate an excellent foundation for a very wide range of careers.	8	Cr
CO -3	develop expertise ideally suited to a range of careers in the age of information.	6	An, Cr
CO -4	improve the objective knowledge of the subject required for the career paths.	10	An, Ev
CO -5	modify competencies necessary for success in the job market, or in furthering their academic career.	9	Ev, Cr
CO – 6	prepare themselves for a career.	5, 6	Cr
CO – 7	face NET/SET and other competitive examinations.	6, 7	Re, Ap
CO - 8	Appreciate and enjoy the rich cultural background and grandeur of English Literary trends.	6	Un, An





SEMESTER – II			
Core V		British Drama	
Code : 19PENC21	Hrs/week : 6	Hrs/sem : 90	Credits : 4

**Course Outcome:**

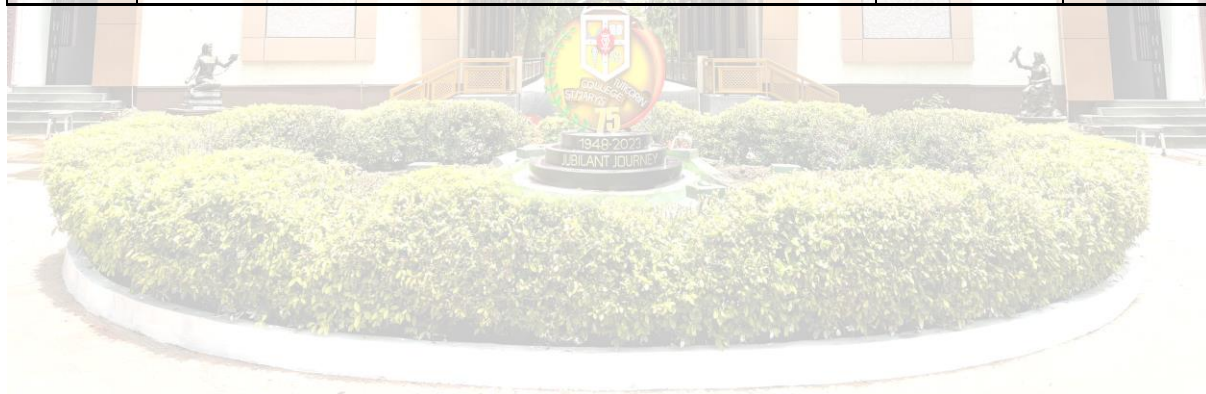
CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze representative dramas in British Literature	1	An
CO-2	develop methods for critical interpretation through reading	3	Ap
CO-3	discuss the aesthetic, cultural and historical aspects of British Drama	4	An
CO-4	value the artistic and innovative use of language employed by the representative dramatists	5	Ev
CO-5	improve the skills of critical thinking, elucidation and effective writing	8	Cr
CO-6	enhance critical outlook on the representative dramatists	7	Cr
CO-7	get a comprehensive picture of the contemporary age	3	Un
CO-8	analyze the unique difference in the theme and stylistic features of British Drama	5	An



SEMESTER –II			
Core VI		Critical Theory-I	
Code : 19PENC22	Hrs/week : 6	Hrs/sem : 90	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze theories of various early schools of criticism	8	An
CO-2	apply literary terminology for narrative, poetic and dramatic genres	5	Ap
CO-3	modify their perspectives of various trends in criticism	4	Ev
CO-4	assume a greater sense of how rhetoric and literary principles function to shape society and culture	3	Ev
CO-5	make use of critical theories to interpret literary texts	8	Ap
CO-6	apply theories of various schools of criticism	6	Ap
CO-7	interpret literary texts with literary theories	1	Cr
CO-8	develop their critical perspectives of various trends	5	Ap



Semester – II			
Core VII		Women's Writing	
Code : 19PENC23	Hrs/week : 6	Hrs/sem : 90	Credits : 4

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	spell the range of feminist perspectives on literature	8	Re
CO-2	explore the writer's philosophy, aesthetics and techniques	4	Ev
CO-3	analyse women writers from the sixteenth to the twentieth century, who wrote about womanhood and authorship	1	An
CO-4	classify the changing role women have experienced culturally, sexually, and psychologically through their writing	3	Ev
CO-5	discuss the women writers who challenged gender stereotypes and questioned the patriarchal status quo	6	An
CO-6	explore the ideologies of women writers across cultures	1	Cr
CO-7	understand the nuances of women's writings in English	2	Un
CO-8	discuss questions of social conflict as they are reflected in works of literature	4	An

Semester – II			
Core VIII		Religion and Literature	
Code : 19PENC24	Hrs / Week :4	Hrs / Sem : 60	Credits :4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop and apply critical toolkit to the study of religion and religious traditions	2	Ap
CO-2	understand and interpret religious traditions by examining religion as historical, social and cultural phenomena	3	Un
CO-3	explore philosophical, psychological and cognitive dynamics of religion	1	Ev
CO-4	focus on the plurality of religious voices and expressions	2	Un
CO-5	evaluate the significance of certain literary works in shaping larger social, cultural and historical contexts	3	Ev
CO-6	interpret and explain religion emphasizing systematic, historically based and cross cultural perspectives	3	An
CO-7	demonstrate how social, cultural contexts influence the construction of literary works	8	Cr
CO-8	distinguish among various kinds of evidence by identifying reliable sources and valid arguments	4	An





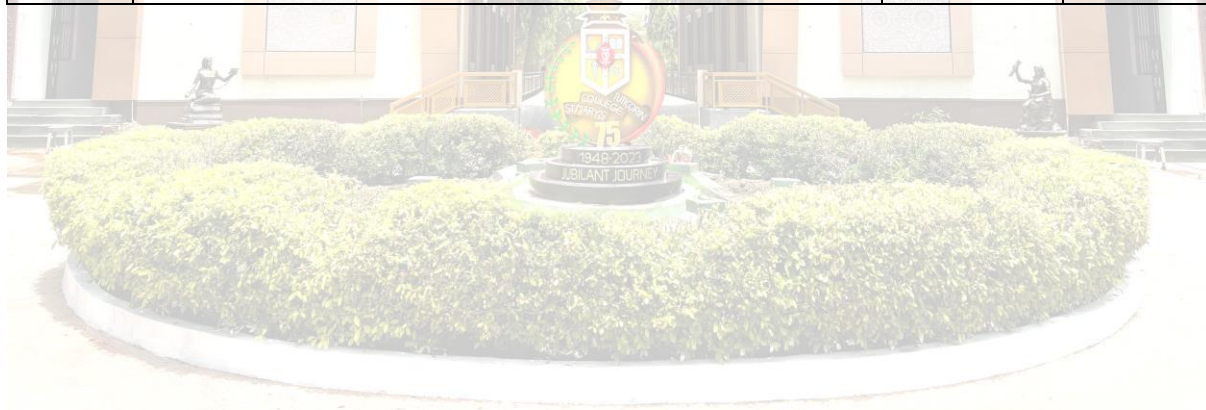
**SEMESTER – II****Elective III A Psychology and Literature****Code : 19PENE21****Hrs/week : 4****Hrs/Sem : 60****Credits : 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	assess the ways in which various aspects of identity, subject positions and affiliations influence the development of literary traditions	3	Ev
CO-2	appraise how race, gender, class and sexuality influence psychology concepts and literature	4	An
CO-3	develop an understanding of the various types of development that an individual experiences across the life- course	6	Un
CO-4	demonstrate an understanding of human experiences through the study of literature	2	Ap
CO-5	analyze and relate psychological theories in literary context	1	An
CO-6	critically examine the relation between life and literature	3	Ev
CO-7	understand the depth and range of psychologists' unique vision	1,3	Un
CO-8	critically evaluate literary writings in its modern context	1	Ev

SEMESTER – II			
Elective III	B	Communication Skills	
Code 19PENE21	Hrs/Week :4	Hrs/Sem :60	Credits: 3

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	display competence in oral, written and visual communication	2	Ap
CO-2	originate a uniquely practical and creative grasp of the English language	3	An
CO-3	demonstrate appropriate and professional ethical behaviour	2	Ap
CO-4	expose themselves to various forms of personal and professional communication	4	Un
CO-5	hone effective communication skills in a modern, globalised context	5	Cr
CO-6	prepare themselves for a career	6	Cr
CO-7	develop artistic and innovative use of language	8	Cr
CO-8	enhance their literary and linguistic competence	6	Cr



SEMESTER – II			
Elective IV	A	English Language Teaching	
Code: 19PENE22	Hrs/Week :4	Hrs/Sem :60	Credits: 3

### Course Outcome:

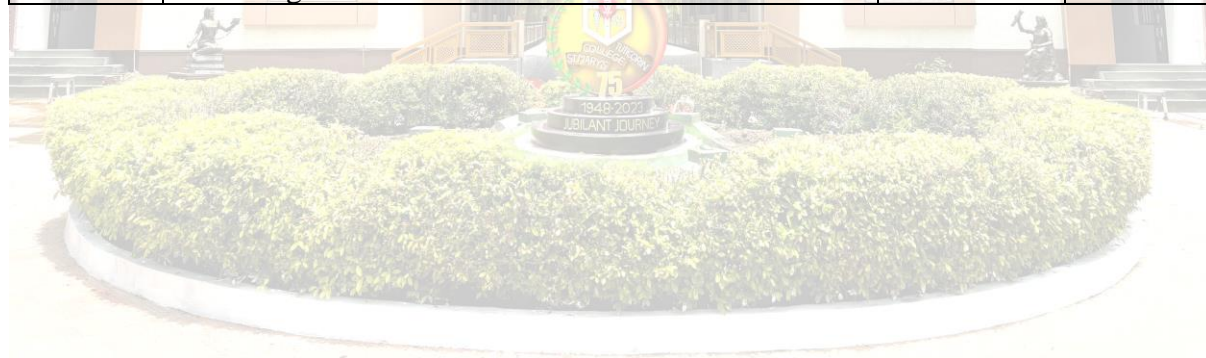
CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	compare and contrast language structures and explain the relationship between language and literature	1	Ev
CO-2	originate a uniquely practical and creative grasp of the English language	5	Cr
CO-3	develop pedagogic skills required for teaching English	8	Ap
CO-4	adapt methods of teaching English for different levels	5	Ap
CO-5	appraise the ways in which the content could be taught through whole class activities, pair work and small group or individual activities	3	An
CO-6	prepare themselves for a career	6	Ev
CO-7	develop artistic and innovative use of language	6	Ap
CO-8	enhance their literary and linguistic competence	8	Cr



SEMESTER – II			
Elective IV	B	Comparative Literature	
Code 19PENE22	Hrs/Week :4	Hrs/Sem :60	Credits: 3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	gain knowledge on the study of Indian Literature and the importance and influence of European language and literature on the Indian language and literature	1	Un
CO-2	look beyond the national frontiers of languages and cultures	2	Un
CO-3	examine the divides that exist between tradition and modernity	4	Ev
CO-4	understand literature across linguistic and cultural borders	3	Un
CO-5	analyze the methodological problems in the practice of comparative literature	7	An
CO-6	explore the global diversity of literary forms	6	Cr
CO-7	acquaint themselves with a broad range of interdisciplinary and cross cultural perspectives	8	Un
CO-8	respond articulately to literary works both orally and in writing	7	Ev





SEMESTER III			
Core IX		British Fiction	
Code : 19PENC31	Hrs / Week : 6	Hrs / Sem : 90	Credits : 4

**Course Outcome:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the social and cultural background of the British writers.	1,2	Un
CO-2	analyse the socio-cultural problems reflected in the novels	5	An
CO-3	acquire a comprehensive knowledge of British novels.	2	Un, An
CO-4	relate how language shapes human understanding.	4	An
CO-5	differentiate the uniqueness of British fiction from their counterparts belonging to other nationality.	4,5	Ap
CO-6	develop a fascination to write fiction.	5	An
CO-7	evaluate the theme and the nuances of narrative techniques employed in British fiction.	7,8	An
CO-8	modify their perspective of reading and to kindle the spirit of doing research.	6,7,8	Cr

SEMESTER III			
Core X		Critical Theory – II	
Code : 19PENC32	Hrs / Week : 6	Hrs / Sem : 90	Credits:4

**Course Outcome:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand different schools of criticism	1	Un
CO-2	evaluate literary texts with a critical outlook	2	Ev
CO-3	develop the ability to apply the theories in their endeavour on an in depth study of a literary text.	8	Cr
CO-4	analyse recent developments in complex critical theories.	6	An
CO-5	interpret literary texts based on the knowledge of the critical theories.	5	Ap
CO-6	locate the dominance of either the creative faculty or the critical faculty present within them	3	Un
CO-7	define the function of theories in literary works.	5	Re
CO-8	read text between lines.	8	Ev

**SEMESTER III****Core XI****Study of the English Language****Code : 19PENC33****Hrs / Week : 6****Hrs / Sem : 90****Credits : 4****Course Outcome:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the phonological aspects of English Language	2	Un
CO-2	evaluate the relationship between phonetics and phonology.	5	Ev
CO-3	construct grammatically correct sentences	6	Cr
CO-4	imbibe an in depth knowledge of the phonology of the English language	3	Ap
CO-5	enhance writing competency	6	Cr
CO-6	categorise the different types of phonemes.	4	An
CO-7	identify the basic units of phonology.	4	An
CO-8	explain distinctive feature theory.	2	Un

SEMESTER III			
Core XII		Research Methodology	
Code : 19PENC34	Hrs / Week : 4	Hrs / Sem : 60	Credits : 4

**Course Outcome:**

CO.No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the process involved in writing a thesis.	5	Un
CO-2	apply and incorporate the mechanics of writing while writing research papers	4	Ap
CO-3	learn how to document the collected sources.	6	Re
CO-4	develop the ability to identify the different forms of plagiarism and avoid them in writing.	2	Re
CO-5	organise the research paper coherently.	8	Cr
CO-6	design quality research papers.	8	Cr
CO-7	edit research articles.	8	Cr
CO-8	define the purpose of research.	4	Re





**SEMESTER III****Elective V      A                      Translation: Theory and Practice****Code : 19PENE31B****Hrs / Week : 4****Hrs / Sem : 60****Credits : 3****Course Outcome:**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>C L</b>
CO-1	evaluate the history of translation of works	4	Un
CO-2	apply the various theories and techniques of translation while translating a literary piece.	6	Ap
CO-3	locate and synthesise cultural complexities involved in translation.	8	Co
CO-4	evaluate the resultant change of meaning evolved in the process of translation.	2	Ev
CO-5	develop their ability to translate.	6	Re
CO-6	compile new terms of expression from different fields.	3	Re
CO-7	interpret the difficulties involved in translation.	5	Un
CO-8	evaluate personal language skills.	4	Ev

**SEMESTER III****Elective V      B      Transformational Generative Grammar****Code : 19PENE31****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcome:**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>C L</b>
CO-1	evaluate the linguistic aspects of English Language	1	Ev
CO-2	interpret the structure of English language	5	Ap
CO-3	formulate grammatically correct sentences	8	Cr
CO-4	imbibe an in depth knowledge of the morphology of the English language	3	Ap
CO-5	enhance writing competency	8	Cr
CO-6	categorise the structure of the Phonemes.	4	An
CO-7	compile analytically the different types of Morphemes.	6	An
CO-8	analyse syntactic theories.	2	An

**SEMESTER III****Elective VI****A Travel Literature****Code : 19PENE32****Hrs / Week : 4****Hrs / Sem : 60****Credits : 3****Course outcome:**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	read the rhetoric of travel writing.	4	Un
CO-2	demonstrate a sound knowledge of the various primary sources studied.	6	Ap
CO-3	develop their critical thinking and reach conclusions both about the society observed and the subjectivity of the observer in the prescribed texts.	6	Re
CO-4	analyse the theoretical issues involved in using colonial and travel literature as a source.	2	An
CO-5	evaluate the concepts and issues such as race, gender, class, caste, criminality coercion, resistance, identity etc.	2	Ev
CO-6	interpret different historical methodologies, travel texts theoretical properties.	5	Ap
CO-7	locate the theoretical positions of 'gaze' and there by infer as to how it infiltrates the society at large.	8	Co
CO-8	disseminate the acquired knowledge of the uniqueness of other cultures worldwide to their own.	4	An

**SEMESTER III****Elective VI****B Detective Fiction****Code : 19PENE32****Hrs / Week : 4****Hrs / Sem : 60****Credits : 3****Course Outcome:**

<b>CO.No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	recognize genre conventions specific to detective fiction across different media forms.	2	Re
CO-2	understand critical dialogues surrounding detective fiction.	5	Un
CO-3	analyse the distinct features of detective fiction.	6	Cr
CO-4	adapt the innovative techniques and themes used in detective fiction.	3	Ap
CO-5	identify and appreciate the uniqueness of individual writers	6	Ev
CO-6	enhance the cognitive level of the students.	4	Co
CO-7	compare and contrast the special feature of the literary pieces with the literary works of other ages.	4	An
CO-8	write critical and comparative essays based on the core concepts learnt.	2	Ap



SEMESTER IV			
Core XIII		Shakespeare	
Code:19PENC41	Hrs / Week: 6	Hrs / Sem:90	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	demonstrate mastery of the discipline by understanding the social and intellectual background of Shakespeare.	1,2	Un
CO-2	analyse the cultural problems that reflect an insight into the relevant, historical, traditional and social contexts.	5	An
CO-3	infer a comprehensive knowledge of the dramatic and the poetic structures in Shakespeare's work.	2	Un, An,
CO-4	relate how language shapes human understanding.	4	An
CO-5	implement Shakespeare's works in the modern context— involving the structuralist, existentialist and linguistic approaches.	4,5	Ap
CO-6	differentiate the distinctiveness of Shakespeare's plays with special reference to the immortal characters he has created intuitively.	5	An
CO-7	distinguish Shakespearean philosophy, feminism, aesthetics and techniques.	7,8	An
CO-8	create an ability to reconstruct the dramatic and theatrical conventions of his craftsmanship.	6,7,8	Cr

**SEMESTER IV****Core XIV****Canadian Literature****Code: 19PENC42****Hrs/ Week: 6****Hrs / Sem: 90****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	demonstrate mastery of the history and background of Canadian Literature.	1	Ap
CO-2	develop comprehensive knowledge by combining theory with practical application for a wider understanding of Canadian Literature.	2,6	Ap, Cr
CO-3	develop an ability to recognize and identify the uniqueness of Canadian Literature.	6	Cr
CO-4	analyse the themes of cultural identity with that of the socio economic conditions of Canada.	5	An
CO-5	perceive, categorise, interpret and dramatise the characters, dramatic situations and devices used.	9	Ev
CO-6	appraise, differentiate and distinguish the magnitude of Canadian literary genres with that of other Literatures.	5	Ev
CO-7	make use of theory as a lens for thinking critically the central aspects of Canadian culture and the complexities of Canadian society.	3	Ap
CO-8	modify high-level applied, active learning experiences to bring out the new avenues for future research work.	8	Cr

**SEMESTER IV****Core XV****New Literatures in English****Code: 19PENC43****Hrs/ Week: 5****Hrs/ Sem:75****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	demonstrate diverse genres of various countries and develop a taste for New Literatures across cultures.	1	Un, Ap
CO-2	infer a comprehensive knowledge about the problems related to the early days of colonization and the challenges faced by the early settlers.	2	An
CO-3	develop an ability to recognize the universality of the representative writers and their works through critical thinking.	6	Cr
CO-4	make use of theory to value the social inequities of various cultures.	3	Ap
CO-5	analyse, examine, interpret, adapt and evaluate the characters, of various cultures through critical thinking .	6	An, Cr
CO-6	appraise, categorise and distinguish the writers of new literatures and enjoy various cultures through their works.	9	Ev
CO-7	develop habits to evaluate, judge and assess the concept of hybridity and cultural plurality, to recognize the complexities in every culture.	6	Cr
CO-8	develop a critical understanding of how literature can both uphold and resist existing structures of power.	6	Cr

SEMESTER IV			
Core XVI		World Literature in Translation	
Code: 19PENC44	Hrs / Week: 5	Hrs/ Sem:75	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	demonstrate mastery of the literary genres of World Literatures through translation.	1	An
CO-2	infer a comprehensive knowledge of the diversity of cultures.	2	Un
CO-3	build broad-based knowledge and skills necessary to recognize professional goals.	7	Cr
CO-4	make use of theory to comprehend the values behind every work.	3	Ev
CO-5	relate the connections among theories and principles to examine the various interpretations and methods adopted.	4	An
CO-6	appraise, categorise, enjoy and practice the values of various cultures on their own.	5,6	Ev
CO-7	develop habits to evaluate, revise and estimate the conventions and ideologies of world's greatest writers and comprehend the philosophy put forth.	6	Cr
CO-8	formulate professional activities, like producing a variety of academic and multimodal genres, proposals, presentations, reports, and review essays.	8,9,10	Cr



**SEMESTER IV****Project and Viva-Voce****Code: 19PENC45****Hrs/ Week: 8****Hrs/ Sem:120****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to:</b>	<b>PSO addressed</b>	<b>CL</b>
<b>CO-1</b>	make use of the critical theories to perceive how to write papers in literature.	3,9	Ap, Ev
<b>CO-2</b>	Acquaint with the fundamentals of Research process in characterizing, instantiating, and critiquing the dominant critical theories, methodologies, and practices in the field.	2	Un
<b>CO-3</b>	Cultivate research culture by combining theory with practical application for an exceptional professional foundation.	2	Ev
<b>CO-4</b>	Interpret new literary works to build broad-based knowledge and skills necessary to fulfil their goals.	7	Ev
<b>CO-5</b>	Formulate an original, increasingly complex thesis of their own.	6	Cr
<b>CO-6</b>	Evaluate critically the sources they find.	6	Ev
<b>CO-7</b>	Develop the thesis into a well-supported argument.	6	Cr
<b>CO-8</b>	Document and present their work in accordance with the concepts of research methodology.	10	Cr

SEMESTER – I			
Core IV		American Literature	
Course Code : 21PENC14	Hrs / Week: 6	Hrs / Semester: 90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	locate the significance of the American literary tradition and examine the works of the representative writers of American Literature	1,2,4	Un
CO-2	articulate the historical and the socio-cultural background of American Literature.	2,3	Ap
CO-3	appraise the historical and literary contexts, genres, themes and ethical dimensions of the representative works of American literature.	2,4	An
CO-4	distinguish a diverse group of authors and reveal the evolving American experience and character.	1,3	An
CO-5	analyse the major movements and works of American Literature and evaluate the strengths and limitations of the major trends in American Literature.	4,5,7	An, Ev
CO-6	review the roles of gender, race, age, class, ethnicity and geography in creating American ethnic literature.	6,8	Ev

**SEMESTER – II****Core VI****British Drama****Course Code : 21PENC21****Hrs/week :5****Hrs/Sem : 75****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO Addressed</b>	<b>Cognitive Level</b>
CO-1	apply the concepts of British Drama in drafting a play.	4	Ap
CO- 2	analyse the representative plays in British Literature	1	An
CO- 3	compare the aesthetic, cultural and historical aspects of British Drama.	3,8	An
CO- 4	evaluate the artistic and innovative use of language employed by the representative dramatists.	6	Ev
CO- 5	improve the skills of critical thinking, elucidation and effective writing.	6	Cr
CO- 6	develop the required employability skills to meet the demands of creative industries.	7	Cr

**SEMESTER II****Core VII****Approaches to Literary Criticism**

<b>Course Code: 21PENC22</b>	<b>Hrs / Week : 5</b>	<b>Hrs / Sem : 75</b>	<b>Credits : 4</b>
------------------------------	-----------------------	-----------------------	--------------------

**Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>Cognitive Level</b>
CO-1	comprehend theories of various early approaches of criticism.	1	Un
CO-2	develop critical perspectives to interpret literary texts.	2, 3	Un, Ap
CO-3	apply theoretical approaches in research and creative inputs.	5, 6	Ap
CO-4	apply literary approaches for narrative, poetic and dramatic genres.	2, 4	Ap
CO-5	interpret and modify the socio-cultural and psychological contexts of humankind to better living.	8	Ev
CO-6	assess the functioning of rhetoric and psychology in literature and society for employability.	7, 6	Ev





Semester – II			
Core VIII		Women's Writing	
Course Code: 21PENC23	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the uniqueness of women's writing.	1	Un
CO-2	discuss the social and cultural conflicts in women's writings.	3	Un
CO-3	classify the role of women in the current global scenario .	2, 8	Ap
CO-4	analyze the ideology of women writers who challenged gender stereotypes and the patriarchal status quo.	4	An
CO- 5	examine the themes and narrative techniques in the works.	6	An
CO-6	analyse womanhood and women writers from the 16 <sup>th</sup> to the 20 <sup>th</sup> Century	2,6	An

Semester – II			
Core IX		Religion and Literature	
Course Code: 21PENC24	Hrs /Week : 5	Hrs / Sem : 75	Credits :4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	apprehend and accept all religions as traditional and cultural phenomena.	2	Un
CO- 2	critically analyse the religious components in literature.	1	An
CO- 3	analyse the spiritual dynamics of relationship between God and humans.	8	An
CO- 4	explore and interpret philosophical, psychological and cognitive dynamics of religion.	1,3	Ev
CO- 5	spot out the essential values of mankind.	3	Ev
CO- 6	evaluate the significance of literary works in shaping the society.	8	Ev

**SEMESTER – II****Core X****Psychology and Literature****Course Code : 21PENC25****Hrs / Week : 5****Hrs / Sem : 75****Credits : 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the various types of development that an individual experiences in life.	2	Un
CO-2	understand the depth and range of psychological theories and analyse the texts based on psychological and literary theories	2, 3	Un
CO-3	demonstrate the understanding of human experiences through the study of literature.	4	Ap
CO-4	appraise how race, gender, class and sexuality influence the consciousness of human beings.	6	An
CO-5	assess the ways in which various aspects of identity, subject positions and affiliations influence literary traditions	3	An
CO-6	evaluate literary writings in the psychological perspective.	6	Ev

## SEMESTER – II

### Core Elective 1 English Language Teaching: Methods and Practices

Course Code: 21PENE21

Hrs / Week: 5

Hrs / Semester: 75

Credits: 4

#### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO- 1	perceive the pedagogical skills and the various approaches in learning English language for employability.	7	Un
CO- 2	adapt to different methods of teaching English.	4	Ap
CO- 3	develop the artistic and innovative use of language.	4,7	Ap
CO- 4	to assess the various teaching methods.	1	Ev
CO- 5	design a practical and creative method of teaching the English language.	7	Cr
CO- 6	enhance their literary and linguistic competence.	6	Cr



Semester III			
Core XI		British Fiction	
Course Code : 21PENC31	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	understand the social and cultural background of the British culture	1	Un
CO-2	analyse the socio-cultural problems reflected in the novels	3	An
CO-3	relate how British novels bring in ideology to shape human understanding	2, 6	An, Ev
CO-4	develop critical thinks and review of British writing	3, 4	Un, Ap
CO-5	analyse and evaluate the themes and nuances of narrative techniques employed in British fiction	3, 8	Ev
CO-6	formulate creative and research writing	5, 6	Cr, An, Ap



**Semester III****Core XII****Recent Trends in Critical Theory****Course Code : 21PENC32****Hrs / Week :5****Hrs / Sem : 75****Credits : 4****Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO-1	understand the theoretical implications of recent critics	1	Un
CO-2	explore new knowledge of cultural space and identity in literary texts	2	An
CO-3	develop the faculty of analytical thinking and research for higher learning	2, 4, 6	An, Un
CO-4	analyze the role of the reader and responses to texts	2, 6	An
CO-5	apply the theories and approaches to the close reading of texts to better human perception.	3, 8	Ap
CO-6	interpret attitudes and prevalent notions of national and socio-cultural consciousness	8	Ev, Ap

Semester III			
Core XIII	Research Methodology		
Course Code : 21PENC33	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No.	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	define and compile the features of Research Writing	6	Un
CO-2	practise and relate the mechanics of MLA style to organize research papers coherently	7	Un, An
CO-3	relate the aspects of creating documentation of a research paper	2	An
CO-4	distinguish the overall knowledge on the techniques of documentation	8	An
CO-5	classify the principles of documentation, edit and proof read research articles	5	Ap
CO-6	develop the ability to identify the different forms of plagiarism and avoid them in research writing.	6	Cr

Semester III			
Core XIV		Canadian Literature	
Course Code : 21PENC34	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	analyse the themes of cultural identity with the socio-economic conditions of Canada.	2	An
CO-2	appraise and distinguish the magnitude of Canadian literary genres with other Literatures.	6	An
CO-3	analyse how Canada's history and geography compliment its literature	5	An
CO-4	evaluate the use of theory as a lens critically analysing the central aspects of Canadian culture and the complexities of Canadian society.	8	Ev
CO-5	develop the ability to recognize and identify the uniqueness of Canadian Literature	1	Cr
CO-6	formulate tendencies and trends that embody English Canadian writing	3	Cr



Semester III			
Core XV		South Asian Writings in English	
Course Code : 21PENC35	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Cognitive Level
CO - 1	understand South Asian texts in the historical and cultural contexts.	1	Un
CO - 2	discuss various South Asian Literatures and their traditions with a critical outlook.	2	Un
CO - 3	predict critically and creatively about the cultural politics of South Asian writings in English	2,3	Ap
CO - 4	demonstrate awareness of British imperialism and the experiences of immigration as reflected in South Asian writings.	3, 8	Ap
CO - 5	examine themes of colonialism, identity, assimilation and resistance in literary texts.	5, 6	An
CO - 6	discriminate the geographical, linguistic, cultural, religious, racial and other differences among South Asian writers.	2, 6	Ev

Semester III			
Core Elective II		Translation: Theory and Practice	
Course Code : 21PENE31	Hrs / Week :5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No	Upon Completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the history of translation of works	1	Un
CO-2	apply various theories and techniques of translation while translating a literary texts	6	Ap
CO-3	locate and synthesize cultural complexities involved in translation.	8	An
CO-4	analyse the resultant change of meaning evolved in the process of translation.	2	Ev
CO-5	critically review the thematic and technical aspects of translated texts.	4	Ev
CO-6	develop the ability to translate and compile new terms of expression from different fields.	3	Cr

Semester III		
Self Study Course / MOOC	Travel Literature	
Course Code : 21PENSS31		Credits : 2

**Course Outcome:**

CO. No.	Upon Completion of this course, students will be able to	PSO addressed	Cognitive Level
CO-1	comprehend the richness of travel literature through historical methodologies.	1	Un
CO-2	apply the acquired knowledge of the uniqueness of other cultures worldwide.	7, 8	Ap
CO-3	differentiate the socio-cultural spaces inherent in texts.	2	An
CO-4	analyse the theoretical issues involved in using colonial and travel literature as a source.	6	An
CO-5	evaluate the concepts and issues such as race, gender, resistance and identity.	6, 8	Ev
CO-6	develop critical thinking and subjectivity of an observer.	3	Cr

Semester IV			
Core XVI		Shakespeare	
Course Code : 21PENC41	Hrs / Week : 6	Hrs / Sem : 90	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO's addressed	CL
CO-1	demonstrate mastery of the discipline by understanding the social and intellectual background of the age.	1,2	Un
CO-2	teach Shakespearean philosophy, feminism, aesthetics and techniques reflecting on the critical reviews.	4	Ap
CO-3	dramatise Shakespeare's unique vision with special reference to the immortal characters he has created for journalistic, commercial, technical, and web-based writing.	5	Ap
CO-4	implement Shakespeare's works in the modern context— involving the structuralist, existentialist and linguistic approaches for research and critical writing.	6	An
CO-5	infer a comprehensive knowledge of the dramatic and the poetic structures in Shakespeare's work and relate how language shapes human values and human identity.	3,5	An
CO-6	create the ability to reconstruct the dramatic and theatrical conventions of his craftsmanship to theatrical, dramatic and commercial purposes.	5	Cr



Semester IV			
Core XVII		Study of the English Language	
Course Code : 21PENC42	Hrs / Week : 6	Hrs / Sem : 90	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO s addressed	CL
CO-1	understand the change of meaning of words over a period of time and the influence of other languages in English	1	Un
CO-2	use correct Stress and Intonation to speak English with good pronunciation.	8	Ap
CO-3	articulate words from different languages with the help of phonetic transcription	2	Ap
CO-4	imbibe an in-depth knowledge of the phonology of the English language	4	An
CO-5	designate the place and manner of articulation of phonemes in the English language and categorize speech sounds into various types.	6	An
CO-6	critically evaluate the significant the growth of the English language	5	Ev

**Semester IV****Core XVIII****Post-Colonial Writings in English****Course Code : 21PENC43****Hrs / Week : 6****Hrs / Sem : 90****Credits : 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop a critical understanding of how literature can both uphold and resist the existing structures of power.	4	Un, Ap, An
CO-2	analyse the postcolonial texts in their historical and cultural contexts and investigate the problems related to colonization and the challenges faced by early settlers.	1, 4	An
CO-3	appraise and distinguish Postcolonial Literatures on the concepts of ambivalence, mimicry and hybridity.	6	Un, Ev
CO-4	synthesize multiple sources of postcolonial research and extend a textual analysis	2	Ev, An
CO-5	interpret the questions of human identity and values with a sense of intellectual independence.	3	Ap, An
CO-6	analytically teach Postcolonial Literature in its relationship with culture, racism, migration and diaspora colonialism, nationalism, citizenship and cosmopolitanism.	8	Cr, An

Semester IV			
Project			
Course Code : 21PENP41	Hrs / Week : 6	Hrs / Sem : 90	Credits : 6

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	acquaint with the fundamentals of Research process in characterizing and critiquing the dominant critical theories, methodologies, and practices in the field.	2	Un
CO-2	cultivate research culture by combining theory with practical application.	2	Ev
CO-3	interpret new literary works to build broad-based knowledge and skills.	4	Ev
CO-4	formulate an original and increasingly analytical thesis.	6	Cr
CO-5	develop the thesis into a well-supported argument.	6	Cr
CO-6	document and present their work in accordance with the concepts of research methodology.	7	Cr

**Programme: B. A. History**

<b>SEMESTER- I</b>			
<b>Allied I - General Economics</b>			
<b>Code: 18UHIA11</b>	<b>Hours / week :3</b>	<b>Hrs / Semester: 45</b>	<b>Credits :3</b>

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	understand and demonstrate core microeconomic and macroeconomic terms, concepts, and theories.	1	Un
CO 2	identify appropriate tools to make an economic evaluation.	2	Ev,Un
CO 3	identify key macroeconomic indicators, and measures of economic change, growth, and development	2	Ev
CO 4	be effective economic analysts and apply economic theories.	1	Ap
CO 5	demonstrate an ability to conceptualize problems analytically.	4	An
CO 6	employ marginal analysis for decision making	1	Ap
CO 7	analyze operations of markets under varying competitive conditions	4	An
CO 8	analyze causes and consequences of unemployment, inflation and economic growth	4	Cr



**SEMESTER- I****Allied II– Labour Economics**

<b>Code: 18UHIA12</b>	<b>Hours / week :3</b>	<b>Hrs / Semester: 45</b>	<b>Credits :3</b>
-----------------------	------------------------	---------------------------	-------------------

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	demonstrate knowledge and understanding of how labour markets work in theory and in practice	1	Un
CO – 2	analyse various topics such as migration, labor market discrimination, and incentive problems in labor markets.	6	An
CO – 3	manipulate industrial disputes and be able to analytically solve problems relating to trade unions.	3	An
CO - 4	understand the historical and present day impact of unions on labour operations.	6	Un
CO - 5	understand human capital investments and wage differentials; Analyze wage structures.	3	Un
CO – 6	understand labour markets and public policies by using economic theory and empirical analysis.	8	Un
CO – 7	apply their understanding of theoretical models to analyze trends in data pertaining to topics in labour economics.	6	Ap
CO – 8	keep and follow current social security measures for the future employment.	7	Cr

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER- II****Allied III– Population Economics****Code: 18UHIA21****Hours / week : 3****Hrs / Semester: 45****Credits :3****Course Outcome**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	provide knowledge about population geography, population & environment, population & family welfare, population growth.	6	Un
CO – 2	obtain useful knowledge for the analysis of population changes, its consequences and drivers.	8	Un
CO – 3	demonstrate an understanding of demographic changes in the world and their major determinants.	1	Ev
CO - 4	use demographic concepts and theories to understand contemporary socio-economic issues and current affairs.	2	Un
CO - 5	apply demographic concepts and population theories into relevant policy settings.	2	Ap
CO – 6	use demographic concepts and population theories to explain past, present population characteristics.	1	Un, Ap
CO – 7	demonstrate an understanding of demographic changes in the world and their major determinants.	1	Un
CO – 8	demonstrate an understanding of the theoretical differences among the most influential models that have been put forward in demographic research to account for the first demographic transition.	4,8	Un, Re

SEMESTER- II			
Allied IV – Women Entrepreneurship			
<b>Code: 18UHIA22</b>	<b>Hours / week :3</b>	<b>Hrs / Semester: 45</b>	<b>Credits :3</b>

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	understand the development of entrepreneurship as a field of study and as a profession.	3	Un
CO - 2	developing their entrepreneurial competencies.	3	Cr
CO - 3	identify and source the necessary financial and non-financial resources available for a new venture.	1	An
CO - 4	promote entrepreneurship among women as a means to achieve self-reliance and socio-economic independence.	3,4	Ap
CO - 5	train the students to learn about the successes and failures from business.	7	Ap
CO - 6	understand the importance of entrepreneurship as a tool for development, the concept and basic principles of Innovation.	1,2	Un
CO - 7	develop capabilities and skills necessary to assume entrepreneurial activity.	3	Cr
CO - 8	describe a new business in a well-written venture plan.	7	Ap



Semester - III			
Allied - V	Modern Governments – I		
Sub. Code: 18UHIA31	Hours / Week :3	Hours / Sem : 45	Credits : 3

**Course outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	assess the performance of the political institutions.	4	An
CO-2	understand the basic elements of state.	1	Un, Re
CO-3	appreciate the forms of Constitution.	1	Un, Re
CO-4	assess the types of Government.	4	An
CO-5	estimate the powers and functions of the organs of the Government.	4	An
CO-6	highlight the fathers of the Constitution.	2	Un, Re
CO-7	become aware of the functioning of the Government.	1	Un, Re
CO-8	develop interest in the Government affairs.	3	Ap

**SEMESTER III****Core Skill Based****Archives and Museums****Code: 18UHIS31****Hrs/Week : 4****Hrs/Sem : 60****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	visit of Archives and Museums.	2	Un, Re
CO-2	understand the organisations and functions of Archives and Museums.	1	Un, Re
CO-3	highlight the primary sources of Archives and Museums.	2,4	Un, An, Ev
CO-4	apply the uses of Archives and Museums in historical writings.	1	Un, Re
CO-5	respect and preserve Archives and Museums.	2	Un
CO-6	witness the evidences of History.	2,4	Un, Ev, Re
CO-7	develop more collaborative approaches.	2,4	Un, An, Ev
CO-8	identify good practice and skills of professionals.	1	Un, Re

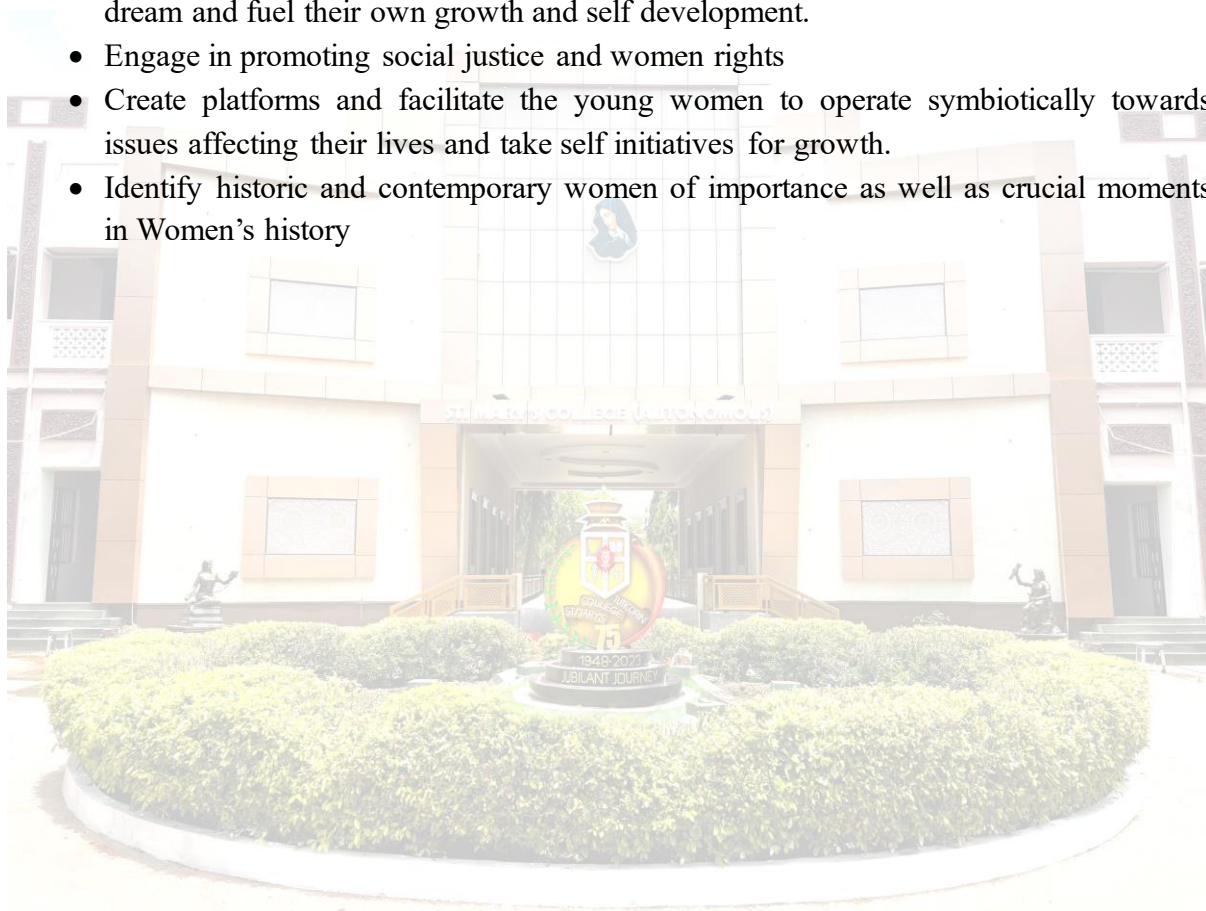
### Semester – III

#### Women's Synergy

<b>Code : 18UAWS31</b>	<b>Hrs/ Week : 2</b>	<b>Hrs/Sem:30</b>	<b>Credits : 2</b>
------------------------	----------------------	-------------------	--------------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



Semester – IV			
Allied – IV		Modern Governments – II	
Sub. Code: 18UHIA41	Hours / Week : 3	Hours / Sem : 45	Credits :3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	enhance the knowledge about the political systems in U.K. and U.S.A.	1	Un, Re
CO-2	understand the salient features of British Constitution.	1	Un, Re
CO-3	assess the Presidential form of Government in U.S.A.	4	An
CO-4	analyse the means to solve legislative deadlocks.	4	An
CO-5	differentiate clearly the Parliamentary and Presidential form of Government.	2	Un
CO-6	highlight the mother of Parliaments.	1	Un, Re
CO-7	become aware of judicial review.	1	Un, Re
CO-8	examine the Constitutions of other countries.	4	An



Semester IV			
Core SB		Principles and Methods of Archaeology	
Code:18UHS41	Hrs/Week : 4	Hrs/Sem : 60	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop the archaeological skill to reconstruct the history of the past.	1	Un, Re
CO-2	learn the methods of excavation and exploration.	1	Un, Re
CO-3	understand the methods of conservation of excavated monuments.	1	Un, Re
CO-4	understand excavation methods and techniques.	1	Un, Re
CO-5	know about various dating system.	1	Un, Re
CO-6	analyse the disciplines of Archaeology.	4	An
CO-7	appreciate the work of Archaeologists.	1	Un, Re
CO-8	apply the archaeological skills in historical writing.	3	Ap

Semester -V			
Core IX		History of Europe from A.D. 1453-1783	
Code:18UHIC53	Hrs/Week: 6	Hrs/sem:90	Credits:4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	important landmarks in Europe revolutionized the course of world history.	1, 2	Un,Re
CO-2	understand the diplomatic alliances of various European countries.	1, 2	Un, Re
CO-3	study the various places of French Revolution.	1, 2	Un, Re
CO-4	appreciate geographical discoveries.	1, 2	Un, Re
CO-5	know the administration of various dynasties.	1, 2	Un, Re
CO-6	analyse the role of Europe in international affairs.	4	An
CO-7	evaluate the work of benevolent despots in Europe.	5	Un, Ev
CO-8	assess the foreign policy of Europe.	4	An

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

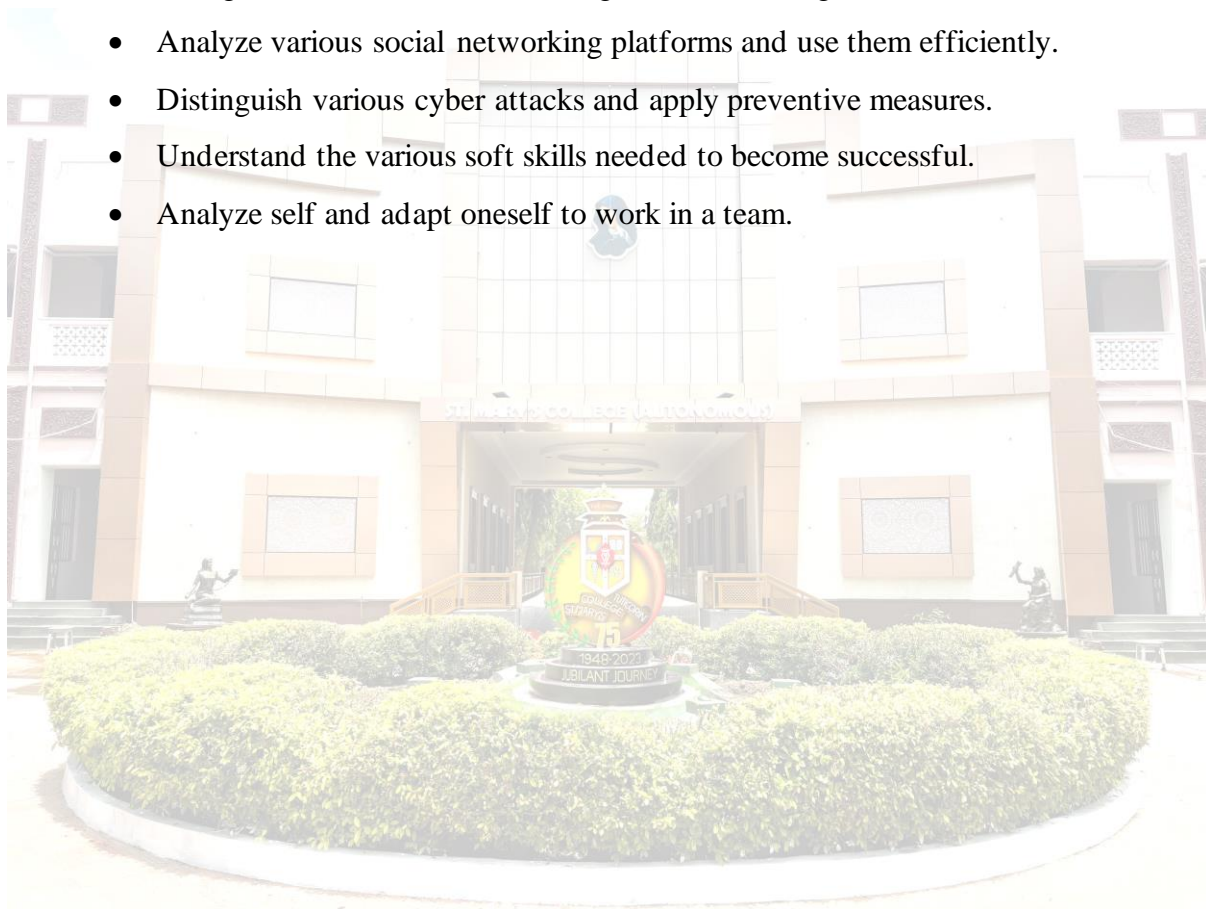
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



Semester – VI			
Core – XI		History of Europe 1789 to 1945 A. D.	
Code : 18UHIC62	Hrs / Week : 6	Hrs / Sem :90	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	appreciate the work of Napoleon Bonaparte.	1	Un, Re
CO-2	analyse the impact of French Revolution.	4	An
CO-3	understand the Unification Movements of Europe.	1	Un, Re
CO-4	critical and analytical study of World Wars.	4	An
CO-5	create an awareness on the role of Europe in International relations.	6	Cr
CO-6	analyse the dictatorship of Hitler and Mussolini.	4	An
CO-7	understand the historical background of the establishment of UNO.	1	Un, Re
CO-8	appreciate the work of UNO.	1	Un, Re



**Semester – VI**

**Core – XII      International Relations from A.D.1945 to 2000 A. D**

<b>Code : 18UHIC63</b>	<b>Hrs / Week : 6</b>	<b>Hrs / Sem : 90</b>	<b>Credits : 4</b>
------------------------	-----------------------	-----------------------	--------------------

**Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the ideals of International Relations.	1	Un, Re
CO-2	understand the current international affairs.	1	Un, Re
CO-3	promote better international understanding.	1	Un, Re
CO-4	analyse the means to promote international peace.	4	An
CO-5	analyse the international issues and ways to solve it.	4	An
CO-6	analyse the disintegration of USSR.	4	An
CO-7	evaluate the Apartheid policy of South Africa.	5	Ev
CO-8	understand the oil diplomacy of Middle East.	1	Un, Re

Semester – VI			
Core Integral III		Historiography	
Code : 18UHIIC61	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the various disciplines of history.	1	Un, Re
CO-2	appreciate the significance of historical writings.	1	Un, Re
CO-3	enhance historical writing skills.	1	Un, Re
CO-4	analyse the various works of historians.	4	An
CO-5	know the recent trends in historical writing.	1	Un, Re
CO-6	evaluate the sources in historical writings.	5	Ev
CO-7	apply methodology in historical writings.	3	Ap
CO-8	promote thesis writing and articles.	1	Un, Re

Semester – I			
Skill Enhancement Course-I		Professional English for History	
Course Code: 21UHIPE1	Hrs/Week : 2	Hrs / Sem :30	Credits : 2

### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand to comprehend the historical events in English.	1	Un
CO-2	emphasize the reading skills of primary and secondary documents.	1	Un
CO-3	acquire the listening skills and improve reading famous speeches	3	Ap
CO-4	analyse the sentence structure and write letter	4	An
CO-5	evaluate the case study and make notes and summaries	5	Ev
CO-6	apply the practice of proof- reading and edit written material	3	Ap

SEMESTER - I			
Ability Enhancement Course -Value Education			
Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

### Books for Reference:

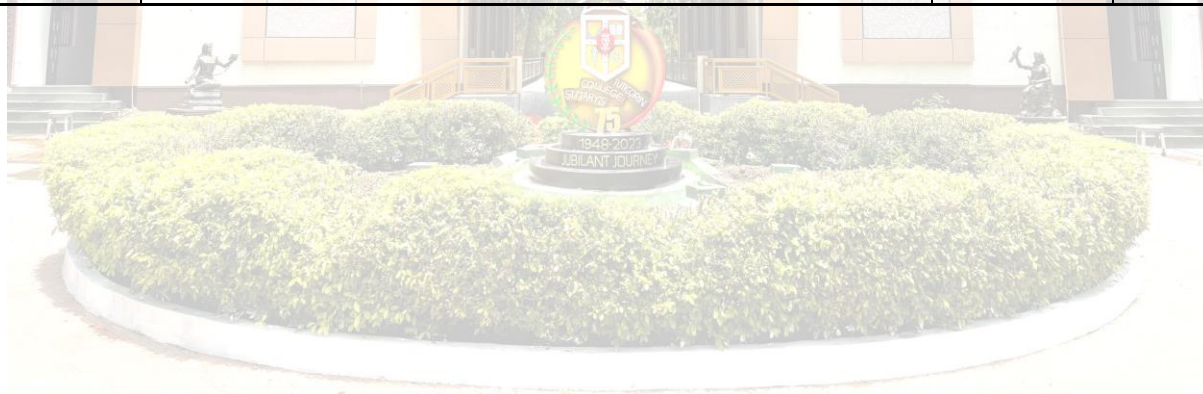
1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014



Semester – II			
Skill Enhancement Course–II		Professional English for History	
Course Code: 21UHIPE2	Hrs/Week :2	Hrs / Sem :30	Credits : 2

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know to comprehend the ideas of note making	1	Un
CO-2	enhance the professional career through English	2	Re
CO-3	promote communication skills and guarantee understanding among the people	3	Ap
CO-4	apply written and verbal communication skills and practice reading and writing	3	Ap
CO-5	analyse case study	4	An
CO-6	apply easy visual learning context	3	Ap



SEMESTER III			
Core Skill Based		Archives and Museums	
Course Code: 21UHIS31	Hrs/Week : 4	Hrs/Sem : 60	Credits : 4

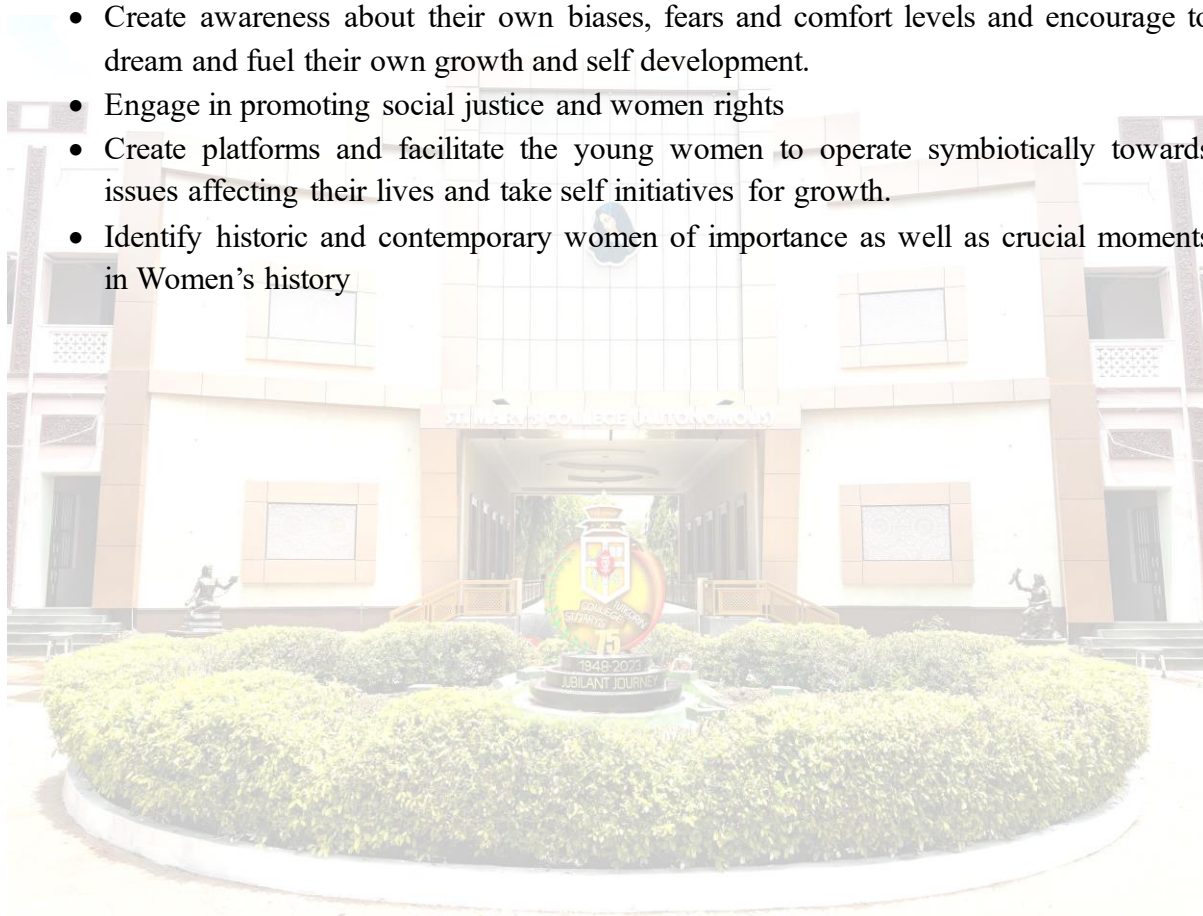
**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend the organisations and functions of Archives and Museums.	1	Un
CO-2	Familiarize with more collaborative approaches in history.	4	An
CO-3	apply the uses of Archives and Museums in historical writings.	3	Ap
CO-4	analyse the primary sources of Archives and Museums.	4	An
CO-5	identify good practice and skills of professionals and preserve Archives and Museums.	3	Ap
CO-6	evaluate the evidences of History.	5	Ev

Semester – III			
Women's Synergy			
Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2

### Course Outcome

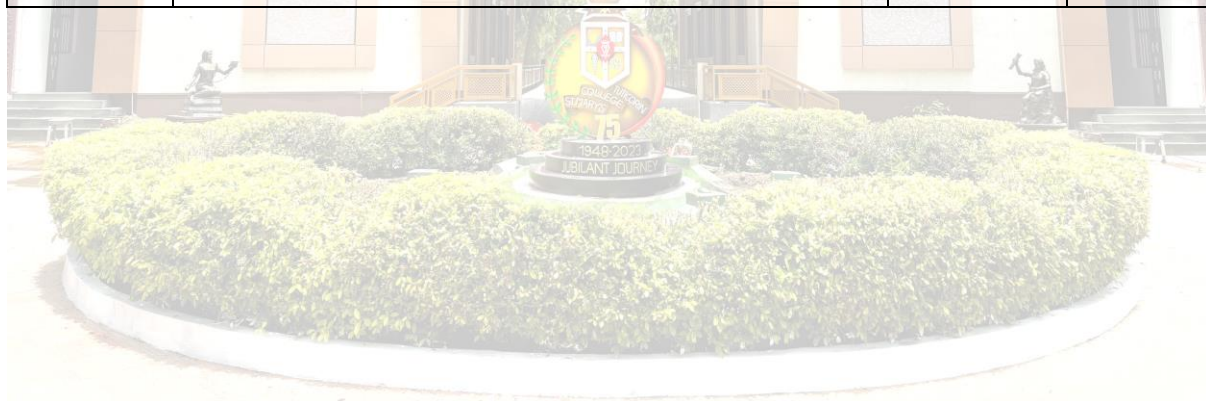
- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



Semester IV			
Core SB		Introduction to Archaeology	
Course Code:21UHIS41	Hrs/Week : 4	Hrs/Sem : 60	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	comprehend the archaeological skill to reconstruct the history of the past.	1	Un
CO-2	learn the methods of excavation and exploration.	1	Un
CO-3	apply the archaeological skills in historical writing	3	Ap
CO-4	understand excavation methods and techniques.	1	Un
CO-5	analyse the various dating system.	4	An
CO-6	appreciate the work of Archaeologists	1	Un





Semester – IV	
Self Study	Modern Tourism
Course Code : 21UHISS2	Credits : +2

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify career and educational options in the field of Tourism.	1	Un
CO-2	learn additional skills needed for a Tourist Guide.	1	Un
CO-3	follow and practice ethical behavior in a tour.	3	Ap
CO-4	use creativity and self reflection and produce meaningful conclusions.	3	Ap
CO-5	perform tourism related businesses such as front desk operations and accommodation.	3	Ap
CO-6	practice self – marketing in the tourism agency.	3	Ap



Semester –V			
Core X History of Europe from 1453-1789 C.E			
Course Code :21UHIC53	Hrs/Week: 5	Hrs/sem:75	Credits:4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn important landmarks in Europe which revolutionized the course of world history.	1	Un
CO-2	comprehend the diplomatic alliances of various European countries.	1	Un
CO-3	analyse the role of Europe in international affairs.	4	An
CO-4	evaluate the work of benevolent despots in Europe.	5	Ev
CO-5	estimate the international relations of Europe in historical context.	5	Ev
CO-6	assess the foreign policy of Europe.	5	Ev



SEMESTER V			
Core Elective B	Understanding Heritage		
Course Code: 21UHIE52	Hrs/Week : 5	Hrs/Sem : 75	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the meaning of Antiquity and the types of heritage sites.	1	Un
CO-2	adhere the conservative measures to enhance the National and International heritage.	3	Ap
CO-3	analyse the challenges facing Tangible and Intangible heritage.	4	An
CO-4	analyse the smuggling of heritage sites.	4	An
CO-5	adhere the Conventions and Acts to promote heritage.	3	Ap
CO-6	evaluate the relationship between cultural heritage and landscape.	5	Ev

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 21UCSB51

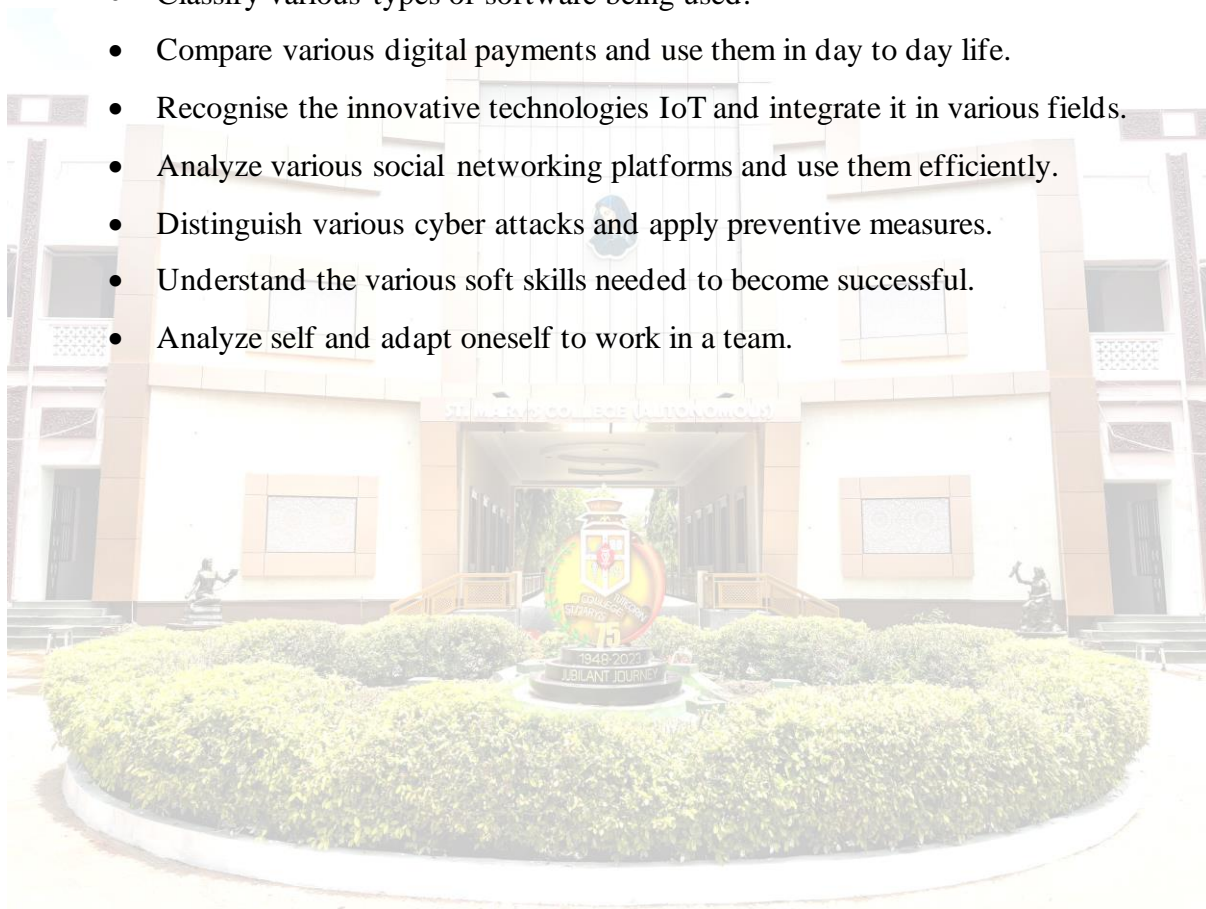
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.





**Semester – VI**

**Core – XIII                      History of Europe from A.D. 1789 to 2000 C.E**

<b>Course Code : 21UHIC63</b>	<b>Hrs / Week : 6</b>	<b>Hrs / Sem : 90</b>	<b>Credits : 4</b>
-------------------------------	-----------------------	-----------------------	--------------------

**Course Outcome:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	appreciate the work of Napoleon Bonaparte.	1	Un, Re
CO-2	analyse the impact of French Revolution and the Unification Movements of Europe.	4	An
CO-3	critical and analytical study of World Wars.	4	An
CO-4	estimate the historical background of the establishment of UNO.	5	Ev
CO-5	appreciate the work of UNO and awareness on the role of Europe in International relations.	3	Ap
CO-6	analyse the dictatorship of Hitler and Mussolini.	4	An

Semester – VI			
Core XIV		Historiography	
Course Code : 21UHIC64	Hrs / Week : 6	Hrs / Sem :90	Credits : 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the various disciplines of history and the significance of historical writings.	1	Un, Re
CO-2	apply methodology in historical writings.	3	Ap
CO-3	analyse the various works of historians.	4	An
CO-4	evaluate the sources in historical writings.	5	Ev
CO-5	know the recent trends in historical writing.	7	Un
CO-6	promote thesis writing and research articles.	3	Ap



**Programme: M. A. History**

SEMESTER – I			
Core III		Principles and Methods of Archaeology	
Sub. Code: 19PHIC13	Hrs / Week: 6	Hrs / Semester: 90	Credits: 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	provide basic knowledge in Archaeology.	1,2	Un, Re
CO-2	understand the methods of excavation.	1,2	Un, Re
CO-3	appreciate the kinds of archaeology.	1,2	Un, Re
CO-4	analyse the work of archaeologists.	4	An
CO-5	understand scientific dating system.	1	Un, Re
CO-6	enhance archaeological recordings.	1,2	Un, Re
CO-7	apply archaeological skills to enhance historical writing.	3	Ap
CO-8	analyse the history of archaeology in the world.	4	An



## SEMESTER – I

### Core IV History of China from A. D. 1840 to 1931

<b>Sub. Code: 19PHIC14</b>	<b>Hrs / Week: 4</b>	<b>Hrs / Semester:60</b>	<b>Credits: 4</b>
----------------------------	----------------------	--------------------------	-------------------

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the rule of Manchu dynasty.	1,2	Un, Re
CO-2	analyse Opium Wars.	4	An
CO-3	understand foreign embassies in China.	1,2	Un, Re
CO-4	analyse the Chinese revolution of 1911.	4	An
CO-5	understand Chinese culture.	1,2	Un, Re
CO-6	estimate Dr.Sun-Yat-Sen's role.	5	Ev
CO-7	appreciate the work of Mao-Tse-Tung.	1,2	Un, Re
CO-8	analyse Tanaka's New China policy.	4	An



SEMESTER – I			
Elective I		A Human Rights	
Sub. Code: 19PHIE11	Hrs / Week: 4	Hrs / Semester: 60	Credits: 3

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define human rights.	1,2	Un, Re
CO-2	understand the kinds of human rights.	1,2	Un, Re
CO-3	analyse French revolution and chartist movement.	4	An
CO-4	appreciate UN Declaration of human rights.	5	Ap
CO-5	analyse women and child rights.	4	An
CO-6	study the threats to human rights and violations.	1,2	Un, Re
CO-7	find out the means to overcome the challenges.	4	An
CO-8	enrich the ideals of human rights for women.	1,2	Un, Re



## SEMESTER - I

### Elective I B Women in Politics and Governance

<b>Sub. Code: 19PHIE11</b>	<b>Hrs / Week: 4</b>	<b>Hrs / Semester: 60</b>	<b>Credits: 3</b>
----------------------------	----------------------	---------------------------	-------------------

#### Course Outcome;

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	provide Women of good governance and empowerment of power in politics.	1,2	Un, Re
CO-2	train women in strategies of politics.	1,2	Un, Re
CO-3	empower women in politics and governance	1,2	Un, Re
CO-4	analyse the significant role of women in politics	4,	An
CO-5	understand the revolutionary tactics of women in politics.	1,2	Un, Re
CO-6	develop leadership and governing skills of women	1,2	Un, Re
CO-7	appraise the role of women in public life	5	Ev
CO-8	appreciate the skills of women in politics	1,2	Un, Re

## SEMESTER – I

### Elective II                      A                      Liberal Movements (Excluding India)

Sub. Code: 19PHIE12

Hrs / Week: 4

Hrs / Semester: 60

Credits: 3

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire the historical background of revolutions.	1,2	Un, Re
CO-2	estimate the role of revolutions in the world.	5	Ev
CO-3	analyse the motivating factors of revolutions.	4	An
CO-4	make a comparative study of revolutions in the world.	4	An
CO-5	evaluate the liberal reforms.	5	Ev
CO-6	analyse the impact of revolutions.	4	An
CO-7	understand the legacy of revolutions.	1,2	Un, Re
CO-8	develop the art of self determination of the people.	1,2	Un, Re



## SEMESTER - I

**Elective II                      B                      History of South East Asia – The 20<sup>th</sup> Century**

**Sub. Code: 19PHIE12**

**Hrs / Week: 4**

**Hrs / Semester: 60**

**Credits: 3**

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the problems of migration.	1,2	Un, Re
CO-2	make aware of present resistance.	1,2	Un, Re
CO-3	evaluate the radicalism.	5	Ev
CO-4	analyse the Vietnamese revolution.	4	An
CO-5	appreciate the union of Burma(Myanmar)	1,2	Un, Re
CO-6	enumerate the revolutionary ideas and its impact.	1,2	Un, Re
CO-7	assess the work of Sukarno .	5	Ev
CO-8	analyse the Vietnam wars and its unification.	4	An





Semester – II			
Core – VI		Ancient World Civilisations (Excluding India)	
Sub Code : 19PHIC22	Hrs / Week : 6	Hrs / Sem : 90	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the birth of civilisations.	1,2	Un, Re
CO-2	know the date and extent of the civilisations.	1,2	Un, Re
CO-3	know the favourable factors of geographical features.	1,2	Un, Re
CO-4	appreciate the work of great personalities.	1,2	Un, Re
CO-5	trace out the river valley civilisations.	1,2	Un, Re
CO-6	estimate the legacy of civilisations.	5	Ev
CO-7	analyse and compare the ancient civilisations.	4	An
CO-8	estimate the causes for the decline of the civilisations.	5	Ev

**Semester – II****Core – VII****Contemporary World Since 1945****Sub Code : 19PHIC23****Hrs / Week : 6****Hrs / Sem : 90****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the organization and functions of UNO.	1	Un, Re
CO-2	analyse the nature of Cold War.	4	Un, Re
CO-3	analyse the apartheid policy of South Africa.	4	Un, Re
CO-4	assess the role of OPEC in International Politics.	5	Ev
CO-5	acquire the knowledge of Emerging New World Order.	1,2	Un, Re
CO-6	understand decolonisation.	1,2	Un, Re
CO-7	estimate regional organizations.	5	Ev
CO-8	analyse civil rights, labour and feminist movements.	4	An



## Semester – II

### Elective III                      A                      India – The Making of a Colony

**Sub Code : 19PHIE21**

**Hrs / Week : 4**

**Hrs / Sem : 60**

**Credits : 3**

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the factors behind the geographical discoveries.	1,2	Un, Re
CO-2	analyse the importance of geographical discoveries in Indian history.	4	An
CO-3	learn the different phases of the war for supremacy.	1,2	Un, Re
CO-4	evaluate the administration of Governor - Generals.	5	Ev
CO-5	analyse the British imperialist policy.	4	An
CO-6	understand the British revenue settlements.	1,2	Un, Re
CO-7	appreciate the reforms of British period.	1,2	Un, Re
CO-8	trace out the transfer of power from the British crown.	1,2	Un, Re



Semester – II			
Elective IV      A		Archives Keeping	
Sub Code : 19PHIE22	Hrs / Week : 4	Hrs / Sem : 60	Credits : 3

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	update the primary sources of History.	1,2	Un, Re
CO-2	understand the latest micro filming data collections.	1,2	Un, Re
CO-3	know the structure and functions of Archives.	1,2	Un, Re
CO-4	appreciate the work of organisation.	1,2	Un, Re
CO-5	understand the significance of record maintenance.	1,2	Un, Re
CO-6	estimate the History of Archives.	5	Ev
CO-7	learn the pool of resources of history.	1,2	Un, Re
CO-8	know the mending of records.	4	An





Semester – III			
Core – X		History of USA up to A. D 1865	
Sub Code : 19PHIC32	Hrs / Week : 6	Hrs / Sem :90	Credits : 4

**Course Outcome:**

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the acquired knowledge of colonization and the war of Independence.	1,2	Un,Re
CO-2	analyze sectional conflict and interpret civil war in USA.	4	An
CO-3	understand the dynamics of multi-cultural society.	1,2	Un,Re
CO-4	become aware of important landmarks in the History of USA.	1,2	Un,Re
CO-5	highlight Westward expansion and its issues.	1,2	Un,Re
CO – 6	appreciate the service of Abraham Lincoln.	1,2	Un,Re
CO- 7	understand the lifestyle of Indian tribes in USA.	1,2	Un,Re
CO-8	make aware of the Foreign Policy of USA towards Latin America.	1,2	Un,Re



**Semester – III****Core – XII****Research Methodology****Sub Code : 19PHIC34****Hrs / Week : 4****Hrs / Sem : 90****Credits : 4****Course Outcome:**

<b>Co.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	enhance the research skills and recent trends in research.	1,2	Un,Re
CO-2	practice the research skills in writing projects, thesis etc.	3	Ap
CO-3	open new avenues in doing historical research.	3	Ap
CO-4	acquire skills regarding selection of topic, hypothesis, project outline and field work.	1,2	Un,Re
CO-5	equip and expose objectivity and subjectivity to present authentic facts.	1,2	Un,Re
CO-6	analyse the work of Historical writings.	4	An
CO-7	assess the work of various historians .	5	Ev
CO-8	understand the documentation in Thesis writing.	1,2	Un, Re

Semester – III			
Elective V		A Women Studies	
Sub Code : 19PHIE31	Hrs / Week : 4	Hrs / Sem : 60	Credits : 3

**Course Outcome:**

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the nature and scope of Women studies.	1,2	Un,Re
CO-2	become aware of gender issues and gender equity.	1,2	Un,Re
CO-3	analyse the social evils of the society.	4	An
CO-4	comparative study of pre and post Independent India.	1,2	Un,Re
CO-5	make aware of women legislations in India.	4	An
CO-6	appreciate the services of social reformers.	1,2	Un,Re
CO-7	prepare to face the challenges of women.	1,2	Un,Re
CO-8	understand the means to women empowerment.	1,2	Un,Re

**Semester – III****Elective V****B Rise of Modern West****Sub Code : 19PHIE31****Hrs / Week : 4****Hrs / Sem : 60****Credits : 3****Course Outcome:**

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the features of Feudalism.	1,2	Un, Re
CO-2	analyse the role of capitalism.	4	An
CO-3	highlights the adventurous voyages.	1,2	Un, Re
CO-4	appreciate the geographical sea routes to the East.	1,2	Un, Re
CO-5	analyse the classical works of Greek and Rome.	4	An
CO-6	learn the significance of Humanist movement.	1,2	Un, Re
CO-7	appreciate the Renaissance and Reformation movement.	1,2	Un, Re
CO-8	assess the Counter Reformation movement.	5	Ev





Semester – IV			
Core XV		History of USA from A. D. 1865 to 2010	
Sub Code : 19PHIC43	Hrs / Week : 5	Hrs / Sem : 75	Credits : 4

**Course Outcome:**

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	outline the history of USA under various Presidents.	1,2	Un, Re
CO-2	examine the New Deal measures of FDR .	4	An
CO-3	trace out awareness about the Civil Rights movement.	1,2	Un, Re
CO-4	assess the impact of US foreign policy since the I World War.	5	Ev
CO-5	understand the emergence of USA as a super power in the world.	1,2	Un, Re
CO-6	aware of Pan – American movement.	1,2	Un, Re
CO-7	analyse the historical background of Twin Tower attack.	4	An
CO-8	assess the role of USA in International politics.	5	Ev



Semester – IV			
Core XVII		Project	
Sub Code : 19PHIP41	Hrs / Week : 8	Hrs / Sem : 120	Credits : 8

**Course Outcome:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the essence of the research work.	1	Un, Re
CO-2	appreciate the value of historical sites.	1	Un, Re
CO-3	enhance the data collections through various means.	1	Un, Re
CO-4	appreciate the role of Archives and Libraries.	1	Un, Re
CO-5	know the recent methodology in historical writing.	1	Un, Re
CO-6	evaluate the sources in historical writings.	5	Ev
CO-7	apply methodology in historical writings.	3	Ap
CO-8	promote thesis writing and articles.	1, 2	Un, Re

## SEMESTER – I

### Core IV Principles and Methods of Archaeology

<b>Course Code: 21PHIC14</b>	<b>Hrs / Week:6</b>	<b>Hrs / Semester: 90</b>	<b>Credits:4</b>
------------------------------	---------------------	---------------------------	------------------

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the basic concepts in Archaeology.	1	Un
CO-2	appreciate the kinds of archaeology.	2	Re
CO-3	analyse the works of archaeologists and the archaeological methods in the world.	4	An
CO-4	apply archaeological skills to enhance historical writing.	3	Ap
CO-5	examine the scientific dating system.	4	An
CO-6	update and visit the recent archaeological excavations.	3	Ap



## Semester – II

Criterion I

SSR Cycle V

**Core VIII****Contemporary World Since 1945 C.E.****Course Code : 21PHIC23****Hrs / Week : 5****Hrs / Sem : 75****Credits : 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the organization and functions of UNO and acquire the knowledge of Emerging New World Order.	1	Un
CO-2	analyse the nature of Cold War.	4	An
CO-3	estimate regional organizations.	5	Ev
CO-4	assess the role of OPEC in International Politics.	5	Ev
CO-5	analyse the apartheid policy of South Africa.	4	An
CO-6	analyse civil rights, labour and feminist movements.	4	An

**Semester-III**

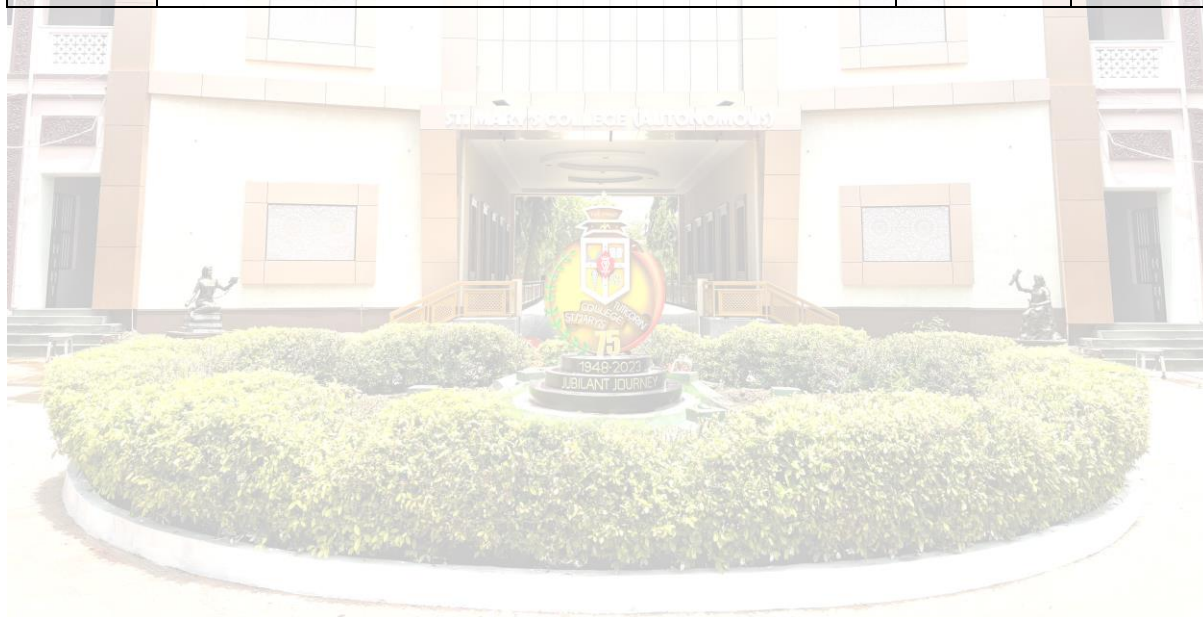
Criterion I

SSR Cycle V



**Core – XIII****History of USA upto 1865 C.E****Course Code:21PHIC33****Hrs/Week:5****Hrs/Sem:75****Credits:4****Course Outcome**

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire the knowledge of colonization and the war of Independence.	1	Un
CO-2	analyze sectional conflict and interpret civil war in USA.	4	An
CO-3	analyse the Foreign Policy of USA towards Latin America.	4	An
CO-4	become aware of important land marks in the History of USA and the life style of Indian tribes in USA.	7	Un
CO-5	evaluate Westward expansion and its issues.	5	Ev
CO-6	estimate the contributions of Abraham Lincoln.	5	Ev

**Semester-III**

Core – XV Historical Methods – Theory and Practice			
Course Code: 21PHIC35	Hrs/Week: 5	Hrs/Sem: 75	Credits:4

### Course Outcome

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	enhance the research skills and recent trends in research.	3	Ap
CO-2	practice the research skills in writing projects, thesis etc.	3	Ap
CO-3	open new avenues in doing historical research.	3	Ap
CO-4	assess the work of various historians.	5	Ev
CO-5	equip and expose objectivity and subjectivity to present authentic facts.	1	Un,
CO-6	analyse the work of Historical writings.	4	An



### Semester–III

#### Core Elective II A

#### History of Modern West

Course Code: 21PHIE31

Hrs/Week:5

Hrs/Sem: 75

Credits:4

#### Course Outcome

Co.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the features of Feudalism and Capitalism.	1,2	Un
CO-2	assess the Counter Reformation movement..	4	An
CO-3	analyse the classical works of Greek and Rome.	4	An
CO-4	estimate the geographical sea routes to the East.	5	Ev
CO-5	examine the significance of Humanist movement..	4	An
CO-6	estimate the international causation and change in world History	8	Ev



### SEMESTER – III

#### Core Elective II B History of South East Asia–The 20<sup>th</sup> Century

**Course Code: 21PHIE32**

**Hrs/Week:5**

**Hrs/Sem: 75**

**Credits:4**

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the problems of migration and make aware of present resistance movements.	1	Un
CO-2	evaluate the radicalism in politics.	5	Ev
CO-3	appreciate the union of Burma(Myanmar)	1	Un
CO-4	analyse the Vietnamese revolution.	4	An
CO-5	assess the work of Sukarno.	5	Ev
CO-6	estimate the revolutionary ideas and its impact.	5	Ev





### Semester-IV

#### Core XIX History of USA from 1865 to 2020 C.E

Course Code: 21PHIC44      Hrs/Week: 6      Hrs/Sem: 90      Credits:4

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	outline the history of USA under various Presidents.	1,2	Un, Re
CO-2	examine the New Deal measures of FDR.	4	An
CO-3	analyse the origin and cause for the Civil Rights movement.	4	An
CO-4	assess the impact of US foreign policy since the First World War.	5	Ev
CO-5	analyse the historical background of Twin Tower attack.	4	An
CO-6	assess the role of USA in International politics.	5	Ev



**SEMESTER-IV****Core XX****Human Rights****Course Code: 21PHIC45****Hrs/Week:6****Hrs/Semester: 90****Credits: 6****Course Outcome**

CO. No.	Up on completion of this course, students will be able to	PSO addressed	CL
CO-1	understand human rights and the kinds of human rights.	1	Un
CO-2	analyse women and child rights.	4	An
CO-3	analyse French revolution and chartist movement.	4	An
CO-4	comprehend UN Declaration of human rights.	1	Un
CO-5	adhere and enrich the ideals of human rights for women.	3	Ap
CO-6	examine the threats to human rights and violations.	4	An



Semester–IV			
Core XX/Project	Project		
Course Code: 21PHIP41	Hrs/Week: 6	Hrs/Sem: 90	Credits: 6

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the essence of the research work.	1	Un
CO-2	appreciate the value of historical and archaeological sites.	1	Un
CO-3	appraisal of data collections through various means.	5	Ev
CO-4	evaluate the sources in historical writings.	5	Ev
CO-5	analyse the recent methodology in historical writing.	1	Un, Re
CO-6	apply methodology in historical writings.	3	Ap



**Programme: B. Sc. Mathematics**

<b>SEMESTER – I</b>			
<b>Core I</b>		<b>Classical Algebra</b>	
<b>Code :18UMAC11</b>	<b>Hrs / Week: 5</b>	<b>Hrs / Semester: 75</b>	<b>Credits: 4</b>

**Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	solve polynomial equations and simultaneous linear equations.	4	An
CO-2	solve the equations using the relation between the roots and coefficients.	4	An
CO-3	form the equations from the given roots and identify and solve the reciprocal equations	5 , 9	Cr, Un
CO-4	transform the equations by increasing, decreasing and multiplying the roots of the equations	4	Un
CO-5	solve the equations by removing the terms of the equations.	4	Ap
CO-6	locate real and imaginary roots of the equations	5 , 9	Un
CO-7	find the approximate values of the irrational roots of the equations.	4	Cr
CO-8	<u>d</u> etermine the roots of the equations by using various methods like Cardon's method, Ferrari's method.	4	Cr



**SEMESTER – I****Core II****Calculus****Code :18UMAC12****Hrs / Week: 5****Hrs / Semester: 75****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	state the concept of curvature of a plane curve.	5	Re
CO-2	calculate the curvature of various curves in plane and space	5, 9	Ev
CO-3	apply the fundamental concepts of Calculus to variety of real world problems.	4	Ap
CO-4	find surface area using a double integral.	3, 8	Un
CO-5	evaluate triple integrals and use them to find volumes in rectangular, cylindrical and spherical coordinates.	4, 10	Ev
CO-6	compute definite and indefinite integrals of algebraic and trigonometric functions using formulae and substitution	10	Cr
CO-7	know the relationship between the Gamma and Beta functions	6, 7	An
CO-8	use Beta and Gamma function to solve different type of integrals and to understand Gamma function as a generalization of factorial function.	7	Un, Ev

**SEMESTER - I****Allied Physics – Paper I****18UPHA11****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define fundamentals of elasticity and discuss concepts of stress and strain and the relationship between both, use the stress-strain equations to solve the problems of elastic modes	1	Re, Un
CO-2	solve problems related to uniform and non-uniform bending of beams	1	An
CO-3	define the terms viscosity and surface tension	1	Re
CO-4	describe the properties of fluids such as viscosity, surface tension and capillary rise and evaluate the value of coefficient of viscosity	1,2,6	Un,Ev
CO-5	estimate the thermal conductivity of a bad conductor	1	Ev
CO-6	calculate the specific heat capacity of a liquid	1, 6	An
CO-7	calculate the thickness of a thin wire by forming interference fringes	1, 2, 6	An
CO-8	assess the dispersive power and resolving power of a grating	1, 2, 6	Ev

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER – II****Core III Analytical Geometry of Three Dimensions****Code:18UMAC21****Hrs / Week: 5****Hrs / Semester: 75****Credits: 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamental aspects of three-dimensional geometry.	1,2 , 3	Un
CO-2	represent simple three-dimensional figures using two-dimensional drawings.	4	Un
CO-3	demonstrate basic mathematical understanding and computational skills in three dimensions.	5 , 9	Un
CO-4	apply algebraic methods to the study of curves and surfaces that lie in three dimensions.	5	Ap
CO-5	apply geometric properties and relationships to solve problems in three dimensions.	5	Un
CO-6	develop logical thinking, geometric thinking and three-dimensional spatial ability.	6 , 7	An
CO-7	solve many difficult problems with simple solutions.	6, 10	Cr
CO-8	create opportunities to use spatial skills in problem-solving tasks.	5, 9	Cr



**SEMESTER – II****Core IV****Differential Equations****Code:18UMAC22****Hrs / Week: 5****Hrs / Semester: 75****Credits: 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify an ordinary differential equation and its order.	4	Un
CO-2	verify whether a given function is a solution of a given ordinary differential equation (as well as verifying initial conditions when applicable).	5, 9	An
CO-3	classify ordinary differential equations into linear and nonlinear equations.	5, 9	Un
CO-4	solve first order linear differential equations.	4	An
CO-5	find the general solution of second order linear homogeneous equations with constant coefficients.	4	Cr
CO-6	compute the Laplace transform and inverse Laplace transform	4	Ap
CO-7	use the Laplace transform to compute solutions of second order, linear equations with constant coefficients	4	Ap
CO-8	identify essential characteristics of ordinary and partial differential equations.	4	Un

**SEMESTER – II****Allied Physics – Paper II****18UPHA21****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	apply the Gauss law in the calculation of electric fields due to various charge distributions and Understand coulomb's law which gives an idea about the electrostatic force between point charges.	1	Ap, Un
CO-2	define and explain self and mutual inductance	1	Re, Un
CO-3	employ Lenz law and Faraday's law for magnetically coupled circuits	1	An
CO-4	apply knowledge of electricity and magnetism to explain the nature of physical process and related technological advances	1	Ap
CO-5	understand the principle of energy release in nuclear reactions and identify the present energy scenario and the need for energy conservation	8	Un
CO-6	examine the structure of various number system and its application in digital design	6, 8	Un, An
CO-7	analyse the environmental aspects of renewable energy sources	5	An
CO-8	acquire the knowledge of solar cells, photovoltaic cells, wind energy and solar energy principles and applications	5	Un

**Semester – III****Part III      Core V      Sequences and Series, Trigonometry****Code :18UMAC31****Hrs/week :6****Hrs/Semester :90****Credits :4****Course Outcome**

Co No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop the analytical thinking to generalize the known concepts.	3	Cr
CO-2	know the important inequalities necessary to compare the real numbers.	3	Ev
CO-3	explain the difference between a sequence and a series in the mathematical context.	2	Un
CO-4	able to identify boundedness, monotonic, limit points etc. of a sequence.	8	Un
CO-5	able to apply various tests to verify the convergence or divergence of a given sequence and also the series.	4	Ap
CO-6	gain a basic knowledge about analysis which helps them in higher studies.	3	Re
CO-7	apply the real situation wherever usage of trigonometrical equations	4	Ap
CO-8	reconstruct the formulae which are accustomed in elementary levels	8	Ev

### Semester – III

**Part III Allied III**

**Statistics I**

**Code :18UMMA31**

**Hrs/week :3**

**Hrs/ Semester:45**

**Credits : 3**

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the difference between the central moments and general moments	1	Un
CO-2	compute the central moments and general moments	3	Ev
CO-3	analyse the time reversal test	8	Cr, Ap
CO-4	convert fixed base index to chain base index	3	Ap
CO-5	classify the different index numbers	8	Un, Ap
CO-6	find correlation between two variables	3	Ap
CO-7	evaluate particular regression lines	3, 7	Ap
CO-8	know the uses of index numbers	4	Cr





### Semester –III

**Part III Allied IV**

**Linear Programming**

**Code : 18UMMA32**

**Hrs/week : 3**

**Hrs/ Semester:45**

**Credits : 3**

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop a fundamental understanding of linear programming models	1, 3	Un
CO-2	develop a linear programming model from problem description	5	An
CO-3	formulate a simplified description of a suitable real-world problem as a linear programming model in general, standard and canonical forms	8	Cr
CO-4	solve a two-dimensional linear programming problem graphically.	8	Ap
CO-5	convert a linear programming problem into standard form.	8	Un
CO-6	apply the simplex method for solving linear programming problem.	5	Ap
CO-7	express the dual of a linear programming problem and solve the resulting dual problem using the dual simplex method	8	Cr,Ap
CO-8	model , analyze or solve a practical real-world problem using the theory and methods learned in this course	4, 5	Ap,An

**Semester – III****Part III Core Skill Based Numerical Aptitude and Arithmetic Ability****Code :18UMAS31****Hrs/week : 4****Hrs/ Semester : 60****Credits :4****Course outcome**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquire the ability to understand and analyze the problem	2	Un
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve mathematical problems using shortcut methods.	4	Cr
CO-4	build confidence to face the competitive examinations.	5	Cr
CO-5	solve the questions with accuracy and within the given time limit.	3	Cr
CO-6	enhance logical skills, arithmetic skills and aptitude skills.	5	Ap
CO-7	simplify and evaluate algebraic expressions.	3	Ev
CO-8	use mathematical concepts in real world situations.	4, 8	Ap

**SEMESTER – IV****Part III      Core VI      Real Analysis****Code :18UMAC41****Hrs / Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	interpret real number system and its properties.	1	Un
CO-2	define and recognize the continuity of real functions	1	Re
CO-3	define and recognize the real functions and its limits	1	Re
CO-4	interpret mathematical ideas via extended written presentation.	2	Un
CO-5	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	An
CO-6	formulate proofs and structure mathematical arguments.	6	An
CO-5	determine the continuity, differentiability and integrability of functions defined on subsets of the real line	3	Ev
CO-7	apply the Mean Value Theorem and the Fundamental theorem of Calculus to problems in the context of real analysis	5	Ap
CO-8	describe fundamental properties of the real numbers that lead to the formal development of real analysis.	3	An

Semester - IV			
Part III	Allied V	Statistics II	
Code : 18UMMA41	Hrs/week :3	Hrs/ Semester :45	Credits : 3

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the difference between the discrete distribution and continuous distribution.	1, 2	Un
CO-2	calculate the mean, mode and median for different distributions.	7	Ap
CO-3	find approximate solutions to problems	4, 8	Cr, Un
CO-4	apply concepts and theorems in solving problems.	4	Ap
CO-5	demonstrate problem solving skills	3	An
CO-6	evaluate recurrence relation of p.d.f for various distribution.	3	An
CO-7	fit binomial, poisson and normal distribution.	8	Ap
CO-8	compare moment generating function and cumulant generating function	2, 7	Ev



## Semester –IV

### Part III Allied VI Discrete Mathematics

Code :18UMMA42	Hrs/week :3	Hrs/ Semester:45	Credits :3
----------------	-------------	------------------	------------

### Course Outcome

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand logic and mathematical reasoning to count or enumerate objects in a systematic way.	1	Un
CO-2	use truth tables for expressions involving the logical connectives .	8	Ap
CO-3	develop capacity in knowing what constitutes a valid argument, and in constructing valid arguments or proofs.	3	An
CO-4	apply standard rules of inference.	3	Ap
CO-5	grasp the notions of lattices.	1	Un
CO-6	understand Boolean algebra and truth tables.	1	Un
CO-7	evaluate Boolean functions and simplify expressions using the properties of Boolean Algebra.	5	Ev
CO-8	apply logical reasoning to solve a variety of problems.	4	Ap

### Semester – IV

#### Part III Core Skill Based Math Type using LaTeX

Code :18UMAS41	Hrs/week :4	Hrs/ Semester:60	Credits :4
----------------	-------------	------------------	------------

#### Course Outcome

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the difference between MS Word and LaTeX	3	Un
CO-2	understand the uses of LaTeX	2	Un
CO-3	apply LaTeX in their typing work	1	Un
CO-4	handle math symbols and tables	3	An
CO-5	create documents and make small presentations.	3	Ap
CO-6	become proficient in the use of software applications as used in an office environment.	3, 8	Ap
CO-7	manipulate with the real life needs in preparing documents	3	Ap
CO-8	prepare projects in updating with the new updates and versions	8	Cr

**Semester –V****Part III Core VII (Common Core) Computer Oriented Numerical Methods****Code: 18UCCC51****Hrs/Week: 6****Hrs/ Semester : 90****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	find numerical solution of a problem in all aspects and apply these methods to practical implementation as reliable and efficient.	3	Re
CO-2	recognize and apply appropriate principles and concept relevant to numerical analysis.	5	Ap
CO-3	discover the most appropriate estimate for the missing data.	1	Cr
CO-4	analyze the errors obtained in the numerical solutions of problems.	6	An
CO-5	use appropriate numerical methods, determine the solutions to given problems.	3	Ap
CO-6	demonstrate the use of the interpolation method to find the solution for the data.	8	Un
CO-7	develop their calculation skills.	1	Cr
CO-8	differentiate gauss jacobi iteration and gauss seidal iteration method.	3	

Semester – V			
Part III	Core VIII	Modern Algebra	
Code :18UMAC52	Hrs/week :5	Hrs/Semester :75	Credits :4

### Course Outcome

CO No	Upon completion of this course, students will	PSO addressed	CL
CO-1	explain the theory behind relations and functions and how functions may relate dissimilar structures to each other.	3	Cr
CO-2	describe and generate the basic algebraic structures such as Groups, Rings, Fields, Integral Domain, Euclidean Domain, etc., and will identify examples of these specific constructs.	1	Ev
CO-3	have a working knowledge of important mathematical concepts such as order of Group, order of an element, generator of a cyclic group, index of a subgroup, characteristic of a Ring, Maximal and Prime Ideals etc.,	2	Un
CO-4	analyze relationship between abstract algebraic structures with familiar number system such as integers, complex and real numbers	2	An
CO-5	critically analyze and construct mathematical arguments that relate to the study of introductory linear algebra. (Proof and Reasoning).	8	An
CO-6	develop ability to form and evaluate conjectures.	1, 5	Ap
CO-7	produce the group concepts in other science disciplinary	3	Ap
CO-8	illustrate the isomorphic structures	8	An



Semester – V			
Part III	Core IX	Modern Analysis	
Code :18UMAC53	Hrs / Week: 5	Hrs / Semester: 75	Credits: 4

### Course Outcome

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	gain knowledge of concepts of modern analysis, such as open sets ,closed sets, completeness, connectedness and compactness in metric spaces	1	Un
CO-2	be able to write simple proofs on their own and study rigorous proofs	5	Ap
CO-3	develop a higher level of mathematical maturity combined with the ability to think analytically	2	Un
CO-4	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	Ap
CO-5	formulate proofs and structure mathematical arguments.	6	Ap
CO-6	explain the basic theory of metric spaces and its application to function spaces.	3	Ev
CO-7	follow more advanced treatments of real analysis and study its applications	3	Ap
CO-8	apply the theory to solve mathematical problems including the construction of simple proofs.	2	An

Semester –V			
Part III	Core X	Operations Research	
Code :18UMAC54	Hrs/week : 4	Hrs/Semester :60	Credits : 4

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify optimum solution.	1	Un
CO-2	interpret the mathematical tools that are needed to solve optimization problems.	2	Ap
CO-3	make decision and improve its quality.	3	Ev
CO-4	comprehend the concept of a Transportation Model and develop the initial solution for the same	4	Un
CO-5	apply the Hungarian method for solving assignment problems	5	Ap
CO-6	examine the significant impact of job sequencing system on total elapsed time management	8	An
CO-7	use CPM and PERT techniques, to plan, schedule, and control project activities.	4	Ap
CO-8	apply Mathematical theories to Commerce and Business and Management	3	Ap

**Semester –V**

**Part III      Core Integral I      Vector Calculus and Fourier Series**

**Code :18UMAI51**

**Hrs/week :4**

**Hrs/Semester :60**

**Credits :4**

**Course Outcome**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate and integrate vector-valued functions and apply calculus to motion problems in two and three dimensional space	2	An
CO-2	compute gradient, curl and divergence of vector fields.	1, 3	C
CO-3	use the gradient to find directional derivatives.	3	Ap
CO-4	solve problems in multiple integration using rectangular, cylindrical, and spherical coordinate systems	8	A
CO-5	select and apply appropriate models and techniques to define and evaluate integrals	3	E
CO-6	apply greens theorem, stokes theorem and gauss divergence theorem to evaluate integrals.	3	A
CO-7	know that any periodic function can be expressed as a fourier series.	6	Cr
CO-8	expand an odd or even function as a half-range cosine or sine fourier series.	1	Un, An

**Semester – V**

**Part III      Core Integral II      Statistical Inference**

**Code :18UMAI52      Hrs/week :4      Hrs/Semester :60      Credits :4**

**Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the uses of statistical quality control.	1	Un
CO-2	compute the upper and lower control limits for different chart	3	Ev
CO-3	analyse the usage of different charts.	8	Cr, Ap
CO-4	know type I and type II error	1	Cr
CO-5	classify the different test static	5	Un, Ap
CO-6	check the difference between small and large samples.	1	Ap
CO-7	evaluate t-test, F-test etc	3, 7	Ap
CO-8	apply the correct test static	4	Ap



## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

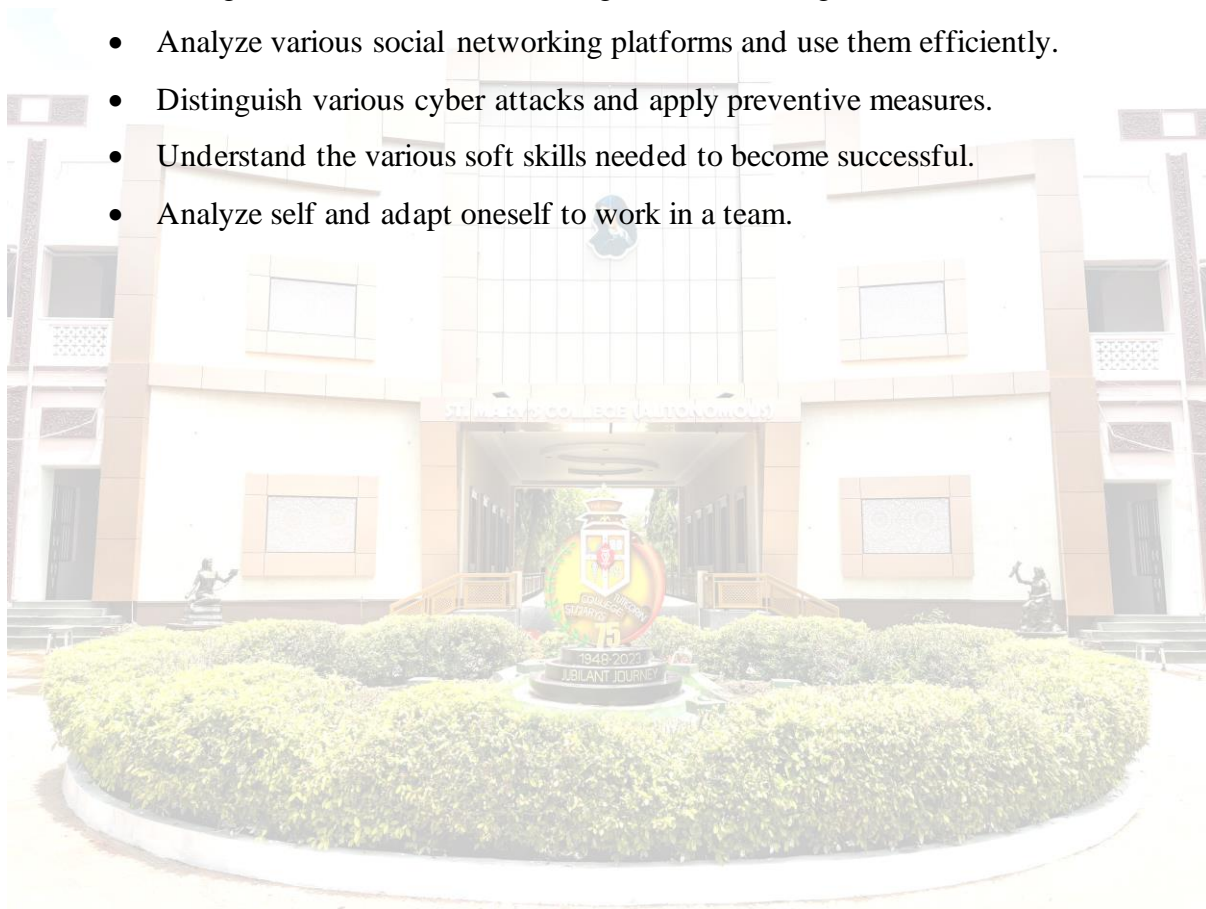
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



Semester –VI			
Part III	Core XI	Complex Analysis	
Code :18UMAC61	Hrs/week :6	Hrs/Semester :90	Credits :4

### Course Outcome

CO. No	Upon successful completion of this course students will be able to	PSO addressed	CL
CO-1	compute sums, products, quotients, conjugate, modulus, and argument of complex numbers.	1	An
CO-2	understand the significance of differentiability for complex functions and be familiar with the Cauchy-Riemann equations.	2	Un
CO-3	evaluate integrals along a path in the complex plane and understand the statement of Cauchy's Theorem.	6	Ev
CO-4	know the condition(s) for a complex variable function to be analytic and/or harmonic.	3	Un
CO-5	compute the Taylor and Laurent expansions of simple functions, determining the nature of the singularities and calculating residues.	2	An
CO-6	use the Cauchy Residue theorem to evaluate integrals and sum series.	6	Ap
CO-7	demonstrate curve properties for image processing with transformation	6	Ap
CO-8	outline complex number system with intense perception	6	An

Semester –VI			
Part III	Core XII	Linear Algebra	
Code : 18UMAC62	Hrs/week : 6	Hrs/Semester : 90	Credits : 4

**Course Outcome :**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know all the definitions in Linear Algebra	1	U
CO-2	analyze and construct mathematical arguments that relate to the study of linear algebra. (proof and reasoning).	2, 3	An
CO-3	solve systems of linear equations.	3	A
CO-4	work within vector spaces and to distill vector space properties	3	An
CO-5	determine whether a system of equations is consistent or not and find its general solution.	6	An
CO-6	compute eigenvalues and eigenvectors of a matrix.	4	A
CO-7	develop analytical thinking	5	An
CO-8	understand the concept of Inner Product Spaces	1	U

Semester VI			
Part III	Core XIII	Mechanics	
Code :18UMAC63	Hrs/week :6	Hrs/Semester :90	Credits :4

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the equilibrium of forces	1	Un
CO-2	know the conditions for equilibrium	3	Ev
CO-3	distinguish between parallel and non parallel forces	8	Cr, Ap
CO-4	know the types of friction laws	1	Cr
CO-5	apply friction laws in problems	5	Un, Ap
CO-6	understand the two types of impact	1	Ap
CO-7	understand the simple harmonic motion	3, 7	Ap
CO-8	determine the simple harmonic motion	4	Ap





Semester VI			
Part III	Core Integral III	Graph Theory	
Code :18UMAI61	Hrs / Week: 5	Hrs / Semester: 75	Credits: 4

### Course Outcome

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	interpret the basics of graphs.	1	Un
CO-2	identify induced subgraphs, paths, cycles, independent sets and coverings in graphs	1	Re
CO-3	determine whether graphs are Hamiltonian and/or Eulerian and to solve problems involving vertex and edge connectivity, planarity and crossing numbers	5	An
CO-4	combine theoretical knowledge and independent mathematical thinking in creative investigation of questions in graph theory.	8	Un
CO-5	inspect the applications of graph theory	7	An
CO-6	model and solve real-world problems using graphs both quantitatively and qualitatively.	4	Ap
CO-7	develop an appropriate level of mathematical literacy and competency.	6	Cr
CO-8	formulate problems in terms of graphs, solve graph theoretic problems and apply algorithms.	5	Cr

Semester VI			
Core Integral	IV	Coding theory	
Code: 18UMAI62	Hrs / Week: 7	Hrs / Semester: 105	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamental concepts of coding theory, types of error and control code technique.	1	Un
CO-2	perform with vectors, matrices and projective spaces over finite fields and polynomials.	4	Cr
CO-3	describe the concepts of extended golay code and decode the extended golay code.	3	Ev
CO-4	analyze the theoretical principles of source coding.	6	An
CO-5	analyze the notion of various decoding techniques.	3	An
CO-6	understand and analyze the concepts of error control coding.	2	Un, An
CO-7	prove general facts about different codes and block control coding.	6	Ev
CO-8	apply the knowledge of perfect codes, hamming codes, extended codes and golay codes for error detection and correction.	5	Ap

SEMESTER – I			
Part III	Core I	Classical Algebra	
Course Code:21UMAC11	Hrs / Week: 4	Hrs / Semester: 60	Credits: 3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	solve polynomial equations and simultaneous linear equations.	3	An
CO-2	form the equations from the given roots and identify and solve the reciprocal equations	4	Cr
CO-3	transform the equations by increasing, decreasing and multiplying the roots of the equations	3	Un
CO-4	locate real and imaginary roots of the equations	4	Un
CO-5	find the approximate values of the irrational roots of the equations.	3	Cr
CO-6	determine the roots of the equations by using various methods like Cardon's method, Ferrari's method.	3	Cr



**SEMESTER – I****Core II****Calculus****Course Code :21UMAC12****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	state the concept of curvature of a plane curve.	4	Re
CO-2	calculate the curvature of various curves in plane and space	4	Ev
CO-3	apply the fundamental concepts of Calculus to variety of real world problems.	3	Ap
CO-4	evaluate triple integrals and use them to find volumes in rectangular, cylindrical and spherical coordinates.	3	Ev
CO-5	compute definite and indefinite integrals of algebraic and trigonometric functions using formulae and substitution	3	Cr
CO-6	use Beta and Gamma function to solve different type of integrals and to understand Gamma function as a generalization of factorial function.	6	Ev



### SEMESTER I / III

#### Allied Physics – Paper I - I B.Sc., Mathematics / II B.Sc., Chemistry

<b>Course Code : 21UPHA11</b>	<b>Hrs/Week: 4</b>	<b>Hrs/ Semester: 60</b>	<b>Credits : 4</b>
-------------------------------	--------------------	--------------------------	--------------------

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the fundamentals of elasticity, stress and (K1)	1	Re
CO-2	solve problems related to uniform and non-uniform bending of beams (K3)	1	Ap
CO-3	estimate the thermal conductivity of a bad conductor (K2)	1,6	Un
CO-4	calculate the specific heat capacity of a liquid (K3)	1,6	Ap
CO-5	evaluate the thickness of a thin wire by forming interference fringes (K5)	1,6	Ev
CO-6	outline dispersive power and resolving power of a grating (K4)	1,6	An



**SEMESTER-I****Skill Enhancement Course - I Professional English for Mathematics - I****Course Code:21UMAPE1****Hrs/Week: 2****Hrs/Sem: 30****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recognise their own ability to improve their own competence in using the language	3	Un
CO-2	use language for speaking with confidence in an intelligible and acceptable manner	3	An
CO-3	read independently any unfamiliar texts with comprehension	3	Un
CO-4	understand the importance of writing in academic life	3	An
CO-5	write simple sentences without committing error of spelling or grammar.	4	Un
CO-6	develop critical thinking skills and get culturally aware of the targetsituation	3	Cr

## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

**SEMESTER – II****Core III Analytical Geometry of Three Dimensions****Course Code :21UMAC21****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamental aspects of three-dimensional geometry.	1	Un
CO-2	represent simple three-dimensional figures using two-dimensional drawings.	3	Un
CO-3	demonstrate basic mathematical understanding and computational skills in three dimensions.	8	Un
CO-4	apply algebraic methods to the study of curves and surfaces that lie in three dimensions.	4	Un
CO-5	apply geometric properties and relationships to solve problems in three dimensions.	4	Un
CO-6	develop logical thinking, geometric thinking and three-dimensional spatial ability.	6	An



SEMESTER – II			
Part III	Core IV	Differential Equations	
Course Code :21UMAC22	Hrs / Week: 4	Hrs / Semester: 60	Credits: 3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	verify whether a given function is a solution of a given ordinary differentialequation (as well as verifying initial conditions when applicable).	8	An
CO-2	classify ordinary differential equations into linear and nonlinear equations.	4	Un
CO-3	solve first order linear differential equations.	3	An
CO-4	find the general solution of second order linear homogeneous equations withconstant coefficients.	3	Cr
CO-5	use the laplace transform to compute solutions of second order, linearequations with constant coefficients	3	An
CO-6	identify essential characteristics of ordinary and partial differential equations.	3	Un

**SEMESTER II / IV****Allied Physics – Paper II - I B.Sc., Mathematics/ II B.Sc., Chemistry****Course Code : 21UPHA21****Hrs/Week: 4****Hrs/ Semester: 60****Credits : 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall coulomb's law and the gauss law (K1)	1	Re
CO-2	discuss Lenz's law (K2)	1	Un
CO-3	distinguish self inductance from mutual inductance (K4)	1	An
CO-4	apply knowledge of electricity and magnetism to the nature of physical process and related technological advancements (K3)	1	Ap
CO-5	prove De Morgan's laws (K5)	1,6	Ev
CO-6	discuss the postulates of special theory of relativity (K2)	1	Un



**SEMESTER-II****Skill Enhancement Course - II Professional English for Mathematics - II****Course Code :21UMAPE2****Hrs/Week: 2****Hrs/Sem: 30****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the knowledge for writing purposes such as Presentation, drafting and project report etc.	4	Ap
CO-2	evaluate the correct and error-free writing by being well-versed in rules of English grammar and cultivate relevant technical style of communication and presentation.	6	Ev
CO-3	apply techniques for developing inter-personal communication and to respond questions at a formal interview	3	Ap
CO-4	use critical thinking skills to face everyday life situations.	7	Cr
CO-5	develop strategic competence that will help in efficient communication	6	Ap
CO-6	apply the acquired knowledge and ideas in giving opinions during the meeting and making concluding remarks.	8	An

Semester – III			
Part III Core V		Sequences and Series, Trigonometry	
Course Code :21UMAC31	Hrs/week : 6	Hrs/Semester : 90	Credits : 5

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the important inequalities necessary to compare the real numbers.	3	Ev
CO-2	explain the difference between a sequence and a series in the mathematical context.	2	Un
CO-3	Identify boundedness, monotonic, limit points etc. of a sequence.	8	Un
CO-4	apply various tests to verify the convergence or divergence of a given sequence and also the series.	4	Ap
CO-5	gain a basic knowledge about analysis which helps them in higher studies.	3	Re
CO-6	reconstruct the formulae which are accustomed in elementary levels	4	Ev



Semester - III			
Part III Allied		Statistics I	
Course Code :21UMMA31	Hrs/week : 6	Hrs/Sem : 90	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the difference between the central moments and general moments	1	Un
CO-2	apply concepts and theorems in solving problems	4	Ap
CO-3	find correlation between two variables	3	Ap
CO-4	evaluate particular regression lines	3 and 7	Ap
CO-5	fit Binomial, Poisson and Normal distribution.	4	Ap
CO-6	compare moment generating function and cumulant generating function	2 and 7	Ev

### Semester - III

#### Part III Skill Based Elective Introduction to Python Programming

Course Code :21UMAS31	Hrs/week :2	Hrs/Sem :30	Credits : 2
-----------------------	-------------	-------------	-------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamental concepts to write a Python Program	1	Un
CO-2	apply decision and repetitive structures in programme design and demonstrate the use of Python	5	Ap
CO-3	use string function in Python	7	Ev
CO-4	distinguish various Python Objects	4	An
CO-5	write python programs to solve problems	4	Cr
CO-6	use compound data using Python lists and tuples	5	Ev



**Semester – III****Part III Skill Based Elective Quantitative Aptitude I****Course Code : 21UMAS32****Hrs/week : 2****Hrs/ Semester : 30****Credits : 2****Course outcome:**

<b>CO No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
<b>CO-1</b>	solve the problems easily by using short-cut method with time management to face the competitive examinations	4	Ap
<b>CO-2</b>	develop their calculating and computing skills.	5	Ap
<b>CO-3</b>	acquires the ability to understand and analyze the problem	2	Un
<b>CO-4</b>	apply quantitative methods to solve a variety of business problems	5	Ap
<b>CO-5</b>	solve the questions with accuracy and approach the problems in different manner	3	Cr
<b>CO-6</b>	enhances logical skills, arithmetic skills and aptitude skills.	5	Ap

### Semester – III

#### Part III NME I Mathematics for Competitive Examinations I

Course Code : 21UMAN31

Hrs/week : 2

Hrs/Semester : 30

Credits : 2

#### Course Outcomes

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	solve mathematical problems using shortcut methods.	3	Cr
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve the questions with accuracy and within the given time limit.	3	Cr
CO-4	build confidence to face the competitive examinations.	3	Cr
CO-5	enhances logical reasoning skills, arithmetic skills, aptitude skills.	6	Ap
CO-6	simplify and evaluate algebraic expressions.	3	Ev





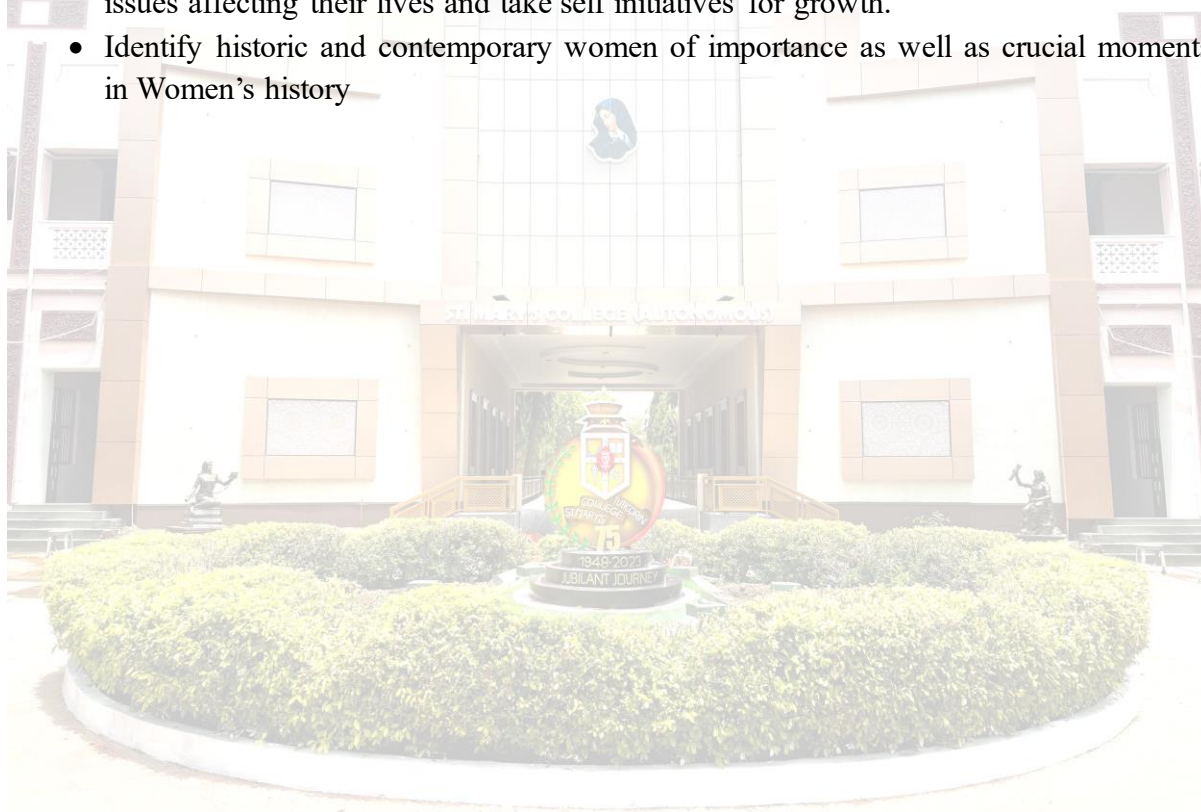
### Semester – III

#### Women's Synergy

<b>Code : 18UAWS31</b>	<b>Hrs/ Week : 2</b>	<b>Hrs/Sem:30</b>	<b>Credits : 2</b>
------------------------	----------------------	-------------------	--------------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



Semester – IV			
Part III Core VI		Modern Algebra	
Course Code: 21UMAC41	Hrs/week : 6	Hrs/Semester: 90	Credits : 5

**Course Outcome:**

Co. No	Upon completion of this course, students will	PSO addressed	CL
CO -1	describe and generate the basic algebraic structures such as Groups, Rings, Fields, Integral Domain, Euclidean Domain, etc., and will identify examples of these specific constructs.	1	Ev
CO -2	have a working knowledge of important mathematical concepts such as order of Group, order of an element, generator of a cyclic group, index of a subgroup, characteristic of a Ring, Maximal and Prime Ideals etc.,	2	Un
CO -3	analyze relationship between abstract algebraic structures with familiar number system such as integers, complex and real numbers	2	An
CO -4	critically analyze and construct mathematical arguments that relate to the study of introductory linear algebra. (Proof and Reasoning).	4	An
CO -5	produce the group concepts in other science disciplinary	3	Ap
CO -6	illustrate the isomorphic structures	4	An

## Semester – IV

### Part III Allied

### Statistics II

**Course Code : 21UMMA41**

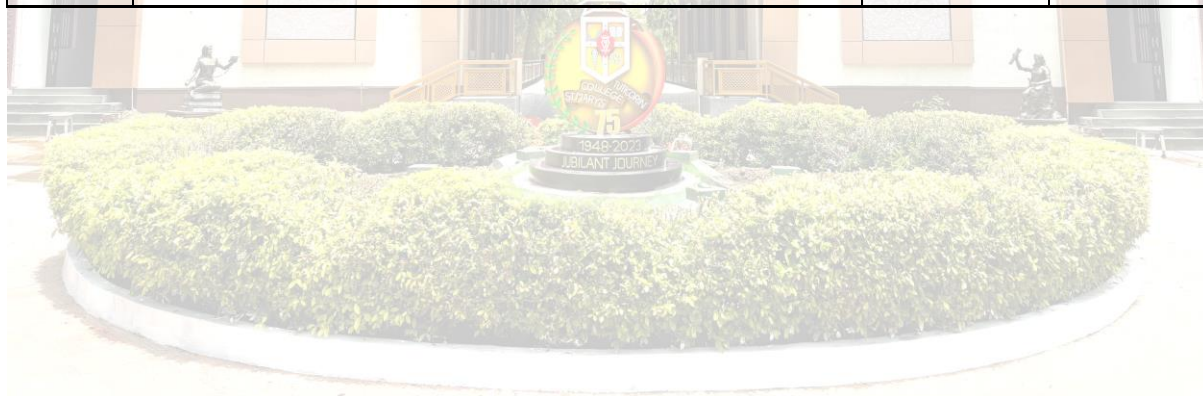
**Hrs/week : 6**

**Hrs/Sem : 90**

**Credits : 4**

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the difference between the weighted index numbers and unweighted	1 and 2	Un
CO-2	compute the upper and lower control limits for different chart	3	Ev
CO-3	apply concepts and theorems in solving problems.	4	Ap
CO-4	demonstrate problem solving skills	3	An
CO-5	know type I and type II error	1	Cr
CO-6	classify the different test static and apply the correct test static	4 and 5	Un &Ap



### Semester - IV

#### Part III Skill Based Elective Documentation using LaTeX

Course Code :21UMAS41	Hrs/week :2	Hrs/ Semester:30	Credits :2
-----------------------	-------------	------------------	------------

#### Course Outcome:

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	know the difference between MS Word and LaTeX	3	Un
CO -2	understand the uses of LaTeX	2	Un
CO -3	apply LaTeX in their typing work	1	Un
CO-4	handle math symbols and tables	3	An
CO-5	become proficient in the use of software applications as used in an office environment.	3 and 8	Ap
CO -6	manipulate with the real life needs in preparing documents	3	Ap



### Semester – IV

#### Part III Skill Based Elective

#### Quantitative Aptitude II

Course Code : 21UMAS42

Hrs/week : 2

Hrs/ Semester : 30

Credits : 2

#### Course outcome:

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquires the ability to understand and analyze the problem	2	Un
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve mathematical problems using shortcut methods.	4	Cr
CO-4	build confidence to face the competitive examinations.	5	Cr
CO-5	solve the questions with accuracy and within the given time limit.	3	Cr
CO--6	enhances logical skills, arithmetic skills and aptitude skills.	5	Ap

**Semester – IV****Part III NME II Mathematics for Competitive Examinations II****Course Code : 21UMAN41****Hrs/week : 2****Hrs/Semester : 30****Credits : 2****Course Outcomes**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	solve mathematical problems using shortcut methods.	3	Cr
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve the questions with accuracy and within the given time limit.	3	Cr
CO-4	build confidence to face the competitive examinations.	3	Cr
CO-5	enhances logical reasoning skills, arithmetic skills, aptitude skills.	6	Ap
CO-6	use mathematical concepts in real world situations.	4	Ap



Semester - V			
Part III Core VII (Common Core) Computer Oriented Numerical Methods			
Course Code: 21UCMC51	Hrs/Week: 6	Hrs/ Semester : 90	Credits : 5

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	find numerical solution of a problem in all aspects and apply these methods to practical implementation as reliable and efficient.	3	Re
CO-2	recognize and apply appropriate principles and concept relevant to numerical analysis.	5	Ap
CO-3	discover the most appropriate estimate for the missing data.	1	Cr
CO-4	analyze the errors obtained in the numerical solutions of problems.	6	An
CO-5	use appropriate numerical methods, determine the solutions to given problems.	3	Ap
CO-6	demonstrate the use of the interpolation method to find the solution for the data.	4	Un

Semester - V			
<b>Part III</b>	<b>Core VIII</b>	<b>Linear Algebra</b>	
<b>Course Code: 21UMAC51</b>	<b>Hrs/week : 5</b>	<b>Hrs/Semester : 75</b>	<b>Credits : 4</b>

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze and construct mathematical arguments that relate to the study of linear algebra. (proof and reasoning).	3	An
CO-2	work within vector spaces and to distill vector space properties	3	An
CO-3	solve systems of linear equations and determine whether a system of equations is consistent or not and find its general solution.	6	An
CO-4	compute eigenvalues and eigenvectors of a matrix.	4	Ap
CO-5	develop analytical thinking in R-Programming	5	An
CO-6	understand the concept of Inner Product Spaces	1	Un



Semester V			
Part III Core IX		Graph Theory	
Course Code : 21UMAC52	Hrs / Week : 5	Hrs / Semester: 75	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify induced subgraphs, paths, cycles, independent sets and coverings in graphs	1	Re
CO-2	determine whether graphs are Hamiltonian and/or Eulerian and to solve problems involving vertex and edge connectivity, planarity and crossing numbers	5	An
CO-3	combine theoretical knowledge and independent mathematical thinking in creative investigation of questions in graph theory.	8	Un
CO-4	inspect the applications of graph theory	7	An
CO-5	model and solve real-world problems using graphs both quantitatively and qualitatively.	4	Ap
CO-6	develop an appropriate level of mathematical literacy and competency and formulate problems in terms of graphs, solve graph theoretic problems and apply algorithms.	6	Cr

**SEMESTER – V****Part III Core X****Real Analysis****Course Code :21UMAC53****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcomes**

<b>Co No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	interpret real number system, define and recognize the continuity of real functions	1	Re
CO -2	define and recognize the real functions and its limits	1	Re
CO -3	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	An
CO -4	determine the continuity, differentiability of functions defined on subsets of the real line	3	Ev
CO -5	apply the Mean Value Theorem and the intermediate value property to problems in the context of real analysis	5	Ap
CO -6	describe fundamental properties of the real numbers that lead to the formal development of real analysis.	3	An

**Semester –V****Part III Core XI- Vector Calculus and Fourier Series****Course Code :21UMAC54****Hrs/week :4****Hrs/Semester :60****Credits :4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate and integrate vector-valued functions and apply calculus to motion problems in two and three dimensional space	2	An
CO-2	compute gradient, curl and divergence of vector fields.	1 and 3	Cr
CO-3	use the gradient to find directional derivatives.	3	Ap
CO-4	solve problems in multiple integration using rectangular, cylindrical, and spherical coordinate systems	8	Ap
CO-5	select and apply appropriate models and techniques to define and evaluate integrals	3	Ev
CO-6	know that any periodic function can be expressed as a fourier series.	6	Cr

Semester –V			
Part III Core Elective Discrete Mathematics			
Course Code : 21UMAE51	Hrs/week : 4	Hrs/ Semester: 60	Credits : 4

### Course Outcomes

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand logic and mathematical reasoning to count or enumerate objects in a systematic way.	1	Un
CO -2	use truth tables for expressions involving the logical connectives .	8	Ap
CO -3	apply standard rules of inference and grasp the notions of lattices.	3	Ap
CO -4	understand Boolean algebra and truth tables.	1	Un
CO -5	evaluate and simplify expressions using the properties of Boolean Algebra.	5	Ev
CO -6	apply logical reasoning to solve a variety of problems.	4	Ap



Semester V			
Part III Core Elective		Transforms	
Course Code: 21UMAE52	Hrs/Week: 4	Hrs/Sem: 60	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the relation between Fourier and Laplace transforms.	4	Ap
CO-2	evaluate complex integrals by various methods.	1	An
CO-3	understand Z - Transforms	1	Un
CO-4	solve ordinary differential equations using Laplace transform.	1,4	An
CO-5	understand the applications of Laplace transform and Fourier Transform	1,5	Un
CO-6	apply the Transforms to various differential equations.	2	Ap



### Semester - V

#### Common Skill Based Core      Computer for Digital Era and Soft Skills

**Code : 21UCSB51**

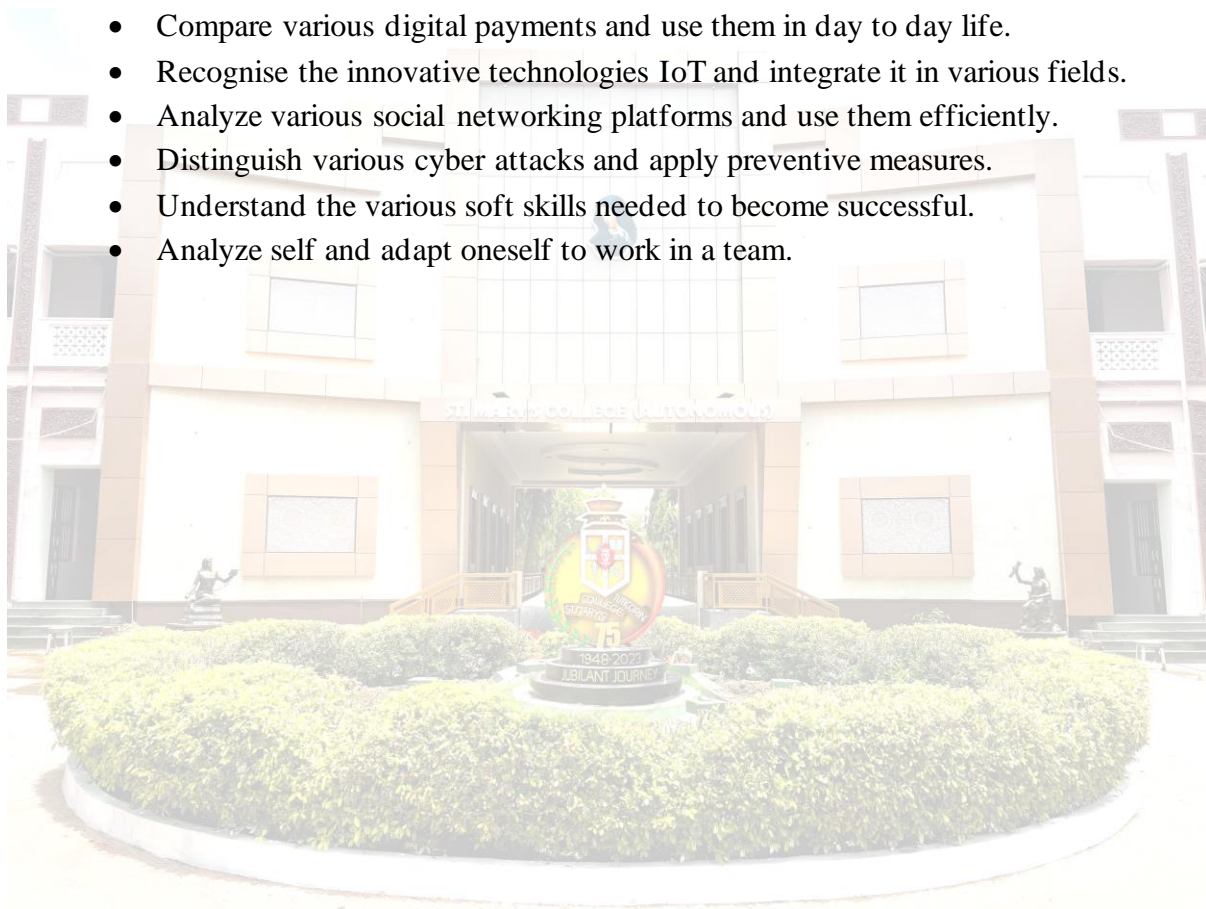
**Hrs / Week : 2**

**Hrs / Sem : 30**

**Credits : 2**

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



Semester –VI			
Part III Core XII		Complex Analysis	
Course Code : 21UMAC61	Hrs/week :6	Hrs/Semester :90	Credits :5

**Course Outcome:**

CO No	Upon successful completion of this course students will be able to:	PSO addressed	CL
CO-1	compute sums, products, quotients, conjugate, modulus, and argument of complex numbers.	1	An
CO-2	understand the significance of differentiability for complex functions and be familiar with the Cauchy-Riemann equations.	2	Un
CO-3	evaluate integrals along a path in the complex plane and understand the statement of Cauchy's Theorem.	6	Ev
CO-4	know the condition(s) for a complex variable function to be analytic and/or harmonic.	3	Un
CO-5	compute the Taylor and Laurent expansions of simple functions, determining the nature of the singularities and calculating residues.	2	An
CO-6	demonstrate curve properties for image processing with transformation	6	Ap

## Semester VI

### Semester – VI

**Part III Core XIII**

**Modern Analysis**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	gain knowledge of concepts of modern analysis, such as open sets ,closed sets, completeness, connectedness and compactness in metric spaces	1	Un
CO -2	write simple proofs on their own and study rigorous proofs	5	Ap
CO -3	develop a higher level of mathematical maturity combined with the ability to think analytically	2	Un
CO -4	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	Ap
CO -5	explain the basic theory of metric spaces and its application to function spaces.	3	Ev
CO -6	apply the theory to solve mathematical problems including the construction of simple proofs.	2	An
<b>Course Code : 21UMAC62</b>		<b>Hrs / Week: 6</b>	<b>Hrs / Semester: 90</b>
		<b>Credits: 5</b>	

**Course Outcome:**



**Part III Core XIV****Mechanics**

<b>Course Code :21UMAC63</b>	<b>Hrs/week :6</b>	<b>Hrs/Semester :90</b>	<b>Credits :5</b>
------------------------------	--------------------	-------------------------	-------------------

**Course Outcomes**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the equilibrium of forces	1	Un
CO-2	distinguish between parallel and non-parallel forces	4	Cr &Ap
CO-3	know the types of friction laws	1	Cr
CO-4	apply friction laws in problems	5	Un &Ap
CO-5	understand the two types of impact and simple harmonic motion	1	Ap
CO-6	determine the simple harmonic motion	4	Ap



Semester –VI			
Part III Core XV		Operations Research	
Course Code :21UMAC64	Hrs/week : 6	Hrs/Semester :90	Credits : 5

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop a fundamental understanding of linear programming models	1,3	Un
CO-2	solve dual linear programming problem and two-dimensional linear programming problem.	8	Ap
CO-3	apply the simplex method for solving linear programming problem	5	Ap
CO-4	interpret the mathematical tools that are needed to solve optimization problems and comprehend the concept of a Transportation Model and develop the initial solution for the same	4	Un
CO-5	apply the Hungarian method for solving assignment problems	5	Ap
CO-6	examine the significant impact of job sequencing system on total elapsed time management	8	An

**Programme: B. Sc. Mathematics – Batch II**

<b>SEMESTER – I</b>			
<b>Core I</b>		<b>Classical Algebra</b>	
<b>Code :18UMAC11</b>	<b>Hrs / Week: 5</b>	<b>Hrs / Semester: 75</b>	<b>Credits: 4</b>

**Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	solve polynomial equations and simultaneous linear equations.	4	An
CO-2	solve the equations using the relation between the roots and coefficients.	4	An
CO-3	form the equations from the given roots and identify and solve the reciprocal equations	5 , 9	Cr, Un
CO-4	transform the equations by increasing, decreasing and multiplying the roots of the equations	4	Un
CO-5	solve the equations by removing the terms of the equations.	4	Ap
CO-6	locate real and imaginary roots of the equations	5 , 9	Un
CO-7	find the approximate values of the irrational roots of the equations.	4	Cr
CO-8	<u>d</u> etermine the roots of the equations by using various methods like Cardon's method, Ferrari's method.	4	Cr

**SEMESTER – I****Core II****Calculus****Code :18UMAC12****Hrs / Week: 5****Hrs / Semester: 75****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	state the concept of curvature of a plane curve.	5	Re
CO-2	calculate the curvature of various curves in plane and space	5 , 9	Ev
CO-3	apply the fundamental concepts of Calculus to variety of real world problems.	4	Ap
CO-4	find surface area using a double integral.	3 ,8	Un
CO-5	evaluate triple integrals and use them to find volumes in rectangular, cylindrical and spherical coordinates.	4 ,10	Ev
CO-6	compute definite and indefinite integrals of algebraic and trigonometric functions using formulae and substitution	10	Cr
CO-7	know the relationship between the Gamma and Beta functions	6 , 7	An
CO-8	use Beta and Gamma function to solve different type of integrals and to understand Gamma function as a generalization of factorial function.	7	Un, Ev



**SEMESTER - I****Allied Physics – Paper I****18UPHA11****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define fundamentals of elasticity and discuss concepts of stress and strain and the relationship between both, use the stress-strain equations to solve the problems of elastic modes	1	Re, Un
CO-2	solve problems related to uniform and non-uniform bending of beams	1	An
CO-3	define the terms viscosity and surface tension	1	Re
CO-4	describe the properties of fluids such as viscosity, surface tension and capillary rise and evaluate the value of coefficient of viscosity	1,2,6	Un,Ev
CO-5	estimate the thermal conductivity of a bad conductor	1	Ev
CO-6	calculate the specific heat capacity of a liquid	1, 6	An
CO-7	calculate the thickness of a thin wire by forming interference fringes	1, 2, 6	An
CO-8	assess the dispersive power and resolving power of a grating	1, 2, 6	Ev

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER – II****Core III Analytical Geometry of Three Dimensions****Code:18UMAC21****Hrs / Week: 5****Hrs / Semester: 75****Credits: 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamental aspects of three-dimensional geometry.	1,2 , 3	Un
CO-2	represent simple three-dimensional figures using two-dimensional drawings.	4	Un
CO-3	demonstrate basic mathematical understanding and computational skills in three dimensions.	5 , 9	Un
CO-4	apply algebraic methods to the study of curves and surfaces that lie in three dimensions.	5	Ap
CO-5	apply geometric properties and relationships to solve problems in three dimensions.	5	Un
CO-6	develop logical thinking, geometric thinking and three-dimensional spatial ability.	6 , 7	An
CO-7	solve many difficult problems with simple solutions.	6, 10	Cr
CO-8	create opportunities to use spatial skills in problem-solving tasks.	5, 9	Cr

**SEMESTER – II****Core IV****Differential Equations****Code:18UMAC22****Hrs / Week: 5****Hrs / Semester: 75****Credits: 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify an ordinary differential equation and its order.	4	Un
CO-2	verify whether a given function is a solution of a given ordinary differential equation (as well as verifying initial conditions when applicable).	5, 9	An
CO-3	classify ordinary differential equations into linear and nonlinear equations.	5, 9	Un
CO-4	solve first order linear differential equations.	4	An
CO-5	find the general solution of second order linear homogeneous equations with constant coefficients.	4	Cr
CO-6	compute the Laplace transform and inverse Laplace transform	4	Ap
CO-7	use the Laplace transform to compute solutions of second order, linear equations with constant coefficients	4	Ap
CO-8	identify essential characteristics of ordinary and partial differential equations.	4	Un



**SEMESTER – II****Allied Physics – Paper II****18UPHA21****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	apply the Gauss law in the calculation of electric fields due to various charge distributions and Understand coulomb's law which gives an idea about the electrostatic force between point charges.	1	Ap, Un
CO-2	define and explain self and mutual inductance	1	Re, Un
CO-3	employ Lenz law and Faraday's law for magnetically coupled circuits	1	An
CO-4	apply knowledge of electricity and magnetism to explain the nature of physical process and related technological advances	1	Ap
CO-5	understand the principle of energy release in nuclear reactions and identify the present energy scenario and the need for energy conservation	8	Un
CO-6	examine the structure of various number system and its application in digital design	6, 8	Un, An
CO-7	analyse the environmental aspects of renewable energy sources	5	An
CO-8	acquire the knowledge of solar cells, photovoltaic cells, wind energy and solar energy principles and applications	5	Un

**Semester – III**

**Part III      Core V      Sequences and Series, Trigonometry**

**Code :18UMAC31**

**Hrs/week :6**

**Hrs/Semester :90**

**Credits :4**

**Course Outcome**

Co No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop the analytical thinking to generalize the known concepts.	3	Cr
CO-2	know the important inequalities necessary to compare the real numbers.	3	Ev
CO-3	explain the difference between a sequence and a series in the mathematical context.	2	Un
CO-4	able to identify boundedness, monotonic, limit points etc. of a sequence.	8	Un
CO-5	able to apply various tests to verify the convergence or divergence of a given sequence and also the series.	4	Ap
CO-6	gain a basic knowledge about analysis which helps them in higher studies.	3	Re
CO-7	apply the real situation wherever usage of trigonometrical equations	4	Ap
CO-8	reconstruct the formulae which are accustomed in elementary levels	8	Ev

### Semester – III

**Part III Allied III**

**Statistics I**

**Code :18UMMA31**

**Hrs/week :3**

**Hrs/ Semester:45**

**Credits : 3**

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the difference between the central moments and general moments	1	Un
CO-2	compute the central moments and general moments	3	Ev
CO-3	analyse the time reversal test	8	Cr, Ap
CO-4	convert fixed base index to chain base index	3	Ap
CO-5	classify the different index numbers	8	Un, Ap
CO-6	find correlation between two variables	3	Ap
CO-7	evaluate particular regression lines	3, 7	Ap
CO-8	know the uses of index numbers	4	Cr

**Semester –III****Part III Allied IV****Linear Programming****Code : 18UMMA32****Hrs/week : 3****Hrs/ Semester:45****Credits : 3****Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	develop a fundamental understanding of linear programming models	1, 3	Un
CO-2	develop a linear programming model from problem description	5	An
CO-3	formulate a simplified description of a suitable real-world problem as a linear programming model in general, standard and canonical forms	8	Cr
CO-4	solve a two-dimensional linear programming problem graphically.	8	Ap
CO-5	convert a linear programming problem into standard form.	8	Un
CO-6	apply the simplex method for solving linear programming problem.	5	Ap
CO-7	express the dual of a linear programming problem and solve the resulting dual problem using the dual simplex method	8	Cr,Ap
CO-8	model , analyze or solve a practical real-world problem using the theory and methods learned in this course	4, 5	Ap,An



**Semester – III****Part III Core Skill Based Numerical Aptitude and Arithmetic Ability****Code :18UMAS31****Hrs/week : 4****Hrs/ Semester : 60****Credits :4****Course outcome**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquire the ability to understand and analyze the problem	2	Un
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve mathematical problems using shortcut methods.	4	Cr
CO-4	build confidence to face the competitive examinations.	5	Cr
CO-5	solve the questions with accuracy and within the given time limit.	3	Cr
CO-6	enhance logical skills, arithmetic skills and aptitude skills.	5	Ap
CO-7	simplify and evaluate algebraic expressions.	3	Ev
CO-8	use mathematical concepts in real world situations.	4, 8	Ap

**SEMESTER – IV****Part III      Core VI      Real Analysis****Code :18UMAC41****Hrs / Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	interpret real number system and its properties.	1	Un
CO-2	define and recognize the continuity of real functions	1	Re
CO-3	define and recognize the real functions and its limits	1	Re
CO-4	interpret mathematical ideas via extended written presentation.	2	Un
CO-5	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	An
CO-6	formulate proofs and structure mathematical arguments.	6	An
CO-5	determine the continuity, differentiability and integrability of functions defined on subsets of the real line	3	Ev
CO-7	apply the Mean Value Theorem and the Fundamental theorem of Calculus to problems in the context of real analysis	5	Ap
CO-8	describe fundamental properties of the real numbers that lead to the formal development of real analysis.	3	An

Semester - IV			
Part III	Allied V	Statistics II	
Code : 18UMMA41	Hrs/week :3	Hrs/ Semester :45	Credits : 3

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the difference between the discrete distribution and continuous distribution.	1, 2	Un
CO-2	calculate the mean, mode and median for different distributions.	7	Ap
CO-3	find approximate solutions to problems	4, 8	Cr, Un
CO-4	apply concepts and theorems in solving problems.	4	Ap
CO-5	demonstrate problem solving skills	3	An
CO-6	evaluate recurrence relation of p.d.f for various distribution.	3	An
CO-7	fit binomial, poisson and normal distribution.	8	Ap
CO-8	compare moment generating function and cumulant generating function	2, 7	Ev

**Semester –IV**

**Part III          Allied VI          Discrete Mathematics**

**Code :18UMMA42**

**Hrs/week :3**

**Hrs/ Semester:45**

**Credits :3**

**Course Outcome**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand logic and mathematical reasoning to count or enumerate objects in a systematic way.	1	Un
CO-2	use truth tables for expressions involving the logical connectives .	8	Ap
CO-3	develop capacity in knowing what constitutes a valid argument, and in constructing valid arguments or proofs.	3	An
CO-4	apply standard rules of inference.	3	Ap
CO-5	grasp the notions of lattices.	1	Un
CO-6	understand Boolean algebra and truth tables.	1	Un
CO-7	evaluate Boolean functions and simplify expressions using the properties of Boolean Algebra.	5	Ev
CO-8	apply logical reasoning to solve a variety of problems.	4	Ap



### Semester – IV

#### Part III Core Skill Based Math Type using LaTeX

Code :18UMAS41	Hrs/week :4	Hrs/ Semester:60	Credits :4
----------------	-------------	------------------	------------

#### Course Outcome

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the difference between MS Word and LaTeX	3	Un
CO-2	understand the uses of LaTeX	2	Un
CO-3	apply LaTeX in their typing work	1	Un
CO-4	handle math symbols and tables	3	An
CO-5	create documents and make small presentations.	3	Ap
CO-6	become proficient in the use of software applications as used in an office environment.	3, 8	Ap
CO-7	manipulate with the real life needs in preparing documents	3	Ap
CO-8	prepare projects in updating with the new updates and versions	8	Cr

**Semester –V****Part III Core VII (Common Core) Computer Oriented Numerical Methods****Code: 18UCCC51****Hrs/Week: 6****Hrs/ Semester : 90****Credits : 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	find numerical solution of a problem in all aspects and apply these methods to practical implementation as reliable and efficient.	3	Re
CO-2	recognize and apply appropriate principles and concept relevant to numerical analysis.	5	Ap
CO-3	discover the most appropriate estimate for the missing data.	1	Cr
CO-4	analyze the errors obtained in the numerical solutions of problems.	6	An
CO-5	use appropriate numerical methods, determine the solutions to given problems.	3	Ap
CO-6	demonstrate the use of the interpolation method to find the solution for the data.	8	Un
CO-7	develop their calculation skills.	1	Cr
CO-8	differentiate gauss jacobi iteration and gauss seidal iteration method.	3	

Semester – V			
Part III	Core VIII	Modern Algebra	
Code :18UMAC52	Hrs/week :5	Hrs/Semester :75	Credits :4

### Course Outcome

CO No	Upon completion of this course, students will	PSO addressed	CL
CO-1	explain the theory behind relations and functions and how functions may relate dissimilar structures to each other.	3	Cr
CO-2	describe and generate the basic algebraic structures such as Groups, Rings, Fields, Integral Domain, Euclidean Domain, etc., and will identify examples of these specific constructs.	1	Ev
CO-3	have a working knowledge of important mathematical concepts such as order of Group, order of an element, generator of a cyclic group, index of a subgroup, characteristic of a Ring, Maximal and Prime Ideals etc.,	2	Un
CO-4	analyze relationship between abstract algebraic structures with familiar number system such as integers, complex and real numbers	2	An
CO-5	critically analyze and construct mathematical arguments that relate to the study of introductory linear algebra. (Proof and Reasoning).	8	An
CO-6	develop ability to form and evaluate conjectures.	1, 5	Ap
CO-7	produce the group concepts in other science disciplinary	3	Ap
CO-8	illustrate the isomorphic structures	8	An

Semester – V			
Part III	Core IX	Modern Analysis	
Code :18UMAC53	Hrs / Week: 5	Hrs / Semester: 75	Credits: 4

### Course Outcome

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	gain knowledge of concepts of modern analysis, such as open sets ,closed sets, completeness, connectedness and compactness in metric spaces	1	Un
CO-2	be able to write simple proofs on their own and study rigorous proofs	5	Ap
CO-3	develop a higher level of mathematical maturity combined with the ability to think analytically	2	Un
CO-4	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	Ap
CO-5	formulate proofs and structure mathematical arguments.	6	Ap
CO-6	explain the basic theory of metric spaces and its application to function spaces.	3	Ev
CO-7	follow more advanced treatments of real analysis and study its applications	3	Ap
CO-8	apply the theory to solve mathematical problems including the construction of simple proofs.	2	An



Semester –V			
Part III	Core X	Operations Research	
Code :18UMAC54	Hrs/week : 4	Hrs/Semester :60	Credits : 4

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify optimum solution.	1	Un
CO-2	interpret the mathematical tools that are needed to solve optimization problems.	2	Ap
CO-3	make decision and improve its quality.	3	Ev
CO-4	comprehend the concept of a Transportation Model and develop the initial solution for the same	4	Un
CO-5	apply the Hungarian method for solving assignment problems	5	Ap
CO-6	examine the significant impact of job sequencing system on total elapsed time management	8	An
CO-7	use CPM and PERT techniques, to plan, schedule, and control project activities.	4	Ap
CO-8	apply Mathematical theories to Commerce and Business and Management	3	Ap

**Semester –V**

**Part III      Core Integral I      Vector Calculus and Fourier Series**

**Code :18UMAI51**

**Hrs/week :4**

**Hrs/Semester :60**

**Credits :4**

**Course Outcome**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate and integrate vector-valued functions and apply calculus to motion problems in two and three dimensional space	2	An
CO-2	compute gradient, curl and divergence of vector fields.	1, 3	C
CO-3	use the gradient to find directional derivatives.	3	Ap
CO-4	solve problems in multiple integration using rectangular, cylindrical, and spherical coordinate systems	8	A
CO-5	select and apply appropriate models and techniques to define and evaluate integrals	3	E
CO-6	apply greens theorem, stokes theorem and gauss divergence theorem to evaluate integrals.	3	A
CO-7	know that any periodic function can be expressed as a fourier series.	6	Cr
CO-8	expand an odd or even function as a half-range cosine or sine fourier series.	1	Un, An

**Semester – V**

**Part III      Core Integral II      Statistical Inference**

**Code :18UMAI52      Hrs/week :4      Hrs/Semester :60      Credits :4**

**Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the uses of statistical quality control.	1	Un
CO-2	compute the upper and lower control limits for different chart	3	Ev
CO-3	analyse the usage of different charts.	8	Cr, Ap
CO-4	know type I and type II error	1	Cr
CO-5	classify the different test static	5	Un, Ap
CO-6	check the difference between small and large samples.	1	Ap
CO-7	evaluate t-test, F-test etc	3, 7	Ap
CO-8	apply the correct test static	4	Ap

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

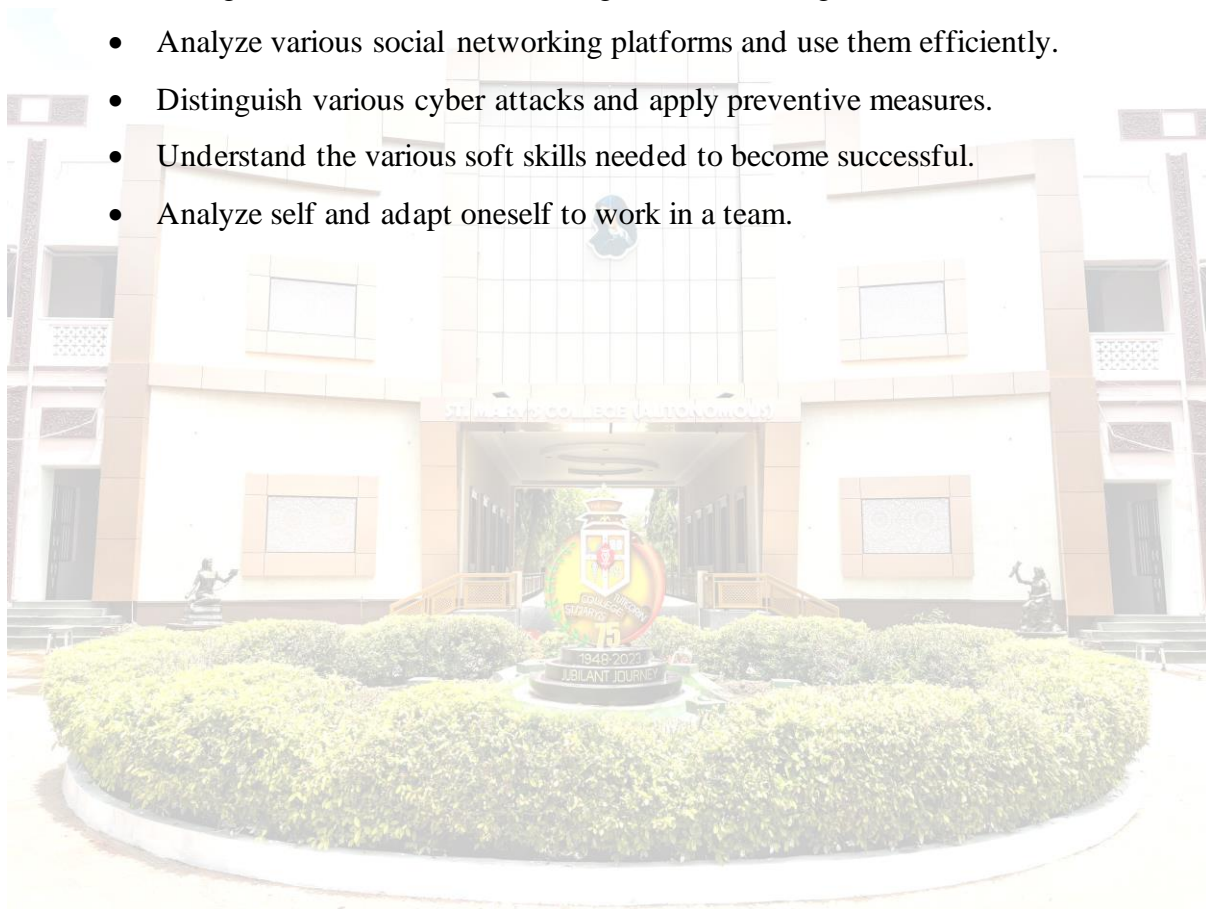
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.





Semester –VI			
Part III	Core XI	Complex Analysis	
Code :18UMAC61	Hrs/week :6	Hrs/Semester :90	Credits :4

### Course Outcome

CO. No	Upon successful completion of this course students will be able to	PSO addressed	CL
CO-1	compute sums, products, quotients, conjugate, modulus, and argument of complex numbers.	1	An
CO-2	understand the significance of differentiability for complex functions and be familiar with the Cauchy-Riemann equations.	2	Un
CO-3	evaluate integrals along a path in the complex plane and understand the statement of Cauchy's Theorem.	6	Ev
CO-4	know the condition(s) for a complex variable function to be analytic and/or harmonic.	3	Un
CO-5	compute the Taylor and Laurent expansions of simple functions, determining the nature of the singularities and calculating residues.	2	An
CO-6	use the Cauchy Residue theorem to evaluate integrals and sum series.	6	Ap
CO-7	demonstrate curve properties for image processing with transformation	6	Ap
CO-8	outline complex number system with intense perception	6	An

Semester –VI			
Part III	Core XII	Linear Algebra	
Code : 18UMAC62	Hrs/week : 6	Hrs/Semester : 90	Credits : 4

**Course Outcome :**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know all the definitions in Linear Algebra	1	U
CO-2	analyze and construct mathematical arguments that relate to the study of linear algebra. (proof and reasoning).	2, 3	An
CO-3	solve systems of linear equations.	3	A
CO-4	work within vector spaces and to distill vector space properties	3	An
CO-5	determine whether a system of equations is consistent or not and find its general solution.	6	An
CO-6	compute eigenvalues and eigenvectors of a matrix.	4	A
CO-7	develop analytical thinking	5	An
CO-8	understand the concept of Inner Product Spaces	1	U

Semester VI			
Part III	Core XIII	Mechanics	
Code :18UMAC63	Hrs/week :6	Hrs/Semester :90	Credits :4

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the equilibrium of forces	1	Un
CO-2	know the conditions for equilibrium	3	Ev
CO-3	distinguish between parallel and non parallel forces	8	Cr, Ap
CO-4	know the types of friction laws	1	Cr
CO-5	apply friction laws in problems	5	Un, Ap
CO-6	understand the two types of impact	1	Ap
CO-7	understand the simple harmonic motion	3, 7	Ap
CO-8	determine the simple harmonic motion	4	Ap



Semester VI			
Part III	Core Integral III	Graph Theory	
Code :18UMAI61	Hrs / Week: 5	Hrs / Semester: 75	Credits: 4

### Course Outcome

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	interpret the basics of graphs.	1	Un
CO-2	identify induced subgraphs, paths,cycles ,independent sets and coverings in graphs	1	Re
CO-3	determine whether graphs are Hamiltonian and/or Eulerian and to solve problems involving vertex and edge connectivity, planarity and crossing numbers	5	An
CO-4	combine theoretical knowledge and independent mathematical thinking in creative investigation of questions in graph theory.	8	Un
CO-5	inspect the applications of graph theory	7	An
CO-6	model and solve real-world problems using graphs both quantitatively and qualitatively.	4	Ap
CO-7	develop an appropriate level of mathematical literacy and competency.	6	Cr
CO-8	formulate problems in terms of graphs, solve graph theoretic problems and apply algorithms.	5	Cr



Semester VI			
Core Integral	IV	Coding theory	
Code: 18UMAI62	Hrs / Week: 7	Hrs / Semester: 105	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamental concepts of coding theory, types of error and control code technique.	1	Un
CO-2	perform with vectors, matrices and projective spaces over finite fields and polynomials.	4	Cr
CO-3	describe the concepts of extended golay code and decode the extended golay code.	3	Ev
CO-4	analyze the theoretical principles of source coding.	6	An
CO-5	analyze the notion of various decoding techniques.	3	An
CO-6	understand and analyze the concepts of error control coding.	2	Un, An
CO-7	prove general facts about different codes and block control coding.	6	Ev
CO-8	apply the knowledge of perfect codes, hamming codes, extended codes and golay codes for error detection and correction.	5	Ap

SEMESTER – I			
Part III	Core I	Classical Algebra	
Course Code:21UMAC11	Hrs / Week: 4	Hrs / Semester: 60	Credits: 3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	solve polynomial equations and simultaneous linear equations.	3	An
CO-2	form the equations from the given roots and identify and solve the reciprocal equations	4	Cr
CO-3	transform the equations by increasing, decreasing and multiplying the roots of the equations	3	Un
CO-4	locate real and imaginary roots of the equations	4	Un
CO-5	find the approximate values of the irrational roots of the equations.	3	Cr
CO-6	determine the roots of the equations by using various methods like Cardon's method, Ferrari's method.	3	Cr



**SEMESTER – I****Core II****Calculus****Course Code :21UMAC12****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	state the concept of curvature of a plane curve.	4	Re
CO-2	calculate the curvature of various curves in plane and space	4	Ev
CO-3	apply the fundamental concepts of Calculus to variety of real world problems.	3	Ap
CO-4	evaluate triple integrals and use them to find volumes in rectangular, cylindrical and spherical coordinates.	3	Ev
CO-5	compute definite and indefinite integrals of algebraic and trigonometric functions using formulae and substitution	3	Cr
CO-6	use Beta and Gamma function to solve different type of integrals and to understand Gamma function as a generalization of factorial function.	6	Ev

### SEMESTER I / III

#### Allied Physics – Paper I - I B.Sc., Mathematics / II B.Sc., Chemistry

<b>Course Code : 21UPHA11</b>	<b>Hrs/Week: 4</b>	<b>Hrs/ Semester: 60</b>	<b>Credits : 4</b>
-------------------------------	--------------------	--------------------------	--------------------

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the fundamentals of elasticity, stress and (K1)	1	Re
CO-2	solve problems related to uniform and non-uniform bending of beams (K3)	1	Ap
CO-3	estimate the thermal conductivity of a bad conductor (K2)	1,6	Un
CO-4	calculate the specific heat capacity of a liquid (K3)	1,6	Ap
CO-5	evaluate the thickness of a thin wire by forming interference fringes (K5)	1,6	Ev
CO-6	outline dispersive power and resolving power of a grating (K4)	1,6	An





**SEMESTER-I****Skill Enhancement Course - I Professional English for Mathematics - I****Course Code:21UMAPE1****Hrs/Week: 2****Hrs/Sem: 30****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recognise their own ability to improve their own competence in using the language	3	Un
CO-2	use language for speaking with confidence in an intelligible and acceptable manner	3	An
CO-3	read independently any unfamiliar texts with comprehension	3	Un
CO-4	understand the importance of writing in academic life	3	An
CO-5	write simple sentences without committing error of spelling or grammar.	4	Un
CO-6	develop critical thinking skills and get culturally aware of the targetsituation	3	Cr

## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

**SEMESTER – II****Core III Analytical Geometry of Three Dimensions****Course Code :21UMAC21****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamental aspects of three-dimensional geometry.	1	Un
CO-2	represent simple three-dimensional figures using two-dimensional drawings.	3	Un
CO-3	demonstrate basic mathematical understanding and computational skills in three dimensions.	8	Un
CO-4	apply algebraic methods to the study of curves and surfaces that lie in three dimensions.	4	Un
CO-5	apply geometric properties and relationships to solve problems in three dimensions.	4	Un
CO-6	develop logical thinking, geometric thinking and three-dimensional spatial ability.	6	An

SEMESTER – II			
Part III	Core IV	Differential Equations	
Course Code :21UMAC22	Hrs / Week: 4	Hrs / Semester: 60	Credits: 3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	verify whether a given function is a solution of a given ordinary differentialequation (as well as verifying initial conditions when applicable).	8	An
CO-2	classify ordinary differential equations into linear and nonlinear equations.	4	Un
CO-3	solve first order linear differential equations.	3	An
CO-4	find the general solution of second order linear homogeneous equations withconstant coefficients.	3	Cr
CO-5	use the laplace transform to compute solutions of second order, linearequations with constant coefficients	3	An
CO-6	identify essential characteristics of ordinary and partial differential equations.	3	Un



**SEMESTER II / IV****Allied Physics – Paper II - I B.Sc., Mathematics/ II B.Sc., Chemistry****Course Code : 21UPHA21****Hrs/Week: 4****Hrs/ Semester: 60****Credits : 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall coulomb's law and the gauss law (K1)	1	Re
CO-2	discuss Lenz's law (K2)	1	Un
CO-3	distinguish self inductance from mutual inductance (K4)	1	An
CO-4	apply knowledge of electricity and magnetism to the nature of physical process and related technological advancements (K3)	1	Ap
CO-5	prove De Morgan's laws (K5)	1,6	Ev
CO-6	discuss the postulates of special theory of relativity (K2)	1	Un



**SEMESTER-II****Skill Enhancement Course - II Professional English for Mathematics - II****Course Code :21UMAPE2****Hrs/Week: 2****Hrs/Sem: 30****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the knowledge for writing purposes such as Presentation, drafting and project report etc.	4	Ap
CO-2	evaluate the correct and error-free writing by being well-versed in rules of English grammar and cultivate relevant technical style of communication and presentation.	6	Ev
CO-3	apply techniques for developing inter-personal communication and to respond questions at a formal interview	3	Ap
CO-4	use critical thinking skills to face everyday life situations.	7	Cr
CO-5	develop strategic competence that will help in efficient communication	6	Ap
CO-6	apply the acquired knowledge and ideas in giving opinions during the meeting and making concluding remarks.	8	An

Semester – III			
Part III Core V		Sequences and Series, Trigonometry	
Course Code :21UMAC31	Hrs/week : 6	Hrs/Semester : 90	Credits : 5

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the important inequalities necessary to compare the real numbers.	3	Ev
CO-2	explain the difference between a sequence and a series in the mathematical context.	2	Un
CO-3	Identify boundedness, monotonic, limit points etc. of a sequence.	8	Un
CO-4	apply various tests to verify the convergence or divergence of a given sequence and also the series.	4	Ap
CO-5	gain a basic knowledge about analysis which helps them in higher studies.	3	Re
CO-6	reconstruct the formulae which are accustomed in elementary levels	4	Ev

Semester - III			
Part III Allied		Statistics I	
Course Code :21UMMA31	Hrs/week : 6	Hrs/Sem : 90	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the difference between the central moments and general moments	1	Un
CO-2	apply concepts and theorems in solving problems	4	Ap
CO-3	find correlation between two variables	3	Ap
CO-4	evaluate particular regression lines	3 and 7	Ap
CO-5	fit Binomial, Poisson and Normal distribution.	4	Ap
CO-6	compare moment generating function and cumulant generating function	2 and 7	Ev





### Semester - III

#### Part III Skill Based Elective Introduction to Python Programming

Course Code :21UMAS31	Hrs/week :2	Hrs/Sem :30	Credits : 2
-----------------------	-------------	-------------	-------------

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the fundamental concepts to write a Python Program	1	Un
CO-2	apply decision and repetitive structures in programme design and demonstrate the use of Python	5	Ap
CO-3	use string function in Python	7	Ev
CO-4	distinguish various Python Objects	4	An
CO-5	write python programs to solve problems	4	Cr
CO-6	use compound data using Python lists and tuples	5	Ev



**Semester – III****Part III Skill Based Elective Quantitative Aptitude I****Course Code : 21UMAS32****Hrs/week : 2****Hrs/ Semester : 30****Credits : 2****Course outcome:**

<b>CO No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
<b>CO-1</b>	solve the problems easily by using short-cut method with time management to face the competitive examinations	4	Ap
<b>CO-2</b>	develop their calculating and computing skills.	5	Ap
<b>CO-3</b>	acquires the ability to understand and analyze the problem	2	Un
<b>CO-4</b>	apply quantitative methods to solve a variety of business problems	5	Ap
<b>CO-5</b>	solve the questions with accuracy and approach the problems in different manner	3	Cr
<b>CO-6</b>	enhances logical skills, arithmetic skills and aptitude skills.	5	Ap

### Semester – III

#### Part III NME I Mathematics for Competitive Examinations I

Course Code : 21UMAN31

Hrs/week : 2

Hrs/Semester : 30

Credits : 2

#### Course Outcomes

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	solve mathematical problems using shortcut methods.	3	Cr
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve the questions with accuracy and within the given time limit.	3	Cr
CO-4	build confidence to face the competitive examinations.	3	Cr
CO-5	enhances logical reasoning skills, arithmetic skills, aptitude skills.	6	Ap
CO-6	simplify and evaluate algebraic expressions.	3	Ev



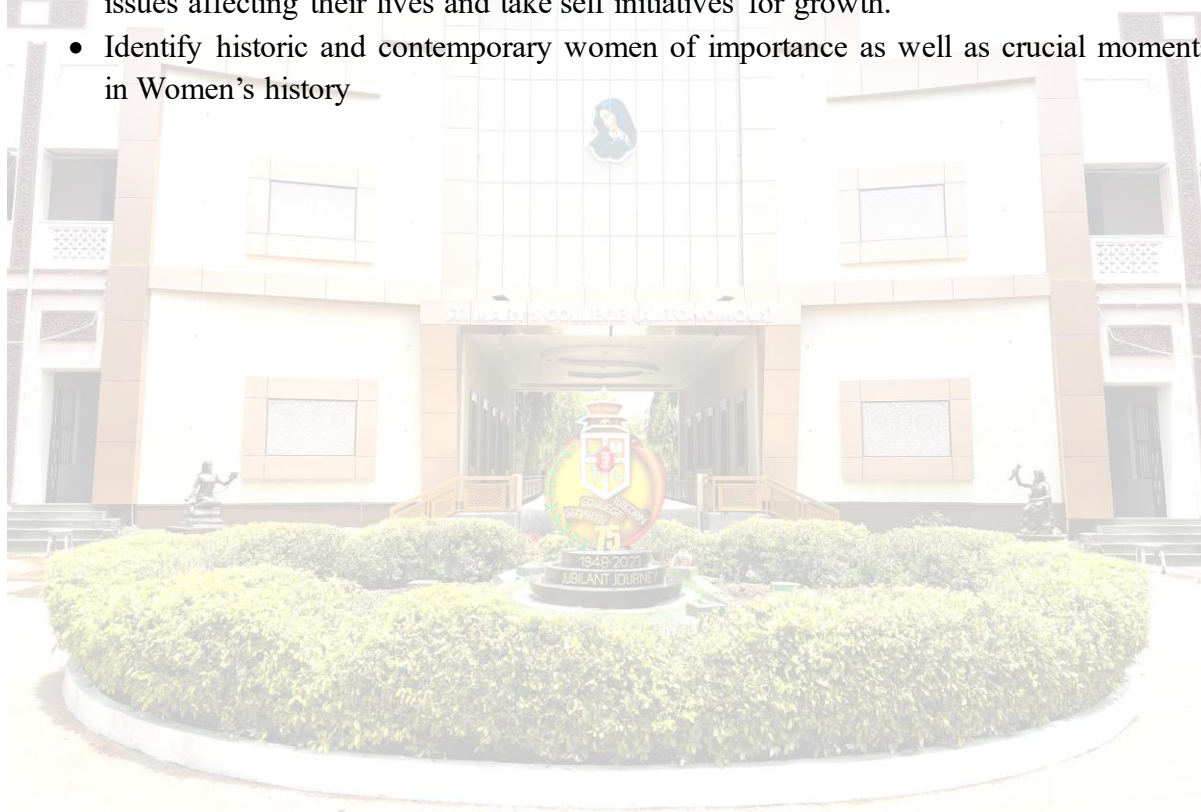
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





Semester – IV			
Part III Core VI		Modern Algebra	
Course Code: 21UMAC41	Hrs/week : 6	Hrs/Semester: 90	Credits : 5

**Course Outcome:**

Co. No	Upon completion of this course, students will	PSO addressed	CL
CO -1	describe and generate the basic algebraic structures such as Groups, Rings, Fields, Integral Domain, Euclidean Domain, etc., and will identify examples of these specific constructs.	1	Ev
CO -2	have a working knowledge of important mathematical concepts such as order of Group, order of an element, generator of a cyclic group, index of a subgroup, characteristic of a Ring, Maximal and Prime Ideals etc.,	2	Un
CO -3	analyze relationship between abstract algebraic structures with familiar number system such as integers, complex and real numbers	2	An
CO -4	critically analyze and construct mathematical arguments that relate to the study of introductory linear algebra. (Proof and Reasoning).	4	An
CO -5	produce the group concepts in other science disciplinary	3	Ap
CO -6	illustrate the isomorphic structures	4	An

## Semester – IV

### Part III Allied

### Statistics II

**Course Code : 21UMMA41**

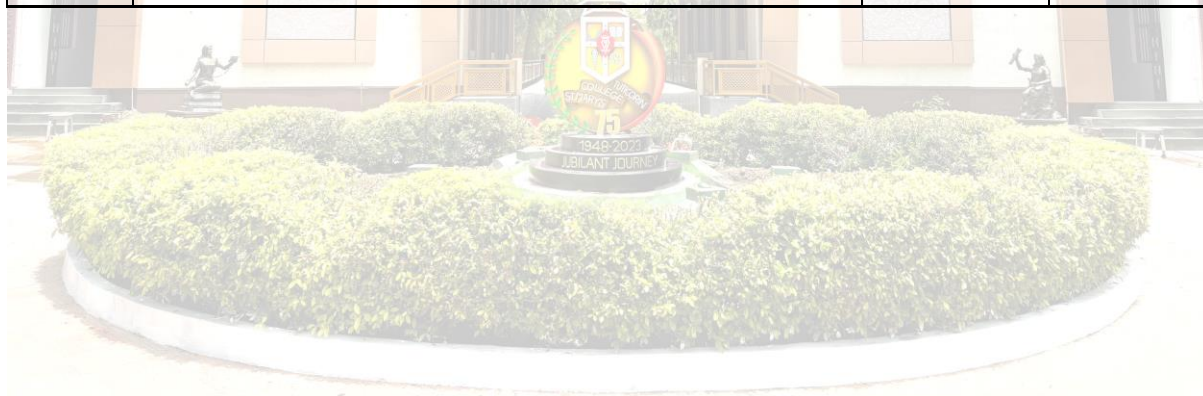
**Hrs/week : 6**

**Hrs/Sem : 90**

**Credits : 4**

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the difference between the weighted index numbers and unweighted	1 and 2	Un
CO-2	compute the upper and lower control limits for different chart	3	Ev
CO-3	apply concepts and theorems in solving problems.	4	Ap
CO-4	demonstrate problem solving skills	3	An
CO-5	know type I and type II error	1	Cr
CO-6	classify the different test static and apply the correct test static	4 and 5	Un &Ap



### Semester - IV

#### Part III Skill Based Elective Documentation using LaTeX

Course Code :21UMAS41	Hrs/week :2	Hrs/ Semester:30	Credits :2
-----------------------	-------------	------------------	------------

#### Course Outcome:

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	know the difference between MS Word and LaTeX	3	Un
CO -2	understand the uses of LaTeX	2	Un
CO -3	apply LaTeX in their typing work	1	Un
CO-4	handle math symbols and tables	3	An
CO-5	become proficient in the use of software applications as used in an office environment.	3 and 8	Ap
CO -6	manipulate with the real life needs in preparing documents	3	Ap

**Semester – IV****Part III Skill Based Elective****Quantitative Aptitude II****Course Code : 21UMAS42****Hrs/week : 2****Hrs/ Semester : 30****Credits : 2****Course outcome:**

<b>CO No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquires the ability to understand and analyze the problem	2	Un
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve mathematical problems using shortcut methods.	4	Cr
CO-4	build confidence to face the competitive examinations.	5	Cr
CO-5	solve the questions with accuracy and within the given time limit.	3	Cr
CO--6	enhances logical skills, arithmetic skills and aptitude skills.	5	Ap



**Semester – IV****Part III NME II Mathematics for Competitive Examinations II****Course Code : 21UMAN41****Hrs/week : 2****Hrs/Semester : 30****Credits : 2****Course Outcomes**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	solve mathematical problems using shortcut methods.	3	Cr
CO-2	develop their calculating and computing skills.	5	Ap
CO-3	solve the questions with accuracy and within the given time limit.	3	Cr
CO-4	build confidence to face the competitive examinations.	3	Cr
CO-5	enhances logical reasoning skills, arithmetic skills, aptitude skills.	6	Ap
CO-6	use mathematical concepts in real world situations.	4	Ap



Semester - V			
Part III Core VII (Common Core) Computer Oriented Numerical Methods			
Course Code: 21UCMC51	Hrs/Week: 6	Hrs/ Semester : 90	Credits : 5

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	find numerical solution of a problem in all aspects and apply these methods to practical implementation as reliable and efficient.	3	Re
CO-2	recognize and apply appropriate principles and concept relevant to numerical analysis.	5	Ap
CO-3	discover the most appropriate estimate for the missing data.	1	Cr
CO-4	analyze the errors obtained in the numerical solutions of problems.	6	An
CO-5	use appropriate numerical methods, determine the solutions to given problems.	3	Ap
CO-6	demonstrate the use of the interpolation method to find the solution for the data.	4	Un

Semester - V			
<b>Part III</b>	<b>Core VIII</b>	<b>Linear Algebra</b>	
<b>Course Code: 21UMAC51</b>	<b>Hrs/week : 5</b>	<b>Hrs/Semester : 75</b>	<b>Credits : 4</b>

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze and construct mathematical arguments that relate to the study of linear algebra. (proof and reasoning).	3	An
CO-2	work within vector spaces and to distill vector space properties	3	An
CO-3	solve systems of linear equations and determine whether a system of equations is consistent or not and find its general solution.	6	An
CO-4	compute eigenvalues and eigenvectors of a matrix.	4	Ap
CO-5	develop analytical thinking in R-Programming	5	An
CO-6	understand the concept of Inner Product Spaces	1	Un

Semester V			
Part III Core IX		Graph Theory	
Course Code : 21UMAC52	Hrs / Week : 5	Hrs / Semester: 75	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify induced subgraphs, paths, cycles, independent sets and coverings in graphs	1	Re
CO-2	determine whether graphs are Hamiltonian and/or Eulerian and to solve problems involving vertex and edge connectivity, planarity and crossing numbers	5	An
CO-3	combine theoretical knowledge and independent mathematical thinking in creative investigation of questions in graph theory.	8	Un
CO-4	inspect the applications of graph theory	7	An
CO-5	model and solve real-world problems using graphs both quantitatively and qualitatively.	4	Ap
CO-6	develop an appropriate level of mathematical literacy and competency and formulate problems in terms of graphs, solve graph theoretic problems and apply algorithms.	6	Cr



**SEMESTER – V****Part III Core X****Real Analysis****Course Code :21UMAC53****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcomes**

<b>Co No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	interpret real number system, define and recognize the continuity of real functions	1	Re
CO -2	define and recognize the real functions and its limits	1	Re
CO -3	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	An
CO -4	determine the continuity, differentiability of functions defined on subsets of the real line	3	Ev
CO -5	apply the Mean Value Theorem and the intermediate value property to problems in the context of real analysis	5	Ap
CO -6	describe fundamental properties of the real numbers that lead to the formal development of real analysis.	3	An

**Semester –V**

**Part III Core XI- Vector Calculus and Fourier Series**

<b>Course Code :21UMAC54</b>	<b>Hrs/week :4</b>	<b>Hrs/Semester :60</b>	<b>Credits :4</b>
------------------------------	--------------------	-------------------------	-------------------

**Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	differentiate and integrate vector-valued functions and apply calculus to motion problems in two and three dimensional space	2	An
CO-2	compute gradient, curl and divergence of vector fields.	1 and 3	Cr
CO-3	use the gradient to find directional derivatives.	3	Ap
CO-4	solve problems in multiple integration using rectangular, cylindrical, and spherical coordinate systems	8	Ap
CO-5	select and apply appropriate models and techniques to define and evaluate integrals	3	Ev
CO-6	know that any periodic function can be expressed as a fourier series.	6	Cr

Semester –V			
Part III Core Elective Discrete Mathematics			
Course Code : 21UMAE51	Hrs/week : 4	Hrs/ Semester: 60	Credits : 4

### Course Outcomes

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand logic and mathematical reasoning to count or enumerate objects in a systematic way.	1	Un
CO -2	use truth tables for expressions involving the logical connectives .	8	Ap
CO -3	apply standard rules of inference and grasp the notions of lattices.	3	Ap
CO -4	understand Boolean algebra and truth tables.	1	Un
CO -5	evaluate and simplify expressions using the properties of Boolean Algebra.	5	Ev
CO -6	apply logical reasoning to solve a variety of problems.	4	Ap

Semester V			
Part III Core Elective		Transforms	
Course Code: 21UMAE52	Hrs/Week: 4	Hrs/Sem: 60	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the relation between Fourier and Laplace transforms.	4	Ap
CO-2	evaluate complex integrals by various methods.	1	An
CO-3	understand Z - Transforms	1	Un
CO-4	solve ordinary differential equations using Laplace transform.	1,4	An
CO-5	understand the applications of Laplace transform and Fourier Transform	1,5	Un
CO-6	apply the Transforms to various differential equations.	2	Ap





### Semester - V

#### Common Skill Based Core      Computer for Digital Era and Soft Skills

**Code : 21UCSB51**

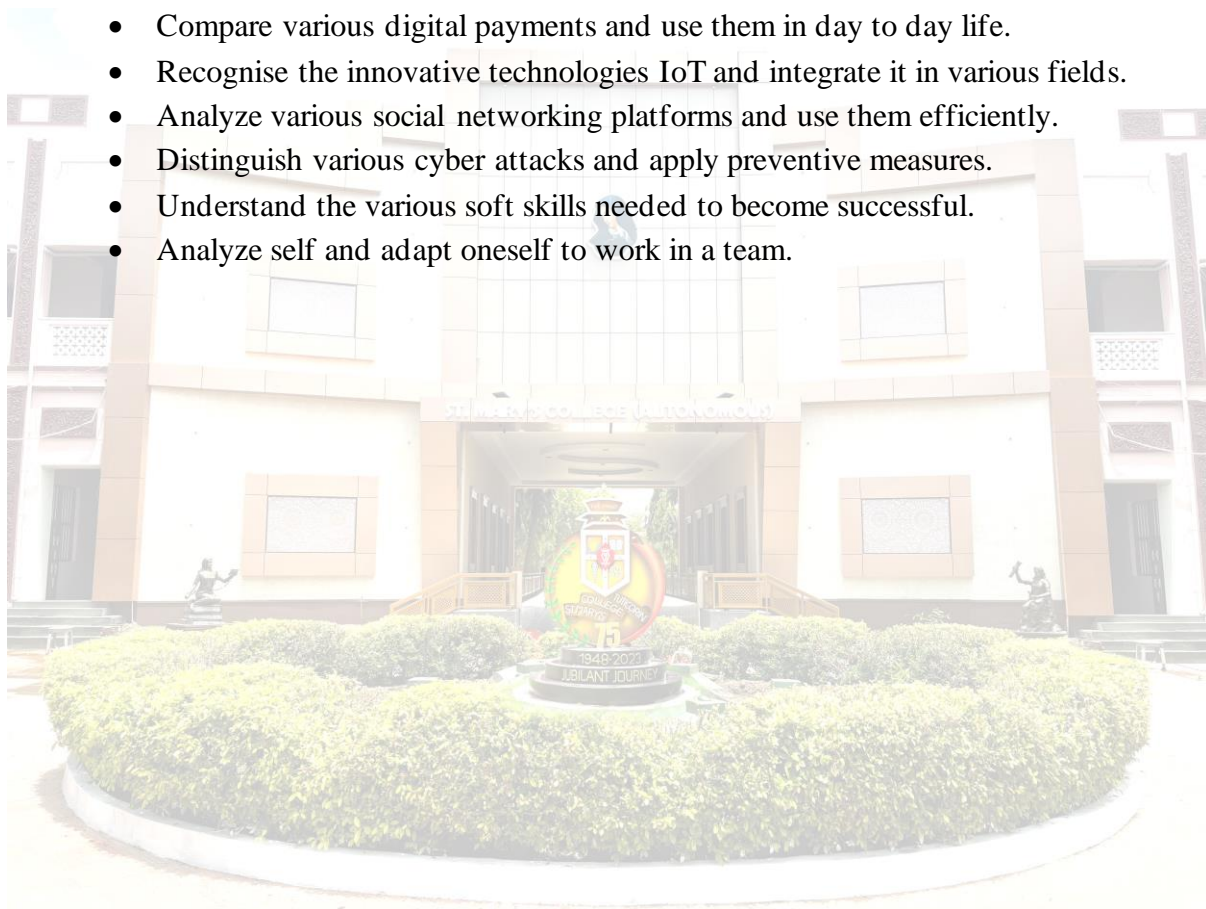
**Hrs / Week : 2**

**Hrs / Sem : 30**

**Credits : 2**

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



Semester –VI			
Part III Core XII		Complex Analysis	
Course Code : 21UMAC61	Hrs/week :6	Hrs/Semester :90	Credits :5

**Course Outcome:**

CO No	Upon successful completion of this course students will be able to:	PSO addressed	CL
CO-1	compute sums, products, quotients, conjugate, modulus, and argument of complex numbers.	1	An
CO-2	understand the significance of differentiability for complex functions and be familiar with the Cauchy-Riemann equations.	2	Un
CO-3	evaluate integrals along a path in the complex plane and understand the statement of Cauchy's Theorem.	6	Ev
CO-4	know the condition(s) for a complex variable function to be analytic and/or harmonic.	3	Un
CO-5	compute the Taylor and Laurent expansions of simple functions, determining the nature of the singularities and calculating residues.	2	An
CO-6	demonstrate curve properties for image processing with transformation	6	Ap

## Semester VI

### Semester – VI

**Part III Core XIII**

**Modern Analysis**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	gain knowledge of concepts of modern analysis, such as open sets ,closed sets, completeness, connectedness and compactness in metric spaces	1	Un
CO -2	write simple proofs on their own and study rigorous proofs	5	Ap
CO -3	develop a higher level of mathematical maturity combined with the ability to think analytically	2	Un
CO -4	develop a broad understanding encompassing logical reasoning, generalization, abstraction, and formal proof.	5	Ap
CO -5	explain the basic theory of metric spaces and its application to function spaces.	3	Ev
CO -6	apply the theory to solve mathematical problems including the construction of simple proofs.	2	An
<b>Course Code : 21UMAC62</b>		<b>Hrs / Week: 6</b>	<b>Hrs / Semester: 90</b>
		<b>Credits: 5</b>	

**Course Outcome:**

**Part III Core XIV****Mechanics**

<b>Course Code :21UMAC63</b>	<b>Hrs/week :6</b>	<b>Hrs/Semester :90</b>	<b>Credits :5</b>
------------------------------	--------------------	-------------------------	-------------------

**Course Outcomes**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the equilibrium of forces	1	Un
CO-2	distinguish between parallel and non-parallel forces	4	Cr &Ap
CO-3	know the types of friction laws	1	Cr
CO-4	apply friction laws in problems	5	Un &Ap
CO-5	understand the two types of impact and simple harmonic motion	1	Ap
CO-6	determine the simple harmonic motion	4	Ap





Semester –VI			
Part III Core XV		Operations Research	
Course Code :21UMAC64	Hrs/week : 6	Hrs/Semester :90	Credits : 5

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop a fundamental understanding of linear programming models	1,3	Un
CO-2	solve dual linear programming problem and two-dimensional linear programming problem.	8	Ap
CO-3	apply the simplex method for solving linear programming problem	5	Ap
CO-4	interpret the mathematical tools that are needed to solve optimization problems and comprehend the concept of a Transportation Model and develop the initial solution for the same	4	Un
CO-5	apply the Hungarian method for solving assignment problems	5	Ap
CO-6	examine the significant impact of job sequencing system on total elapsed time management	8	An

**Programme: M. Sc. Mathematics**

Semester I			
Core I		Groups and Rings	
Code: 19PMAC11	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	determine the orbit for a set and make use of the counting principle technique to find algebraic descriptions for the size of each equivalence class.	2	Ev
CO-2	explain Sylow's theorem for all finite groups.	5	Ev
CO-3	describe all abelian groups generated by a finite set of elements and to find the root of unity for each element of a group.	1,2	Un
CO-4	analyze and demonstrate the examples of Ideals and Quotient Rings.	5	An
CO-5	assess properties implied by the definition of Euclidean Rings and to illustrate and apply the concepts of Polynomial Rings.	6	Ev
CO-6	determine and use orthogonality and matrices	2	Ev
CO-7	show procedural fluency with polynomial expressions including basic factoring.	4	Un
CO-8	apply the definitions of matrix multiplication that corresponds to composition of linear transformations.	2	Ap

Semester I			
Core II		Real Analysis	
Code: 19PMAC12	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	determine the basic properties of real numbers.	5,6	Ev
CO-2	demonstrate the knowledge of real functions, limit offunctions and their properties	2,5	Ap
CO-3	analyze the concept of differentiability of real functions andrelated theorems	6	Un
CO-4	determine the continuity, differentiability and integrabilityof functions defined on the real line.	2,5	Ev
CO-5	analyse the concepts of continuous functions and theirproperties	6	Ap
CO-6	explain the concepts of axioms of real number systems, uniform convergence of sequences and series of functions,equicontinuity, compact and complete metric spaces, the Stone-Weierstrass theorem.	1,5	Un
CO-7	apply the concept of the series of real numbers and convergence.	2,5	Ap
CO-8	describe fundamental properties of the real numbers thatlead to the formal development of real analysis.	2	Un

Semester I			
Core III		Ordinary Differential Equations	
Code:19PMAC13	Hrs/Week:6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	find the solution of second order differential equations by variation of parameters.	2	Re
CO-2	use power series methods to solve differential equations about ordinary points.	6	Ap
CO-3	use the method of Frobenius to solve differential equations about regular singular points.	5	Ap
CO-4	Approximate polynomials in terms of Legendre and Bessel equations.	2	Un
CO-5	understand the importance of Picard's Theorem.	2	Un
CO-6	solve scientific and engineering problems	8	Ap
CO-7	comprehend the Euler equation, Bessel equation and Regular singular points.	2	An
CO-8	solve the Homogenous linear system with constant co-efficient	2,5	Un



Semester I			
Core IV		Mathematical Statistics	
Code: 19PMAC14	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO.NO.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the concepts of distributions and apply them.	2,8	Un
CO-2	provide a description of the method used for analysis, including a discussion of advantages, disadvantages and necessary assumptions.	1,2	An
CO-3	apply discrete and continuous probability to evaluate the probability of real world events.	2,7	Ap
CO-4	provide a conclusion to the study including a discussion of limitations of the analysis.	2,8	An
CO-5	test statistical hypothesis.	2	Cr
CO-6	explain the concepts of random variable, probability distribution, distribution function, expected value, variance and higher moments, and calculate expected values and probabilities associated with the distributions of random variables	2,7,8	Un
CO-7	define a probability generating function, a moment generating function and derive them in simple cases.	5,8	Re
CO-8	state the central limit theorem, and apply it.	1,5	Ap

Semester I			
Core V		Operations Research	
Code: 19PMAC15	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	classify and formulate integer programming problems and solve them with Cutting Plane Algorithm, Branch and Bound Algorithm.	2,4	Un
CO-2	formulate and solve classical dynamic programming problems.	2,6	Un
CO-3	formulate and solve inventory models and other related models.	2	Un
CO-4	understand and solve problems regarding decision theory and game theory.	2	Un
CO-5	analyze a network of queues with Poisson external arrival, exponential service requirements and independent routing.	1,6	An
CO-6	explain the concept of complementary slackness and its role in solving primal and dual problems	2	Un
CO-7	set up decision models and use some solution methods for nonlinear optimization problems.	2,6	Cr
CO-8	propose the best strategy using decision making methods under uncertainty and game theory.	2	Ev

Semester II			
Core VI		Linear Algebra	
Code: 19PMAC21	Hrs/Week: 6	Hrs/Semester: 90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	compute inner products and determine orthogonality on vector spaces including Gram Schmidt orthogonalization.	5,6	Re
CO-2	explain the concepts of field extensions and apply it to diverse situations in mathematical contexts.	7	Ev
CO-3	demonstrate accurate and efficient use of field extension and Galois Theory.	5,6	Un
CO-4	study Polynomial Rings and its effect in Galois Theory.	6	Ap,Ev
CO-5	define and illustrate the concepts of various polynomials and represent a linear transformation by a matrix with respect to a given basis.	2,6	Re
CO-6	understand the significance of various canonical forms.	5	Un
CO-7	explain the fundamental concepts of algebra and their role in modern mathematics and applied contexts.	2	Ev
CO-8	provide information on polynomials, matrices and transformations.	2	Re

Semester II			
Core VII		Mathematical Analysis	
Code: 19PMAC22	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	determine the Riemann integrability and the Riemann- Stieltjes integrability of a bounded function and able to prove theorems concerning integration.	4	Ev
CO-2	recognize the difference between point wise and uniform convergence of a sequence of functions.	2,6	Ev
CO-3	illustrate the effect of uniform convergence on the limit function with respect to continuity, differentiability and integrability.	2	Un
CO-4	illustrate the convergent properties of power series.	2	Un
CO-5	analyze the concepts of Fourier Series and Beta, Gamma functions.	2	An
CO-6	propose rigorous proofs of results that arise in the context of real analysis	5,6	Cr
CO-7	prove theorems about the differentiability of functions and relate to the integrability of functions.	6	Ev
CO-8	describe fundamental properties of the real numbers that lead to the formal development of real analysis.	1	Re



Semester II			
Core VIII		Classical Mechanics	
Code: 19PMAC23	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze the dynamics of system near equilibrium and find the normal modes of oscillation.	2	An
CO-2	understand D'Alembert's Principle and simple applications of the Lagrangian formulation.	2,6	Un
CO-3	calculate the principle co-ordinates and the principle moment of inertia for arbitrary rigid body.	2	Re
CO-4	understand the concepts and derivations of Hamilton's equations of motion.	5	Un
CO-5	explain Hamiltonian principles and establish the Hamiltonian equations.	2,5	Re
CO-6	calculate the magnitude of selected mechanical properties of materials.	2	Re
CO-7	distinguish the concept of the Hamilton equation of motion and the Principle of least Action.	6	An
CO-8	analyze the Canonical transformation and Hamilton Jacobi theory.	5	Un

Semester II			
Core IX		Calculus of Variations and Integral Equations	
Code: 19PMAC24	Hrs/Week: 4	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the properties of geometrical problems	2	Un
CO-2	apply variational problems and isoperimetric problems.	2	Ap
CO-3	expose to the decomposition method.	2	E
CO-4	apply different types of integral equations.	2	Ap
CO-5	solve variational problems with constraints both algebraic and isoperimetric.	2,6	Ap
CO-6	derive the Euler - Lagrange equation for variational problems including the case of general variations.	2,5	Re, Ap
CO-7	derive conserved quantities from symmetries and use them to solve the Euler- Lagrange equations.	2,6	Re,Ap
CO-8	solve integral equations and analyze the relation between differential equations and Volterra integral equations	2	Ap

Semester II			
Core X		Fuzzy Algebra	
Code :19PMAC25	Hrs/week: 4	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	decide the difference between crisp sets and fuzzy sets.	6	Ev
CO-2	use the fuzzy set theory on statistical methods.	7	Ap
CO-3	compare statistical methods against fuzzy logic methods.	1,7	Ev
CO-4	apply fuzzy logic membership function.	2,6	Ap
CO-5	solve problems on fuzzy set theory.	2	Ap
CO-6	evaluate fuzzy statistics applications	2,7	Ap
CO-7	apply the methods of fuzzy sets and fuzzy logic in solving problems in the theory of fuzzy control.	1,7	Ap
CO-8	explain the theory of statistics fuzzy logic	5	Re, Un

Semester II			
Elective I	A	Combinatorics	
Code:19PMAE21	Hrs/week: 4	Hrs/Sem:60	Credits: 3

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recognize the properties and behavior of permutations and combinations.	1, 6	Un
CO-2	solve problems involving strings, combinations, distributions and partitions.	2	Cr
CO-3	understand the ideas of permutations and combinations.	1,6	Un
CO-4	apply, implement and interpret the theory of combinatorics to relevant probability and statistics problems.	2	Ap
CO-5	understand the addition and multiplication principles of counting.	3	Un
CO-6	apply diverse counting strategies to solve varied problems involving combinations and distributions	2,3	Ap
CO-7	identify, formulate and solve combinatorial problems.	2	Ap
CO-8	apply combinatorial ideas to practical problems	1,6	Ap



Semester - II			
Elective I		B Stochastic Processes	
Code: 19PMAE21	Hrs/week: 4	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the stochastic models for many real life probabilistic situations.	8	Un
CO-2	explain the well known models like birth-death and queueing to reorient their knowledge of stochastic analysis.	7	Cr
CO-3	understand the random walk associated with real life situation to solve.	1	Un
CO-4	analyze the transition probabilities and its classifications.	2	An
CO-5	discuss erlang process and execute it.	5	Un
CO-6	apply into real life problems	1,8	Ap
CO-7	understand the notions of stochastic process.	5	Un
CO-8	apply markov chains to practical problems	4	Ap

Semester III			
Core XI		Topology	
Code: 19PMAC31	Hrs/Week: 6	Hrs/Semester: 90	Credits: 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define and illustrate the concepts of topological spaces and product topology.	5	Re
CO-2	explain how the topology on a space is determined by the collection of open sets, by the collection of closed sets, or by a basis of neighbourhoods at each point, and the conditions for a function to be continuous.	2	Ev
CO-3	explain the concepts concerned with properties that are preserved under continuous deformation of objects.	5&6	Ev
CO-4	apply the knowledge general topology to formulate and solve problems of a topological nature in mathematics and other fields where topological issues arise.	2	Ap
CO-5	define Connectedness and Compactness and prove the related theorems.	5	Re
CO-6	understand the separation axioms in different spaces.	5	Un
CO-7	familiar with the Uryshon lemma and the Tietze extension theorem, and can characterize metrizable spaces.	1&5	Ap
CO-8	explain the relation between the three types of compactness in general topological spaces and in metric spaces.	5	An

Semester III			
Core XII		Graph Theory	
Code: 19PMAC32	Hrs/Week: 6	Hrs/Sem:90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic concepts of graphs, directed graphs and present the graph by matrices.	7	Un
CO-2	solve the problems involving edge and vertex connectivity, Planarity and crossing number and to determine the Eulerian and Hamiltonian graphs.	2,7	Ap
CO-3	develop the critical and analytical thinking about Matchings.	1	Ap
CO-4	analyze the properties of Trees and Connectivity	5,7	An
CO-5	solve the problems involving vertex and edge coloring.	2,7	Ap
CO-6	understand and apply the fundamental concepts of independent sets.	2	Un
CO-7	show a series of graph theoretical problems which have realworld applications	1	Re
CO-8	discuss and understand the importance of the concepts Matchings and Colorings.	1,7	An,Un

Semester III			
Core XIII		Measure Theory	
Code: 19PMAC33	Hrs/Week:5	Hrs/Sem: 75	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic definitions and the properties of Lebesgue measure of measurable sets.	1	Un
CO-2	define Lebesgue integral and discuss its properties.	6	Re
CO-3	analyze the concept of $L^p$ spaces.	1,2	An
CO-4	explain the concept of simple functions and Lebesgue integral of nonnegative integral functions.	6	Ap
CO-5	summarize and discuss the properties of outer measure.	2	Un
CO-6	develop a basic knowledge of measure theory needed to understand probability theory and functional analysis	7	Cr
CO-7	develop probabilistic concepts within the frame work of measure theory.	7	Cr
CO-8	integrate a measurable function with respect to a measure.	1	Cr, Ap



### Semester III

Core – XIV

Partial Differential Equations

Code: 19PMAC34

Hrs/Week: 5

Hrs/Sem: 75

Credits: 4

#### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the fundamental concepts of Ordinary Differential Equations and Partial Differential Equations and the basic numerical methods for their resolution.	2	Ap
CO-2	demonstrate accurate and sufficient use of Laplace's equation and their applications in the theory of PDE.	2,6	Ap
CO-3	investigate the behavior of second order partial differential equations.	1,2	Un
CO-4	analyze the Partial Differential Equations using separation of variables techniques.	6	An
CO-5	formulate and solve the differential equations using Laplace Equation.	2	Un
CO-6	extract information from partial derivative models in order to interpret reality.	6	Cr
CO-7	apply partial derivative techniques to predict the behavior of certain phenomena.	2	Ap
CO-8	extract information from partial derivative models in order to interpret reality.	5	An

Semester III			
Elective II	A	Fluid Mechanics	
Code: 19PMAE31	Hrs/Week: 4	Hrs/Sem: 60	Credits: 3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain fundamentals of fluid mechanics, which is used in the applications of Hydraulics.	1,8	Un
CO-2	employ Archimedes principle to solve numerical examples on Buoyancy.	2,5	Ap
CO-3	develop understanding about hydrostatic law, principle of buoyancy and stability of a floating body and application of mass, momentum and energy equation in fluid flow.	2	Ap
CO-4	imbibe basic laws and equations used for analysis of static and dynamic fluids.	1,8	Un
CO-5	examine stability of submerged and floating bodies.	6	An
CO-6	differentiate horizontal motion and vertical motion.	1	An
CO-7	describe methods of implementing fluid mechanics laws and phenomena.	5,6	Re
CO-8	calculate and optimize operational parameters of hydraulic problems, systems and machines	2	Cr,Ap

Semester - III			
Elective II     B		Wavelet Analysis	
Code: 19PMAE31	Hrs/week: 4	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand wavelet basis and characterize continuous and discrete wavelet transform	2	Un
CO-2	understand multi resolution analysis and identify various wavelets and evaluate their time frequency resolution properties	3	Un
CO-3	analyze discrete wavelet transforms with multirate digital filters	8	An
CO-4	discuss and explain the main merits and limitations of wavelet analysis	2	An
CO-5	explain the properties and applications of wavelet transform	1	Ev
CO-6	apply into real life problems	2,3	Ap
CO-7	explain brief features and strength of transform beyond wavelet.	2	Ev
CO-8	design certain classes of wavelets to specification and justify the basis of the application of wavelet transforms to different fields	1,6	Cr

Semester III	
Self-Study Course	Discrete Mathematics
Code: 19PMAS1	Credits: 2

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	simplify and evaluate basic logic statements including compound statements, implications, inverses, converses, and contra positives using truth tables and the properties of logic.	1,6	Cr
CO-2	express a logic sentence in terms of predicates, quantifiers, and logical connectives.	1	Ev
CO-3	solve problems using the principle of inclusion-exclusion and use Venn diagrams to solve problems.	2	Cr
CO-4	determine simple or a multigraph, directed or undirected graph, cyclic or acyclic graph and determine the connectivity of a graph.	1,6	Un
CO-5	analyze the growth of elementary functions and determine their Big-O value; analyze simple algorithms and compare two algorithms based on computational complexity.	5	An
CO-6	explain the Inclusion- Exclusion principle and pigeonhole principle.	6	Ev
CO-7	apply counting principles to determine probabilities	1,6	Ap
CO-8	determine the level of a node, the height of a tree or subtree and apply counting theorems to the edges and vertices of a tree.	1,6	Un



Semester IV			
Core XVI		Complex Analysis	
Code: 19PMAC41	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	define and analyze limits and continuity for complex functions as well as consequences of continuity.	1,6	Re
CO-2	evaluate the complex contour integral directly and by the fundamental theorem.	6	Re
CO-3	represent functions as Taylor, power and Laurent series, classify singularities and poles, find the residues and evaluate complex integrals using the residue theorem.	6	Un
CO-4	apply the concept and consequences of analyticity and the Cauchy-Riemann equations and of results on Harmonic and entire functions including the fundamental theorem of algebra.	2,6	Ap
CO-5	analyze the sequence and series of analytic functions and types of convergence.	1,6	An
CO-6	represent complex numbers algebraically and geometrically	6	Un
CO-7	demonstrate accurate and efficient use of complex analysis techniques	6	An
CO-8	apply the methods of complex analysis to evaluate definite integrals and infinite series.	1,2	Ap

SEMESTER IV			
CORE XVII		Functional Analysis	
Code: 19PMAC42	Hrs/Week: 6	Hrs/Semester: 90	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the spectral theorem for compact self- adjoint operators and decide which properties an operator has.	5	Ap
CO-2	understand the various concepts of Banach Spaces.	5	Un
CO-3	attain a detailed knowledge about Hilbert Spaces.	2,5	Re
CO-4	understand the Operator theory in Hilbert Spaces.	1,5	Un
CO-5	explain the concepts of different operators.	5	Un
CO-6	get clear ideas about the finite dimensional Spectral Theory.	1	Re
CO-7	independently decide if a linear space is a Banach space.	5	An
CO-8	understand the statements and proof of important theorems and explain the key steps in proofs sometimes with variation	1	Un

Semester IV			
Core XVIII		Number Theory	
Code:19PMAC43	Hrs/week: 5	Hrs/Sem:75	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define the key notions of algebraic number theory and outline their interrelation.	5	Re
CO-2	calculate the most important number theoretical quantities introduced during the course.	5	Re
CO-3	give an account of fundamental theorems of the course and apply them in specific cases.	1,6	Re
CO-4	calculate and solve the system of linear congruences and warning problem.	2,6	Re
CO-5	differentiate the greatest integer functions and arithmetic function.	1,6	An
CO-6	define and interpret the concepts of divisibility, congruence and prime factorization.	5	Re
CO-7	apply Euler-Fermat's theorem to prove relations involving prime numbers.	2	Ap
CO-8	solve problems on quadratic reciprocity and the Jacobi symbol.	2,6	Cr

Semester IV			
Core XIX		Differential Geometry	
Code: 19PMAC44	Hrs/Week: 5	Hrs/Sem: 75	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	construct a variety of geometrical objects.	1	Ap
CO-2	acquire the essential ideas about the theory of space curves.	6	Re
CO-3	understand the concepts of the contact between curves and surfaces.	5	Un
CO-4	analyze the different consequences and meanings of parallelism on Euclidean and hyperbolic planes.	1	An
CO-5	demonstrate the knowledge of the historical developments of Euclidean and Non- Euclidean geometry.	5	Un
CO-6	demonstrate the knowledge of family of curves, geodesics and the fundamental forms.	1,6	Un
CO-7	use concrete models to demonstrate geometric concepts	2	Ap
CO-8	evaluate the principal curvatures, the mean curvature and Gauss curvature of a given surface.	2,6	Ev



Semester I			
Core I		Groups and Rings	
Course Code: 21PMAC11	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	illustrate the orbit for a set and make use of the counting principle technique to find algebraic descriptions for the size of each equivalence class.	2	Un
CO-2	describe all abelian groups generated by a finite set of elements and to find the root of unity for each element of a group.	1,2	Re
CO-3	analyze and demonstrate the examples of Ideals and Quotient Rings.	5	An
CO-4	evaluate the properties implied by the definition of Euclidean Rings and to illustrate and apply the concepts of Polynomial Rings.	6	Ev
CO-5	recall procedural fluency with polynomial expressions including basic factoring.	4	Re
CO-6	write the definitions of matrix multiplication that corresponds to composition of linear transformations.	2	Re

Semester I			
Core II		Real Analysis	
Course Code: 21PMAC12	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the basic properties of real numbers.	5,6	Re
CO-2	demonstrate the knowledge of real functions, limit of functions and their properties	2,5	Ap
CO-3	evaluate the continuity, differentiability and integrability of functions defined on the real line.	2,5	Ev
CO-4	analyse the concepts of continuous functions and their properties	6	An
CO-5	explain the concepts of axioms of real number systems, uniform convergence of sequences and series of functions, equicontinuity, compact and complete metric spaces, the Stone-Weierstrass theorem.	1,5	Un
CO-6	apply the concept of the series of real numbers and convergence.	2,5	Ap

Semester I			
Core III		Ordinary Differential Equations	
Course Code: 21PMAC13	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	solve the solution of second order differential equations by variation of parameters.	2	Ap
CO-2	solve the method of Frobenius to solve differential equations about regular singular points.	5	Ap
CO-3	construct Legendre and Bessel equations.	2	Cr
CO-4	solve scientific and engineering problems	8	Ap
CO-5	compare the Euler equation, Bessel equation and Regular singular points.	2	An
CO-6	understand the Homogenous linear system with constant co-efficient	2,5	Un



Semester I			
Core IV		Mathematical Statistics	
Course Code: 21PMAC14	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO.NO.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the concepts of distributions and apply them.	2,8	Un
CO-2	examine the method used for analysis, including a discussion of advantages, disadvantages and necessary assumptions.	1,2	An
CO-3	apply discrete and continuous probability to evaluate the probability of real world events.	2,7	Ap
CO-4	compare the distribution with one another.	2,8	An
CO-5	apply the concepts of random variable, probability distribution, distribution function, expected value, variance and higher moments, and calculate expected values and probabilities associated with the distributions of random variables	2,7,8	Ap
CO-6	define a probability generating function, a moment generating function and derive them in simple cases.	5,8	Re



Semester I			
Elective I A		Combinatorics	
Course Code:21PMAE11	Hrs/week: 6	Hrs/Sem:90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the properties and behaviour of permutations and combinations.	1, 6	Un
CO-2	solve problems involving strings, combinations, distributions and partitions.	2	Ap
CO-3	understand the ideas of permutations and combinations.	1,6	Un
CO-4	apply, implement and interpret the theory of combinatorics to relevant probability and statistics problems.	2	Ap
CO-5	evaluate the addition and multiplication principles of counting.	3	Ev
CO-6	apply diverse counting strategies to solve varied problems involving combinations and distributions	2,3	Ap

Semester I			
Elective I B		Fuzzy Sets	
Course Code :21PMAE12	Hrs/week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate crisp sets and fuzzy sets.	6	An
CO-2	apply the fuzzy set theory on statistical methods.	7	Ap
CO-3	compare statistical methods against fuzzy logic methods.	1,7	An
CO-4	apply fuzzy logic membership function.	2,6	Ap
CO-5	solve problems on fuzzy set theory.	2	Ap
CO-6	identify the methods of fuzzy sets and fuzzy logic in solving problems in the theory of fuzzy control.	1,7	Re



Semester II			
Core V		Linear Algebra	
Course Code: 21PMAC21	Hrs/Week: 6	Hrs/Semester: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define inner products and determine orthogonality on vector spaces including Gram Schmidt orthogonalization.	5,6	Re
CO-2	explain the concepts of field extensions and apply it to diverse situations in mathematical contexts.	7	Un
CO-3	demonstrate accurate and efficient use of field extension and Galois Theory.	5,6	Ap
CO-4	understand Polynomial Rings and its effect in Galois Theory.	6	Un
CO-5	understand the significance of various canonical forms.	5	Un
CO-6	evaluate the fundamental concepts of algebra and their role in modern mathematics and applied contexts.	2	Ev

Semester II			
Core VI		Mathematical Analysis	
Course Code: 21PMAC22	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate the Riemann integrability and the Riemann-Stieltjes integrability of a bounded function and able to prove theorems concerning integration.	4	An
CO-2	distinguish pointwise and uniform convergence of a sequence of functions.	2,6	Un
CO-3	illustrate the convergent properties of power series.	2	Un
CO-4	analyze the concepts of Fourier Series and Beta, Gamma functions.	2	An
CO-5	compare differentiability of functions and relate to the integrability of functions.	6	An
CO-6	describe fundamental properties of the real numbers that lead to the formal development of real analysis.	1	Un



Semester II			
Core VII		Classical Mechanics	
Course Code:21PMAC23	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze the dynamics of system near equilibrium and find the normal modes of oscillation.	2	An
CO-2	understand D' Alembert's Principle and simple applications of the Lagrangian formulation.	2,6	Un
CO-3	compute the principle co-ordinates and the principle moment of inertia for arbitrary rigid body.	2	Ap
CO-4	explain Hamiltonian principles and establish the Hamiltonian equations.	2,5	Un
CO-5	write the magnitude of selected mechanical properties of materials.	2	Cr
CO-6	distinguish the concept of Hamilton equation of motion and lagrange's equations.	6	An

Semester II			
Core VIII		Calculus of Variations and Integral Equations	
Course Code:21PMAC24	Hrs/Week: 4	Hrs/Sem: 60	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the properties of geometrical problems	2	Un
CO-2	evaluate to the decomposition method.	2	Ev
CO-3	compare different types of integral equations.	2	An
CO-4	examine the Euler - Lagrange equation for variational problems including the case of general variations.	2,5	An
CO-5	recall symmetries and use them to solve the Euler-Lagrange equations.	2,6	Re
CO-6	solve integral equations and analyze the relation between differential equations and Volterra integral equations	2	Ap



Semester - II			
Core IX		Stochastic Processes	
Course Code: 21PMAC25	Hrs/week: 4	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	illustrate the stochastic model.	8	Un
CO-2	explain the well known models like birth-death and queueing to reorient their knowledge of stochastic analysis.	7	Un
CO-3	analyze the transition probabilities and its classifications.	2	An
CO-4	compare the different stochastic models.	1,8	An
CO-5	understand the notions of stochastic process.	5	Un
CO-6	apply markov chains to practical problems	4	Ap



Semester II			
Elective II A		Operations Research	
Course Code: 21PMAE21	Hrs/Week: 4	Hrs/Sem: 60	Credits: 3

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	classify and formulate integer programming problems and solve them with Cutting Plane Algorithm, Branch and Bound Algorithm.	2,4	Ap
CO-2	solve classical dynamic programming problems.	2,6	Ap
CO-3	compare inventory models and other related models.	2	An
CO-4	analyze a network of queues with Poisson external arrival, exponential service requirements and independent routing.	1,6	An
CO-5	evaluate the concept of complementary slackness and its role in solving prime and dual problems	2	Ev
CO-6	define probabilistic inventory models that accounts for all variations in real systems.	2	Re





Semester II			
Elective II B		Applied Algebra	
Course Code: 21PMAE22	Hrs/Week: 4	Hrs/Sem: 60	Credits: 3

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand some fundamental mathematical concepts and terminology.	2,4	Un
CO-2	analyse recursive definitions.	2,6	An
CO-3	compare the different techniques for constructing mathematical proofs, illustrated by discrete mathematics examples	2	An
CO-4	solve linear codes and cyclic codes.	1,6	Ap
CO-5	understand the concepts of Boolean Algebra and lattices.	2	Un
CO-6	apply basic and advanced principles of codes	2,6	Ap



Semester III			
Core X	Topology		
Course Code: 21PMAC31	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define and illustrate the concepts of topological spaces and product topology.	5	Re
CO-2	explain the concepts concerned with properties that are preserved under continuous deformation of objects.	5,6	Un
CO-3	apply the knowledge general topology to formulate and solve problems of a topological nature in mathematics and other fields where topological issues arise.	2	Ap
CO-4	analyse Connectedness and Compactness and prove the related theorems.	5	An
CO-5	understand the separation axioms in different spaces.	5	Un
CO-6	explain the relation between the three types of compactness in general topological spaces and in metric spaces.	5	An

Semester III			
Core XI		Graph Theory	
Course Code: 21PMAC32	Hrs/Week: 6	Hrs/Sem:90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic concepts of graphs, directed graphs and present the graph by matrices.	7	Un
CO-2	solve the problems involving edge and vertex connectivity, Planarity and crossing number and to determine the Eulerian and Hamiltonian graphs.	2,7	Ap
CO-3	analyze the properties of Trees and Connectivity	5,7	An
CO-4	solve the problems involving vertex and edge coloring.	2,7	Ap
CO-5	understand and apply the fundamental concepts of independent sets.	2	Un
CO-6	show a series of graph theoretical problems which have real world applications	1	Re



Semester III			
Core XII		Measure Theory	
Course Code: 219MAC33	Hrs/Week:5	Hrs/Sem: 75	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic definitions and the properties of Lebesgue measure of measurable sets.	1	Un
CO-2	define Lebesgue integral and discuss its properties.	6	Re
CO-3	analyze the concept of bounded variation.	1,2	An
CO-4	explain the concept of simple functions and Lebesgue integral of nonnegative integral functions.	6	Un
CO-5	summarize and discuss the properties of outer measure.	2	Un
CO-6	develop a basic knowledge of measure theory needed to understand probability theory and functional analysis	7	Cr





Semester III			
Core XIII		Partial Differential Equations	
Course Code: 21PMAC34	Hrs/Week: 5	Hrs/Sem: 75	Credits: 4

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the fundamental concepts of Ordinary Differential Equations and Partial Differential Equations and the basic numerical methods for their resolution.	2	Ap
CO-2	demonstrate accurate and sufficient use of Laplace's equation and their applications in the theory of PDE.	2,6	Ap
CO-3	investigate the behavior of second order partial differential equations.	1,2	Un
CO-4	analyze the Partial Differential Equations using separation of variables techniques.	6	An
CO-5	solve the differential equations using Laplace Equation.	2	Ap
CO-6	apply partial derivative techniques to predict the behavior of certain phenomena.	2	Ap

Semester III			
Elective III A		Fluid Mechanics	
Course Code: 21PMAE31	Hrs/Week: 4	Hrs/Sem: 60	Credits: 3

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	explain fundamentals of fluid mechanics, which is used in the applications of Hydraulics.	1,8	Un
CO-2	classify hydrostatic law, principle of buoyancy and stability of a floating body and application of mass, momentum and energy equation in fluid flow.	2	Ap
CO-3	examine stability of submerged and floating bodies.	6	An
CO-4	differentiate horizontal motion and vertical motion.	1	An
CO-5	describe methods of implementing fluid mechanics laws and phenomena.	5,6	Re
CO-6	calculate and optimize operational parameters of hydraulic problems, systems and machines	2	Ap

Semester - III			
Elective III B		Wavelet Analysis	
Course Code: 21PMAE32	Hrs/week: 4	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand wavelet basis and characterize continuous and discrete wavelet transform	2	Un
CO-2	understand multi resolution analysis and identify various wavelets and evaluate their time frequency resolution properties	3	Un
CO-3	discuss and explain the main merits and limitations of wavelet analysis	2	An
CO-4	explain the properties and applications of wavelet transform	1	Un
CO-5	explain brief features and strength of transform beyond wavelet.	2	Un
CO-6	analyse the basis of the application of wavelet transforms to different fields	1,6	An

Semester IV			
Core XV		Complex Analysis	
Course Code: 21PMAC41	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	define and analyze limits and continuity for complex functions as well as consequences of continuity.	1,6	Re
CO-2	evaluate the complex contour integral directly and by the fundamental theorem.	6	Re
CO-3	represent functions as Taylor, power and Laurent series, classify singularities and poles, find the residues and evaluate complex integrals using the residue theorem.	6	Un
CO-4	apply the concept and consequences of analyticity and the Cauchy-Riemann equations and of results on Harmonic and entire functions including the fundamental theorem of algebra.	2,6	Ap
CO-5	demonstrate accurate and efficient use of complex analysis techniques	6	An
CO-6	apply the methods of complex analysis to evaluate definite integrals.	1,2	Ap



Semester IV			
Core XVI		Functional Analysis	
Course Code: 21PMAC42	Hrs/Week: 6	Hrs/Semester: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	apply the spectral theorem for compact self- adjoint operators and decide which properties an operator has.	5	Ap
CO-2	understand the various concepts of Banach Spaces.	5	Un
CO-3	attain a detailed knowledge about Hilbert Spaces.	2,5	Re
CO-4	understand the Operator theory in Hilbert Spaces.	1,5	Un
CO-5	explain the concepts of different operators.	5	Un
CO-6	understand the statements and proof of important theorems and explain the key steps in proofs sometimes with variation	1	Un



Semester IV			
Core XVII		Number Theory and Cryptography	
Course Code:21PMAC43	Hrs/week: 5	Hrs/Sem:75	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	define the key notions of algebraic number theory and outline their interrelation.	5	Re
CO-2	calculate the most important number theoretical quantities introduced during the course.	5	Re
CO-3	calculate and solve the system of linear congruences and warning problem.	2,6	Re
CO-4	differentiate the greatest integer functions and arithmetic function.	1,6	An
CO-5	explains the notions of public key encryption and digital signatures.	6	Un
CO-6	describe and implement the specifics of some of the prominent techniques for public key crypto systems and digital signature schemes	6	Re

Semester I			
Core I Groups and Rings			
Course Code: 21PMAC11	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	illustrate the orbit for a set and make use of the counting principle technique to find algebraic descriptions for the size of each equivalence class.	2	Un
CO-2	describe all abelian groups generated by a finite set of elements and to find the root of unity for each element of a group.	1,2	Re
CO-3	analyze and demonstrate the examples of Ideals and Quotient Rings.	5	An
CO-4	evaluate the properties implied by the definition of Euclidean Rings and to illustrate and apply the concepts of Polynomial Rings.	6	Ev
CO-5	recall procedural fluency with polynomial expressions including basic factoring.	4	Re
CO-6	write the definitions of matrix multiplication that corresponds to composition of linear transformations.	2	Re

Semester I
------------

**Core II****Real Analysis****Course Code: 21PMAC12****Hrs/Week: 6****Hrs/Sem: 90****Credits: 4****Course Outcome**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the basic properties of real numbers.	5,6	Re
CO-2	demonstrate the knowledge of real functions, limit of functions and their properties	2,5	Ap
CO-3	evaluate the continuity, differentiability and integrability of functions defined on the real line.	2,5	Ev
CO-4	analyse the concepts of continuous functions and their properties	6	An
CO-5	explain the concepts of axioms of real number systems, uniform convergence of sequences and series of functions, equicontinuity, compact and complete metric spaces, the Stone-Weierstrass theorem.	1,5	Un
CO-6	apply the concept of the series of real numbers and convergence.	2,5	Ap

**Semester I**

Criterion I

SSR Cycle V



<b>Core III Ordinary Differential Equations</b>			
<b>Course Code: 21PMAC13</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits: 4</b>

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	solve the solution of second order differential equations by variation of parameters.	2	Ap
CO-2	solve the method of Frobenius to solve differential equations about regular singular points.	5	Ap
CO-3	construct Legendre and Bessel equations.	2	Cr
CO-4	solve scientific and engineering problems	8	Ap
CO-5	compare the Euler equation, Bessel equation and Regular singular points.	2	An
CO-6	understand the Homogenous linear system with constant co-efficient	2,5	Un



Semester I			
Core IV		Mathematical Statistics	
Course Code: 21PMAC14	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO.NO.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the concepts of distributions and apply them.	2,8	Un
CO-2	examine the method used for analysis, including a discussion of advantages, disadvantages and necessary assumptions.	1,2	An
CO-3	apply discrete and continuous probability to evaluate the probability of real world events.	2,7	Ap
CO-4	compare the distribution with one another.	2,8	An
CO-5	apply the concepts of random variable, probability distribution, distribution function, expected value, variance and higher moments, and calculate expected values and probabilities associated with the distributions of random variables	2,7,8	Ap
CO-6	define a probability generating function, a moment generating function and derive them in simple cases.	5,8	Re

Semester I			
Elective I A		Combinatorics	
Course Code:21PMAE11	Hrs/week: 6	Hrs/Sem:90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the properties and behaviour of permutations and combinations.	1, 6	Un
CO-2	solve problems involving strings, combinations, distributions and partitions.	2	Ap
CO-3	understand the ideas of permutations and combinations.	1,6	Un
CO-4	apply, implement and interpret the theory of combinatorics to relevant probability and statistics problems.	2	Ap
CO-5	evaluate the addition and multiplication principles of counting.	3	Ev
CO-6	apply diverse counting strategies to solve varied problems involving combinations and distributions	2,3	Ap

Semester I			
Elective I B		Fuzzy Sets	
Course Code :21PMAE12	Hrs/week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate crisp sets and fuzzy sets.	6	An
CO-2	apply the fuzzy set theory on statistical methods.	7	Ap
CO-3	compare statistical methods against fuzzy logic methods.	1,7	An
CO-4	apply fuzzy logic membership function.	2,6	Ap
CO-5	solve problems on fuzzy set theory.	2	Ap
CO-6	identify the methods of fuzzy sets and fuzzy logic in solving problems in the theory of fuzzy control.	1,7	Re





Semester II			
Core V		Linear Algebra	
Course Code: 21PMAC21	Hrs/Week: 6	Hrs/Semester: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define inner products and determine orthogonality on vector spaces including Gram Schmidt orthogonalization.	5,6	Re
CO-2	explain the concepts of field extensions and apply it to diverse situations in mathematical contexts.	7	Un
CO-3	demonstrate accurate and efficient use of field extension and Galois Theory.	5,6	Ap
CO-4	understand Polynomial Rings and its effect in Galois Theory.	6	Un
CO-5	understand the significance of various canonical forms.	5	Un
CO-6	evaluate the fundamental concepts of algebra and their role in modern mathematics and applied contexts.	2	Ev

Semester II			
Core VI		Mathematical Analysis	
Course Code: 21PMAC22	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	differentiate the Riemann integrability and the Riemann-Stieltjes integrability of a bounded function and able to prove theorems concerning integration.	4	An
CO-2	distinguish pointwise and uniform convergence of a sequence of functions.	2,6	Un
CO-3	illustrate the convergent properties of power series.	2	Un
CO-4	analyze the concepts of Fourier Series and Beta, Gamma functions.	2	An
CO-5	compare differentiability of functions and relate to the integrability of functions.	6	An
CO-6	describe fundamental properties of the real numbers that lead to the formal development of real analysis.	1	Un

Semester II			
Core VII		Classical Mechanics	
Course Code:21PMAC23	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

Co. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyze the dynamics of system near equilibrium and find the normal modes of oscillation.	2	An
CO-2	understand D' Alembert's Principle and simple applications of the Lagrangian formulation.	2,6	Un
CO-3	compute the principle co-ordinates and the principle moment of inertia for arbitrary rigid body.	2	Ap
CO-4	explain Hamiltonian principles and establish the Hamiltonian equations.	2,5	Un
CO-5	write the magnitude of selected mechanical properties of materials.	2	Cr
CO-6	distinguish the concept of Hamilton equation of motion and lagrange's equations.	6	An

Semester II			
Core VIII		Calculus of Variations and Integral Equations	
Course Code:21PMAC24	Hrs/Week: 4	Hrs/Sem: 60	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the properties of geometrical problems	2	Un
CO-2	evaluate to the decomposition method.	2	Ev
CO-3	compare different types of integral equations.	2	An
CO-4	examine the Euler - Lagrange equation for variational problems including the case of general variations.	2,5	An
CO-5	recall symmetries and use them to solve the Euler-Lagrange equations.	2,6	Re
CO-6	solve integral equations and analyze the relation between differential equations and Volterra integral equations	2	Ap





Semester - II			
Core IX		Stochastic Processes	
Course Code: 21PMAC25	Hrs/week: 4	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	illustrate the stochastic model.	8	Un
CO-2	explain the well known models like birth-death and queueing to reorient their knowledge of stochastic analysis.	7	Un
CO-3	analyze the transition probabilities and its classifications.	2	An
CO-4	compare the different stochastic models.	1,8	An
CO-5	understand the notions of stochastic process.	5	Un
CO-6	apply markov chains to practical problems	4	Ap



Semester II			
Elective II A		Operations Research	
Course Code: 21PMAE21	Hrs/Week: 4	Hrs/Sem: 60	Credits: 3

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	classify and formulate integer programming problems and solve them with Cutting Plane Algorithm, Branch and Bound Algorithm.	2,4	Ap
CO-2	solve classical dynamic programming problems.	2,6	Ap
CO-3	compare inventory models and other related models.	2	An
CO-4	analyze a network of queues with Poisson external arrival, exponential service requirements and independent routing.	1,6	An
CO-5	evaluate the concept of complementary slackness and its role in solving prime and dual problems	2	Ev
CO-6	define probabilistic inventory models that accounts for all variations in real systems.	2	Re



Semester II			
Elective II B		Applied Algebra	
Course Code: 21PMAE22	Hrs/Week: 4	Hrs/Sem: 60	Credits: 3

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand some fundamental mathematical concepts and terminology.	2,4	Un
CO-2	analyse recursive definitions.	2,6	An
CO-3	compare the different techniques for constructing mathematical proofs, illustrated by discrete mathematics examples	2	An
CO-4	solve linear codes and cyclic codes.	1,6	Ap
CO-5	understand the concepts of Boolean Algebra and lattices.	2	Un
CO-6	apply basic and advanced principles of codes	2,6	Ap



Semester III			
Core X	Topology		
Course Code: 21PMAC31	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define and illustrate the concepts of topological spaces and product topology.	5	Re
CO-2	explain the concepts concerned with properties that are preserved under continuous deformation of objects.	5,6	Un
CO-3	apply the knowledge general topology to formulate and solve problems of a topological nature in mathematics and other fields where topological issues arise.	2	Ap
CO-4	analyse Connectedness and Compactness and prove the related theorems.	5	An
CO-5	understand the separation axioms in different spaces.	5	Un
CO-6	explain the relation between the three types of compactness in general topological spaces and in metric spaces.	5	An



Semester III			
Core XI		Graph Theory	
Course Code: 21PMAC32	Hrs/Week: 6	Hrs/Sem:90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic concepts of graphs, directed graphs and present the graph by matrices.	7	Un
CO-2	solve the problems involving edge and vertex connectivity, Planarity and crossing number and to determine the Eulerian and Hamiltonian graphs.	2,7	Ap
CO-3	analyze the properties of Trees and Connectivity	5,7	An
CO-4	solve the problems involving vertex and edge coloring.	2,7	Ap
CO-5	understand and apply the fundamental concepts of independent sets.	2	Un
CO-6	show a series of graph theoretical problems which have real world applications	1	Re



Semester III			
Core XII		Measure Theory	
Course Code: 219MAC33	Hrs/Week:5	Hrs/Sem: 75	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic definitions and the properties of Lebesgue measure of measurable sets.	1	Un
CO-2	define Lebesgue integral and discuss its properties.	6	Re
CO-3	analyze the concept of bounded variation.	1,2	An
CO-4	explain the concept of simple functions and Lebesgue integral of nonnegative integral functions.	6	Un
CO-5	summarize and discuss the properties of outer measure.	2	Un
CO-6	develop a basic knowledge of measure theory needed to understand probability theory and functional analysis	7	Cr



Semester III			
Core XIII		Partial Differential Equations	
Course Code: 21PMAC34	Hrs/Week: 5	Hrs/Sem: 75	Credits: 4

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	apply the fundamental concepts of Ordinary Differential Equations and Partial Differential Equations and the basic numerical methods for their resolution.	2	Ap
CO-2	demonstrate accurate and sufficient use of Laplace's equation and their applications in the theory of PDE.	2,6	Ap
CO-3	investigate the behavior of second order partial differential equations.	1,2	Un
CO-4	analyze the Partial Differential Equations using separation of variables techniques.	6	An
CO-5	solve the differential equations using Laplace Equation.	2	Ap
CO-6	apply partial derivative techniques to predict the behavior of certain phenomena.	2	Ap

Semester III			
Elective III A		Fluid Mechanics	
Course Code: 21PMAE31	Hrs/Week: 4	Hrs/Sem: 60	Credits: 3

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	explain fundamentals of fluid mechanics, which is used in the applications of Hydraulics.	1,8	Un
CO-2	classify hydrostatic law, principle of buoyancy and stability of a floating body and application of mass, momentum and energy equation in fluid flow.	2	Ap
CO-3	examine stability of submerged and floating bodies.	6	An
CO-4	differentiate horizontal motion and vertical motion.	1	An
CO-5	describe methods of implementing fluid mechanics laws and phenomena.	5,6	Re
CO-6	calculate and optimize operational parameters of hydraulic problems, systems and machines	2	Ap



Semester - III			
Elective III B		Wavelet Analysis	
Course Code: 21PMAE32	Hrs/week: 4	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand wavelet basis and characterize continuous and discrete wavelet transform	2	Un
CO-2	understand multi resolution analysis and identify various wavelets and evaluate their time frequency resolution properties	3	Un
CO-3	discuss and explain the main merits and limitations of wavelet analysis	2	An
CO-4	explain the properties and applications of wavelet transform	1	Un
CO-5	explain brief features and strength of transform beyond wavelet.	2	Un
CO-6	analyse the basis of the application of wavelet transforms to different fields	1,6	An

Semester IV			
Core XV		Complex Analysis	
Course Code: 21PMAC41	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	define and analyze limits and continuity for complex functions as well as consequences of continuity.	1,6	Re
CO-2	evaluate the complex contour integral directly and by the fundamental theorem.	6	Re
CO-3	represent functions as Taylor, power and Laurent series, classify singularities and poles, find the residues and evaluate complex integrals using the residue theorem.	6	Un
CO-4	apply the concept and consequences of analyticity and the Cauchy-Riemann equations and of results on Harmonic and entire functions including the fundamental theorem of algebra.	2,6	Ap
CO-5	demonstrate accurate and efficient use of complex analysis techniques	6	An
CO-6	apply the methods of complex analysis to evaluate definite integrals.	1,2	Ap

Semester IV			
Core XVI		Functional Analysis	
Course Code: 21PMAC42	Hrs/Week: 6	Hrs/Semester: 90	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	apply the spectral theorem for compact self- adjoint operators and decide which properties an operator has.	5	Ap
CO-2	understand the various concepts of Banach Spaces.	5	Un
CO-3	attain a detailed knowledge about Hilbert Spaces.	2,5	Re
CO-4	understand the Operator theory in Hilbert Spaces.	1,5	Un
CO-5	explain the concepts of different operators.	5	Un
CO-6	understand the statements and proof of important theorems and explain the key steps in proofs sometimes with variation	1	Un



Semester IV			
Core XVII		Number Theory and Cryptography	
Course Code:21PMAC43	Hrs/week: 5	Hrs/Sem:75	Credits: 4

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	define the key notions of algebraic number theory and outline their interrelation.	5	Re
CO-2	calculate the most important number theoretical quantities introduced during the course.	5	Re
CO-3	calculate and solve the system of linear congruences and warning problem.	2,6	Re
CO-4	differentiate the greatest integer functions and arithmetic function.	1,6	An
CO-5	explains the notions of public key encryption and digital signatures.	6	Un
CO-6	describe and implement the specifics of some of the prominent techniques for public key crypto systems and digital signature schemes	6	Re



**Programme: M.Sc. Microbiology**

<b>SEMESTER- I</b>			
<b>Core I - Fundamentals of Microbiology</b>			
<b>Code : 19PMIC11</b>	<b>Hrs/ Week: 5</b>	<b>Hrs/ Sem: 75</b>	<b>Credits: 4</b>

**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	get an idea about the historical events in microbiology.	1	Kn
CO-2	know the scope of microbiology	1,2	Kn
CO-3	know parts of microscope, type and its principle	1,2	Kn
CO-4	distinguish different methods of staining techniques	3	Un
CO-5	understand various physical and chemical means of sterilization.	1,5	Un
CO-6	know various culture media and its application	4	Kn
CO-7	analyse nutritional requirements of microbes.	5,6	Ev
CO-8	understand the techniques for isolation of pure culture of microorganisms.	1,5,6	Un

**SEMESTER I****Core – II Microbial Diversity And Classification****Code : 19PMIC12****Hrs/ Week: 5****Hrs/ Sem: 75****Credits: 4****Course Outcome:**

<b>C O No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO -1	understand the ubiquitous nature of microbes.	1	Un
CO -2	explain the basic concept of microbial diversity and classification.	3	Re
CO -3	discuss the knowledge about the various diversification in microorganism	4	Cr
CO -4	explain the knowledge of reproduction in microbes	5	Un
CO- 5	describe genetic characters of microbes.	5	Un
CO -6	understand the general classification of microbes	4	Un
CO -7	explain the characters of protozoa	4	Un
CO -8	understand the characters of arthropod vectors	3	Un

**SEMESTER I****Core III- Biochemistry****Code : 19PMIC13****Hrs/ Week: 4****Hrs/ Sem: 60****Credits: 4****Course Outcome:**

CO No	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	compare and contrast the structure, classification and function of the carbohydrates.	1,2	Un, Kn
CO-2	understand the structure, classification and function of lipids.	1,3	Un
CO-3	compare and contrast saturated, mono-saturated and poly-saturated fatty acids.	1	Kn
CO-4	know the structure and classification of proteins	5	Kn
CO-5	know the classification and properties of amino acids.	5	Kn
CO-6	recognize the importance of nucleic acids and its role.	6	Un
CO-7	know the dna, rna structure, function, types and importance	6	Kn
CO-8	understand the functions of enzymes, coenzymes and cofactors	5,6	Un



## SEMESTER – I

### Core – IV Microbial Physiology

<b>Code : 19PMIC14</b>	<b>Hrs/ Week: 4</b>	<b>Hrs/ Sem: 60</b>	<b>Credits: 4</b>
------------------------	---------------------	---------------------	-------------------

#### Course Outcome:

CO No	Upon completion of this course students will be able to	PSO addressed	CL
CO -1	illustrate the basic knowledge about the microbial physiology functions and its various metabolism	3	Re
CO - 2	define various components of electron transport chain and their functions.	4,3	Re
CO -3	elaborate the bacterial growth curve and the measurement of their cell growth	4	Cr
CO - 4	explain the various bacterial transport mechanisms and their secretion system	2	Un
CO - 5	discuss about various electron transport takes place under aerobic and anaerobic condition.	1,3	Cr
CO- 6	interpret the list of fermentation mechanisms for atp regeneration.	7	Un
CO -7	prioritize various aerobic and anaerobic phototrophic bacteria with examples	1,2	E v
CO - 8	know about various pigments of the photosynthetic apparatus and learn about photosynthesis in <i>halobacteria</i> bioluminescence.	2,6	K n



**SEMESTER – II****Core – V Immunology**

<b>Code : 19PMIC21</b>	<b>Hrs/Week : 5</b>	<b>Hrs/Sem : 75</b>	<b>Credits : 4</b>
------------------------	---------------------	---------------------	--------------------

**Course Outcome:**

<b>CO No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	interpret the basic system of immune response.	1	Un
CO - 2	recall about the classification of various immune cells and their functions in elevating immune response.	4	R e
CO - 3	improve knowledge about the nature , functions and characteristics of antigen and antibodies involved in immune response.	3,2	C r
CO - 4	assess the detailed information about the mhc and hla.	4	Ev
CO - 5	illustrate various complement fixation pathways and their basic mechanisms.	6	U n
CO - 6	interpret the knowledge about various antigen and antibody reactions with their principle.	1	Un
CO - 7	improve the knowledge about various hypersensitivity reactions and transplantation immunology.	3,4	Cr
CO - 8	prioritize various applications of monoclonal antibodies and types of vaccines.	1	E v

**SEMESTER-II****Core-VI Medical Microbiology**

<b>Code: 19PMIC22</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits:4</b>
-----------------------	--------------------	--------------------	------------------

**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO -1	recall the clinical microbiology concept to patient care	1	Re
CO -2	analyse the level information in the subject of medical microbiology	6	An
CO -3	illustrate the different classes of microbes	3	Un
CO -4	describe the applied microbiology aspects of clinical technique.	1	Un
CO- 5	describe the role of chemotherapeutic technique	4	Un
CO -6	explain the drug resistance capacity of microbes	4	Un
CO -7	outline the concepts of chemotherapy and its mode of action	4	Un
CO -8	explain the knowledge of mycology and parasitology	5	Un

**SEMESTER – II****Core –VII Microbial Genetics and Molecular Biology****Code: 19PMIC23****Hrs/ Week: 4****Hrs/ Sem: 60****Credit: 4****Course Outcome:**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	relate the genetics of microorganisms	1	Re
CO-2	recall the molecular mechanisms of microorganisms	1	Re
CO-3	explain all important topics to prepare for competitive exams	5	Un
CO-4	examine the history of molecular biology	2	An
CO-5	analyse about nucleic acids, their damage and repair mechanism	6	An
CO-6	compare all gene transfer methods	2	Ev
CO-7	interpret the central dogma of molecular biology	1	Un
CO-8	agree the concept of mutation	2	Ev



**SEMESTER – II****Core VIII -Marine Microbiology****Code :19PMIC24****Hrs/ Week: 4****Hrs/ Sem: 60****Credits:4****Course Outcome:**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describe the basic knowledge on marine ecosystem.	1	Re
CO -2	acquire the knowledge about diversity of marine ecosystem	1,2	Kn
CO-3	can analyses the aware of bio fouling and prevention.	2,3,4	Ev
CO-4	interpret the knowledge on marine microorganisms.	1,2	Ap
CO-5	determines the microbial indicator organisms.	1	Kn
CO-6	explain the concept of marine pollution	2,3,4	Co
CO-7	grasp the knowledge about bioactive compounds.	2,3,4	An
CO-8	know the wealth of the sea	2	Kn



**SEMESTER-III****Core-X- Genetic Engineering****Code -19PMIC32****Hrs/Week:5****Hrs/Sem:75****Credits:4****Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO- 1	explain the knowledge about cloning	2	An,Un
CO -2	perceive the applications of genetic engineering in various fields	4	Un, Re
CO- 3	understands the hazardous and potential risk in releasing transgenic into environment	5	Un
CO -4	create the techniques used in genetic engineering	2	An, Re
CO -5	understands the concepts of blotting techniques and its applications	3	Un
CO -6	discuss the cloning techniques and the production of transgenic materials	4	Un,An
CO -7	understand the synthesis of genetically modified commercial products	4	Un
CO- 8	make use of enzymology in genetic engineering	1	Cr

**SEMESTER – IV****Core – XIV- Soil and Agricultural Microbiology**

<b>Code :19PMIC42</b>	<b>Hrs/ Week: 4</b>	<b>Hrs/ Sem: 60</b>	<b>Credit: 4</b>
-----------------------	---------------------	---------------------	------------------

**Course Outcome:**

<b>CO.No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	recall the ecological groups of microbes and properties of soil	1	Re,Un
CO -2	have knowledge about the soil fertility	1,2	Un
CO-3	recall the previous basic knowledge about nitrogen fixing	1,2	Re,Co
CO-4	explain about plant microbe interaction.	2	Un
CO-5	acquire basic knowledge about important of plantmicrobe interaction for different layers (rhizosphere, phyllosphere)	2	Ap, Un
CO-6	gets knowledge about recombinant microbes agriculture.	2,4	Un, Co
CO-7	demonstrate an understanding of bio fertilizer	2	Sy
CO-8	develop the application of bio fertilizers in agricultural	5	Ap, Cr

**SEMESTER –IV****Core XV – Applied Microbiology**

<b>Code: 19PMIC43</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Sem: 60</b>	<b>Credits:4</b>
-----------------------	--------------------	--------------------	------------------

**Course Outcome:**

<b>CO . No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquire basic knowledge on applied microbiology	4	Un
CO -2	explain the basics of composting technology	4	Un
CO-3	appreciate the production of biogas technology	4	An
CO-4	grasp the fundamental knowledge about mushroom cultivation	4	Un
CO-5	acquire basic knowledge about <i>spirulina</i> production	2	Ap
CO-6	gets knowledge about biodegradation.	4,2	Un
CO-7	acquire detail knowledge about bioremediation.	2,4	Ap
CO-8	acquire the detail knowledge on bioaccumulation and bioleaching.	4,5	Un,Ap

## SEMESTER- I

### Core I

### Fundamentals of Microbiology

Course Code : 21PMIC11

Hrs/ Week: 5

Hrs/ Sem: 75

Credits: 4

### Course Outcome:

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	get an idea about the historical events in microbiology.	1	Kn
CO-2	know the scope of microbiology	1,2	Kn
CO-3	know parts of microscope, type and its principle	1,2	Kn
CO-4	distinguish different methods of staining techniques	3	Un
CO-5	analyse nutritional requirements of microbes.	5,6	Ev
CO-6	understand the techniques for isolation of pure culture of microorganisms.	1,5,6	Un





## SEMESTER I

### Core – II                      Microbial Diversity and Classification

<b>Course Code : 21PMIC12</b>	<b>Hrs/ Week: 5</b>	<b>Hrs/ Sem: 75</b>	<b>Credits: 4</b>
-------------------------------	---------------------	---------------------	-------------------

#### Course Outcome:

C O No	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	understand the ubiquitous nature of microbes.	1	Un
CO -2	explain the basic concept of microbial diversity and classification.	3	Re
CO -3	discuss the knowledge about the various diversification in microorganism	4	Cr
CO -4	explain the knowledge of reproduction in microbes	5	Un
CO- 5	describe genetic characters of microbes.	5	Un



SEMESTER I			
Core III		Biochemistry	
Course Code : 21PMIC13	Hrs/ Week: 4	Hrs/ Sem: 60	Credits: 4

**Course Outcome :**

CO No	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	compare and contrast the structure, classification and function of the carbohydrates.	1,2	Un, Kn
CO-2	understand the structure, classification and function of lipids.	1,3	Un
CO-3	compare and contrast saturated, mono-saturated and poly-saturated fatty acids.	1	Kn
CO-4	know the structure and classification of proteins	5	Kn
CO-5	know the dna, rna structure, function, types and importance	6	Kn
CO-6	understand the functions of enzymes, coenzymes and cofactors	5,6	Un



SEMESTER – I			
Core – IV		Microbial Physiology	
Course Code : 21PMIC14	Hrs/ Week: 4	Hrs/ Sem: 60	Credits: 4

**Course Outcome :**

CO No	Upon completion of this course students will be able to	PSO addressed	CL
CO -1	illustrate the basic knowledge about the microbial physiology functions and its various metabolism	3	Re
CO - 2	define various components of electron transport chain and their functions.	4,3	Re
CO -3	elaborate the bacterial growth curve and the measurement of their cell growth	4	Cr
CO - 4	explain the various bacterial transport mechanisms and their secretion system	2	Un
CO - 5	discuss about various electron transport takes place under aerobic and anaerobic condition.	1,3	Cr
CO- 6	interpret the list of fermentation mechanisms for ATP regeneration.	7	Un

**SEMESTER – II****Core – V****Immunology****Course Code : 21PMIC21****Hrs/Week : 5****Hrs/Sem : 75****Credits : 4****Course Outcome:**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	prioritize various applications of monoclonal antibodies and types of vaccines.	1	E v
CO - 2	recall about the classification of various immune cells and their functions in elevating immune response.	4	R e
CO - 3	improve knowledge about the nature , functions and characteristics of antigen and antibodies involved in immune response.	3,2	C r
CO - 4	improve the knowledge about various hypersensitivity reactions and transplantation immunology.	3,4	Cr
CO - 5	illustrate various complement fixation pathways and their basic mechanisms.	6	U n
CO - 6	interpret the knowledge about various antigen and antibody reactions with their principle.	1	Un



## SEMESTER-II

### Core-VI

### Medical Microbiology

**Course Code: 21PMIC22**

**Hrs/Week: 5**

**Hrs/Sem: 75**

**Credits:4**

### Course Outcome:

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall the clinical microbiology concept to patient care	1	Re
CO -2	analyse the level information in the subject of medical microbiology	6	An
CO -3	illustrate the different classes of microbes	3	Un
CO -4	describe the applied microbiology aspects of clinical technique.	1	Un
CO- 5	describe the role of chemotherapeutic technique	4	Un
CO -6	explain the drug resistance capacity of microbes	4	Un



**SEMESTER – II****Core –VII Microbial Genetics and Molecular Biology****Course Code: 21PMIC23****Hrs/ Week: 4****Hrs/ Sem: 60****Credit: 4****Course Outcome:**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	relate the genetics of microorganisms	1	Re
CO-2	recall the molecular mechanisms of microorganisms	1	Re
CO-3	explain all important topics to prepare for competitive exams	5	Un
CO-4	examine the history of molecular biology	2	An
CO-5	analyse about nucleic acids, their damage and repair mechanism	6	An
CO-6	compare all gene transfer methods	2	Ev

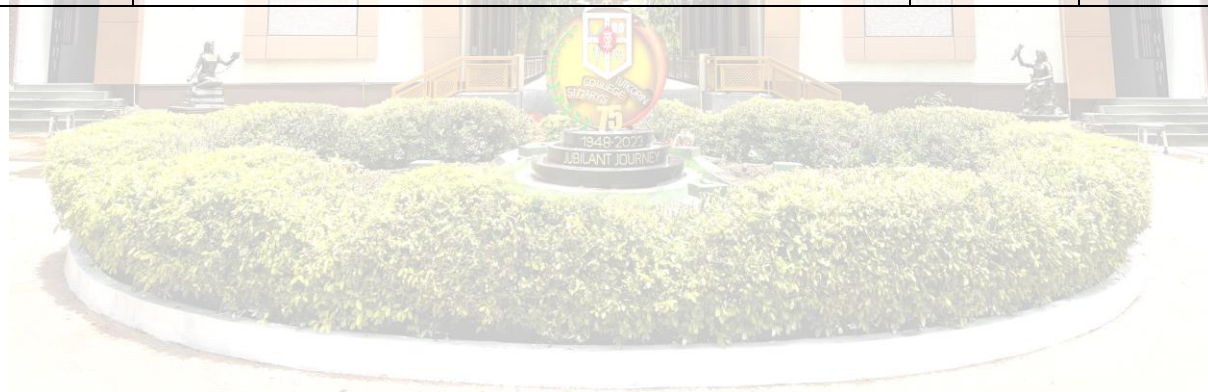


**SEMESTER-III****Core-X- Genetic Engineering**

<b>Course Code -21PMIC32</b>	<b>Hrs/Week:5</b>	<b>Hrs/Sem:75</b>	<b>Credits:4</b>
------------------------------	-------------------	-------------------	------------------

**Course outcomes:**

<b>C O No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO's Addressed</b>	<b>CL</b>
CO- 1	explain the knowledge about cloning	2	An,Un
CO -2	perceive the applications of genetic engineering in various fields	4	Un, Re
CO- 3	understands the hazardous and potential risk in releasing transgenic into environment	5	Un
CO -4	create the techniques used in genetic engineering	2	An, Re
CO -5	discuss the cloning techniques and the production of transgenic materials	4	Un,An
CO -6	understand the synthesis of genetically modified commercial products	4	Un



**SEMESTER –III****Core – XII****Research Methodology****Course Code : 21PMIC34****Hrs/Week: 4****Hrs/Sem: 60****Credits: 4****Course Outcome:**

CO No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyse the laboratory equipment's	2	An
CO-2	evaluate the rights granted by IPR	6	Ev
CO-3	determine the process involved in centrifugation and chromatography techniques	6	Ev
CO-4	estimate project writing method and to estimate Data's used in projects.	1	Ev
CO-5	identify the journals to publish articles	1	AP
CO-6	design article to present on seminar and the conference	5	Cr





SEMESTER –IV			
Core XV		Applied Microbiology	
Course Code: 21PMIC43	Hrs/Week: 4	Hrs/Sem: 60	Credits:4

**Course Outcomes:**

CO No	Upon completion of this course, students will be able to	PSO's Addressed	CL
CO-1	acquire basic knowledge on applied microbiology	4	Un
CO -2	explain the basics of composting technology	4	Un
CO-3	appreciate the production of biogas technology	4	An
CO-4	grasp the fundamental knowledge about mushroom cultivation	4	Un
CO-5	acquire basic knowledge about <i>spirullina</i> production	2	Ap
CO-6	gets knowledge about biodegradation.	4,2	Un



**Programme: B. Sc. Physics**

<b>SEMESTER - I</b>			
<b>Core I</b>		<b>Properties of Matter</b>	
<b>Code: 18UPHC11</b>	<b>Hrs/Week: 4</b>	<b>Hrs/Semester: 60</b>	<b>Credits: 4</b>

**Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	calculate the acceleration due to gravity at a place.	1	An
CO-2	define stress, strain, Hooke's law and Poisson's ratio	1	Re
CO-3	describe the fundamental concepts of stress and strain and the relationship between both through the stress-strain equations in order to solve the problems for simple tridimensional elastic modes	1	Un
CO-4	calculate the elastic constant values of materials which is necessary for beam construction.	1, 6	An
CO-5	sketch the uses of I-form girders	1	Ap
CO-6	describe the properties of fluids such as viscosity, surface tension and capillary rise.	1	Un
CO-7	evaluate the properties and utility of lubricants	1, 6	Ev
CO-8	calculate the surface tension of a liquid	1, 6	Ap

**SEMESTER – I****Core II Mechanics, Wave Oscillations and Acoustics****Code: 18UPHC12****Hrs/Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	discuss impulse and linear momentum, calculate the change in momentum of an object for the net force acting on the object	1	Un
CO-2	analyze the motion of the projectile that is projected with an initial velocity	1	An
CO-3	calculate the torque and angular momentum for a moving particle	1, 6	An, Ev
CO-4	locate the center of gravity, the line of gravity and the center of pressure of the objects	1, 6	Un, Ev
CO-5	understand the factors affecting atmospheric pressure , variation of atmospheric pressure with temperature, principle of barometer and working of different kinds of barometer	1	Un
CO-6	define simple harmonic motion and discuss the principle of simple harmonic motion and their types	1	Re, Un
CO-7	understand how sound is transmitted through building components	1	Un
CO-8	identity, discuss and resolve acoustical problems related to architectural acoustics and acoustic comfort	1, 6	Un, An

**SEMESTER I****Allied****Allied Chemistry I****Code :18UCPA11****Hrs/Week : 4****Hrs/ Sem : 60****Credits : 3****Course Outcome :**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	list the rules for filling of electron in orbitals, Recognize conductors, insulators and semiconductors, write the electronic configuration of elements	1, 4	Re, Ap
CO 2	identify methods to purify organic compounds Estimate the amount of Carbon, Hydrogen and sulphur in a sample	1,4,3,7	Un
CO 3	evaluate molecular weight of a chemical compound	1, 2	Cr
CO 4	correlate the importance of colloids in day to day life, develop a basic understanding of emulsions	1 , 2 , 3	An , Ev
CO 5	explain different types of molecular velocities and its significance	1 , 4	Un
CO 6	know basic terms associated with gaseous state and an insight into degrees of freedom and law of equipartition of energies	1.2, 3	Re
CO 7	identify fundamental particles of nuclear isotopes	1, 3, 4	Re
CO 8	learn the basic principles behind nuclear fusion and fission and enumerate its application	1, 2	An



SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER - II****Core III Thermal Physics and Statistical Mechanics****Code: 18UPHC21****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define temperature, pressure, closed system, reversible and irreversible process	1	Re
CO-2	understand the basic concepts of thermodynamics such as temperature, pressure, properties, closed system, reversible and irreversible process	1	Un
CO-3	understand the transfer of energy	1	Un
CO-4	demonstrate the experiment regarding the measurement of thermal conductivity and specific capacity	1, 2	An
CO-5	calculate the thermal conductivity of a bad conductor	1, 6	An
CO-6	understand the low temperature physics, concerned with the behavior of matter in the temperature regime where quantum effects are dominated	1	Un
CO-7	create an interest in field of research in low temperature physics	1	Cr
CO-8	employ Fermi-Dirac and Bose-Einstein statistics according to the spin of the particle and compare the three statistics	1	An, Ev

**SEMESTER – II****Core IV****Optics****Code: 18UPHC22****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the theory behind the important properties of light such as reflection, refraction, dispersion, interference, diffraction and polarisation.	1	Un
CO-2	calculate the focal length of lenses in contact and out of contact with each other	1, 6	An
CO-3	determine the refractive index and dispersive power of the material of the prism	1, 2, 6	Ev
CO-4	define the different types of aberrations in lenses and discuss the methods to reduce them	1	Re, Un
CO-5	describe the phenomenon of interference in reflected systems and calculate the refractive index of liquids by forming Newton's rings	1, 2, 6	Un, Ev
CO-6	calculate the thickness of a thin wire by forming interference fringes	1, 2, 6	Ev
CO-7	evaluate the dispersive power and resolving power of a grating and demonstrate experiments with a grating and find the wavelengths of the light used	1, 2, 6	Ev, An
CO-8	acquire knowledge of the polarisation of light and its changes upon reflection and transmission	1	Un

**SEMESTER II****Allied****Allied Chemistry II****Code : 18UCPA21****Hrs/Week : 4****Hrs/ Sem : 60****Credits : 3****Course Outcome :**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	Differentiate ores and minerals Explain the methods of purification of ores Know the extracting methods , properties and uses of titanium, vanadium ,thorium. Titanium tetrachloride, Vanadiumpentoxide, Thorium nitrate.	1	An,Un, Re
CO 2	Synthesise some industrially important organic compounds such as Freon , rayon , polyester , nylon , thiokol Dacron	1, 5	Ev
CO 3	Classify fuels and know its industrial uses	1, 4	Ap
CO 4	Identify the techniques for sterilising water for domestic use	1, 4	An
CO 5	Know the basics of abrasives	1,4	Re
CO 6	Know the principles of volumetric analysis	1,3 , 4	Re
CO 7	Assess error analysis	1	Cr
CO 8	Know the basic concepts of photochemistry and electrochemistry	1,3	Re



**SEMESTER III****Core V Electricity and Electromagnetism****Code: 18UPHC31****Hrs./Week : 4****Hrs./Sem : 60****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall Coulomb's law	1	Re
CO-2	discuss potential due to point charge	1	Un
CO-3	apply the principle of potentiometer to measure current and resistance	1,4,6	Ap
CO-4	compare self inductance and mutual inductance	1,4,6	Ev
CO-5	describe eddy current	1	Un
CO-6	construct LCR series and parallel resonance circuit	1,4,6	Cr
CO-7	study the uses of transformer	1,4,6	Ap
CO-8	formulate Maxwell's equations for the propagation of electromagnetic waves	1	Cr

Semester –III			
Allied		Allied Mathematics – I	
Code : 18UMAA31	Hrs/week :3	Hrs/Sem :45	Credits :2

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	form the equations from the given roots.	1	Cr
CO-2	Approximate solutions of equations by applying Horner's method and Newton's method	1	Un ,Ev
CO-3	transform equations by increasing, decreasing and multiplying the roots of the equation.	3	An
CO-4	develop and apply concepts of expressions and equations to investigate and describe relationships	7	An
CO-5	demonstrate problem solving skills	3, 8	Cr
CO-6	evaluate eigen values and eigen vectors of square matrices and make use of the properties of determinants in their calculation.	1	Un, Ev
CO-7	calculate the radius of curvature by differentiation	1,3	Un, Ev
CO-8	calculate centre and circle of curvature.	1,3	Ev

**SEMESTER – III****Allied****Allied Mathematics – II****Code : 18UMAA32****Hrs / Week: 3****Hrs / Semester: 45****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	compute the curl and the divergence of vector fields	1,3	Cr
CO-2	compute the gradient of a scalar valued function	1,3	Cr
CO-3	solve Differential Equations	1	Ev
CO-4	interpret basic definitions and terminology associated with differential equations and their solutions	3	Un
CO-5	classify the differential equations with respect to their order and linearity	1	An
CO-6	solve linear differential equations	1	Ev
CO-7	find complementary functions	1	Re
CO-8	evaluate particular integrals of the form $e^{ax}$ , $\sin ax$ , $\cos ax$ , $x^m$ and $e^{ax}f(x)$	1,3	An,Ev

SEMESTER III			
NME I		Applied Physics I	
Code : 18UPHN31	Hrs/Week : 2	Hrs/Sem : 30	Credits : 2

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall the tools used in the home	3	Re
CO -2	discuss the systems of domestic wiring	3	Un
CO -3	explain the principle of Air Conditioning	3	Un
CO -4	sketch the refrigerating cycle	3	Ap
CO -5	describe the function of a compressor	3	Un
CO -6	understand the theory behind the important properties of light such as reflection, refraction , interference and total internal reflection	1,3	Un
CO -7	discuss the types of optical fibers	2,3	Ev
CO -8	list out the applications of lasers	3	Re



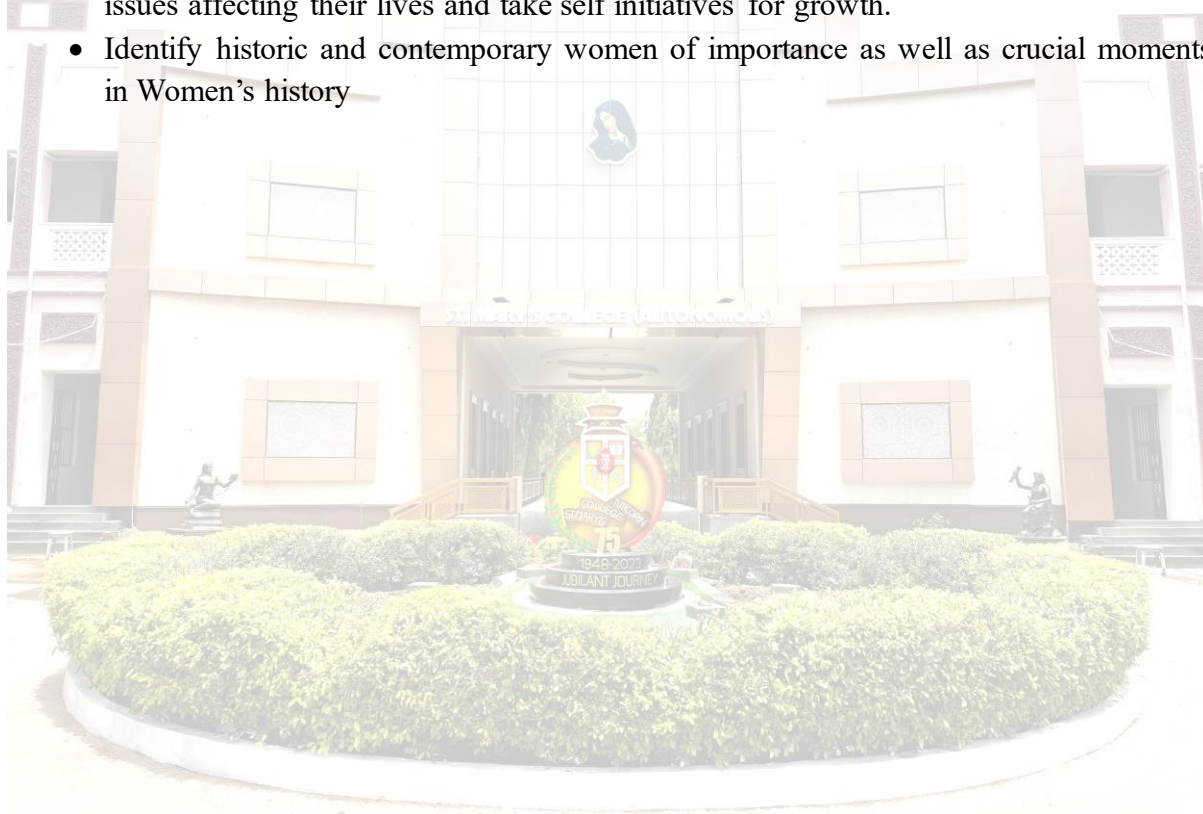
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER IV****Core VI****Electronics and Communication****Code : 18UPHC41****Hrs/Week : 4****Hrs/Sem : 60****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall semiconductors	2	Re
CO -2	design a voltage regulator using Zener diode.	2,4,6	Cr
CO -3	construct Colpitt's oscillator, Hartley oscillator.	2,4,6	Cr
CO -4	design a single stage transistor amplifier and an oscillator	2,4,6	Cr
CO -5	list out the types of networks	2	Re
CO -6	differentiate monostable and bistable multivibrator	2,4,6	An
CO -7	describe Satellite Communication	2	Un
CO -8	apply the principle of Doppler effect to Radar	2,3	Ap

**SEMESTER - IV****Allied****Allied Mathematics – III****Code : 18UMAA41****Hrs / Week: 3****Hrs / Semester: 45****Credits: 2****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the difference between partial differential equation and ordinary differential equation	1	An
CO-2	form the partial differential equation	1	Cr
CO-3	classify various types of partial differential equations	3	Un
CO-4	apply Laplace transform on functions	1	An
CO-5	understand inverse Laplace transform	1	Un
CO-6	solve differential equation using Laplace transform	1	An
CO-7	identify Beta integrals and Gamma integrals	3	An
CO-8	understand the concept of Beta and Gamma functions.	1	Un

SEMESTER – IV			
Allied		Allied - Mathematics – IV	
Code : 18UMAA42	Hrs / Week: 3	Hrs / Semester: 45	Credits: 2

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	use the Jacobian to change variables to ease integration	1,3	Un
CO-2	evaluate line integrals	3	Ev
CO-3	set up the regions and integrate double integrals in rectangular and polar coordinates	3	Re, Ev
CO-4	set up and evaluate triple integrals	3	R,E
CO-5	use Green's theorem to evaluate line integrals along simple closed contours on the plane.	1	Cr
CO-6	apply Stokes' theorem to compute line integrals along the boundary of a surface.	1	An
CO-7	use Stokes' theorem to give a physical interpretation of the curl of a vector field.	1,3	An
CO-8	use the divergence theorem to give a physical interpretation of the divergence of a vector field.	1,3	An



**SEMESTER IV****Core Skill Based Physics for Competitive Examinations****Code : 18UPHS41****Hrs./Week : 4****Hrs./Sem : 60****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall units and dimensions	8	Re
CO -2	solve problems in gravitation and escape velocity	1,8	An
CO -3	solve problems in magnetic effect of current	1,8	An
CO -4	solve problems in Surface Tension and Viscosity	1,8	An
CO -5	solve problems related to Kirchhoff's laws & Steady current	1,8	An
CO -6	solve problems in Electrostatics & Electric potential	1,8	An
CO -7	solve problems in Electromagnetic Induction	1,8	An
CO -8	solve problems in Zener diode & Transistor	2,8	An

**SEMESTER V****Common Core Core VII – Solid state and Material Science****Code : 18UPCC51****Hrs/Week : 6****Hrs/Sem :90****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the basic symmetry elements and operations of crystals	1, 2	Un
CO- 2	distinguish the types of crystals and enumerate the various crystal imperfections	3,4	An
CO-3	get a clear knowledge about metallic glasses, ceramics and biomaterials.	1, 3, 5,7, 8	Re
CO -4	justify the wave nature of matter and its experimental study	1,3	Ev
CO -5	apply Bragg's law for x –ray study	2	Ap
CO -6	distinguish magnetic materials based on susceptibility	1,2	An
CO -7	use magnetic materials in various field	1,2	Ap
CO -8	discuss the synthesis methods of nano materials	2,3	Un

SEMESTER V			
Core VIII		Digital Electronics	
Code : 18UPHC52	Hrs/Week : 5	Hrs/Sem : 75	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	define binary numbers	2	Re
CO –2	explain number system	2	Un
CO –3	construct logic gates	2, 4,6	Cr
CO –4	recall the fundamental concepts and techniques used in digital electronics	2	Re
CO –5	analyze the construction of shift register	2,5	An
CO –6	design registers, interpret logic functions, circuits and truth tables.	2, 4	Cr
CO –7	design counters, understand the concepts of decimal number system.	2,5	Cr
CO –8	differentiate A/D and D/A conversions	2, 4	An

SEMESTER V			
Core IX		Computational Physics	
Code : 18UPHC53	Hrs/Week : 5	Hrs/Sem : 75	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	utilize their knowledge of C++ programming language and write programs for solving various problems in physics	6,8	Ap
CO –2	design a program for operator overloading	6	Cr
CO –3	distinguish between one dimensional and two dimensional arrays	6	An
CO –4	define various types of constructors	6	Re
CO –5	design a simple C++ program for function	6	Cr
CO –6	define a class	6	Re
CO –7	differentiate constructors and destructors	6	An
CO –8	solve the problem in Bisection method	6, 8	An



## SEMESTER V

SEMESTER V			
Core Integral I		Renewable Energy Sources	
Code :18UPHI51	Hrs/Week : 4	Hrs/Sem : 60	Credits : 4

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	construct solar ponds for water desalination, solar cookers and solar green houses	7, 5	Cr
CO -2	assess the working of windmills used for power generation	7	Ev
CO -3	list the renewable energy sources available in surplus	7	Re
CO -4	explain different types of solar water heaters	7,5	Un
CO -5	sketch out the classifications of WEC system	7	Ap
CO -6	recall Green house effect	7	Re
CO -7	discuss Energy audit	7	Un
CO -8	design KVIC plants for bio gas generation	7	Cr

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

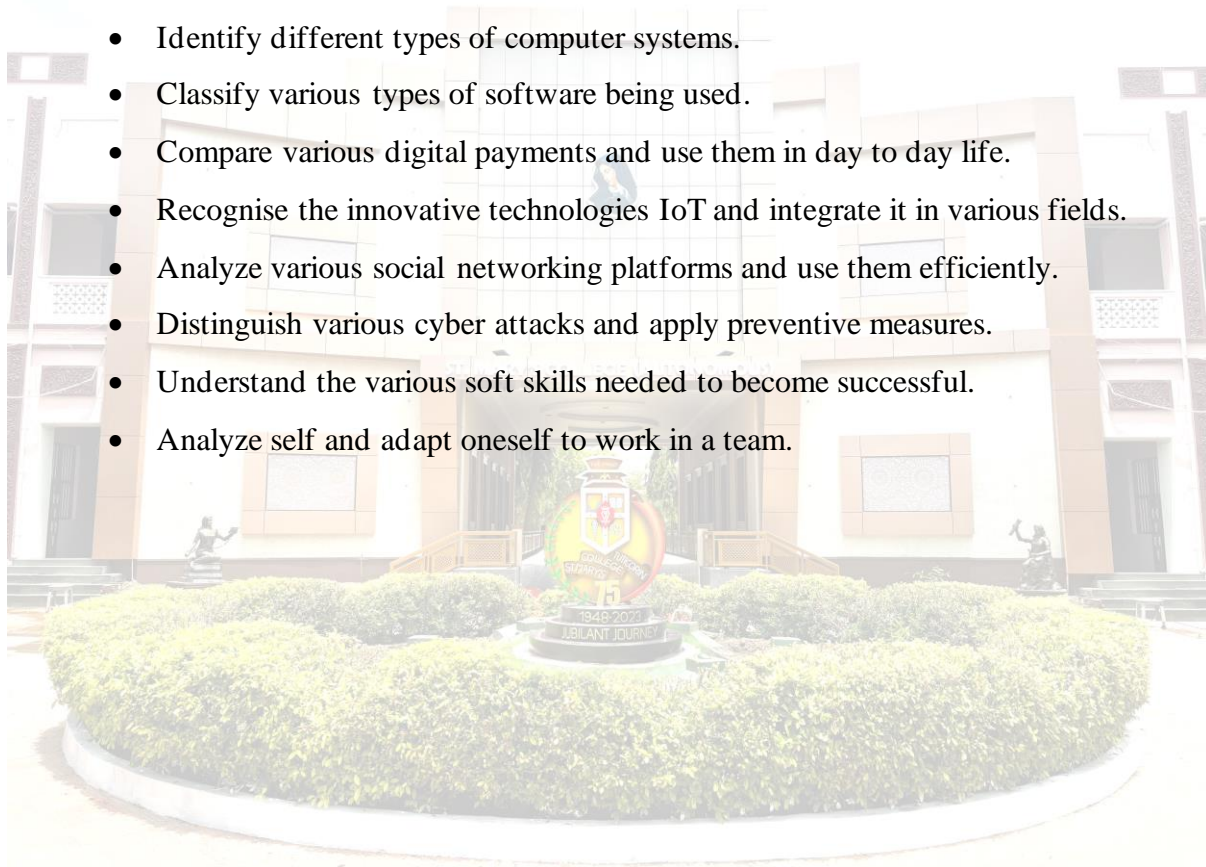
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



SEMESTER VI			
Core XI		Nuclear and Particle Physics	
Code :18UPHC62	Hrs/Week : 4	Hrs/Sem : 60	Credits : 4

**Vision:** To enrich our students with the knowledge of nuclear and particle physics

**Mission:** To study the properties of  $\alpha, \beta, \gamma$  rays, process of radioactivity and its applications and various detectors

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	recall the structure of nuclei	2	Re
CO –2	understand simple nuclear models	2	Un
CO –3	explain properties of $\alpha, \beta, \gamma$ rays and their decay	2	Un
CO –4	analyze the key features of nuclear fission and its applications	2	An
CO –5	analyze the key features of nuclear fusion and its applications	2	An
CO –6	understand the principle and working of particle accelerators	2	Un
CO –7	understand the principle and working of particle detectors	2	Un
CO –8	describe the constituent particles in the electron, proton and neutron	2	Un

**SEMESTER VI****Core XII Opto Electronics & Fibre Optic Communication****Code :18UPHC63****Hrs/Week : 4****Hrs/Sem : 60****Credits : 4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO -1	recall the basic principles of semiconductors	2	Re
CO -2	understand the formation of energy bands of semiconductors	2	Un
CO -3	list out the optical characteristics of semiconductors	2	Re
CO -4	explain the principle and working of optical sources	2	Un
CO -5	categorise the optical detectors and their principles	2	An
CO -6	analyze and classify the structure of optical fibres, its types and various optical losses	2	An
CO -7	understand the basics of signal propagation through optical fibres	2	Un
CO -8	understand the types and various optical losses	2	Un



SEMESTER VI			
Core Integral II		Advanced Physics	
Code :18UPHI61	Hrs/Week : 4	Hrs/Sem : 60	Credits : 4

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	recall laser and its applications in medicine industry	3	Re
CO –2	list out the applications of Holography	3	Re
CO –3	solve arithmetic operations using 8085	5,6	An
CO –4	draw 8085 MPU	5,6	An
CO –5	formulate a program to write two hexadecimal numbers using 8085	5,6	Cr
CO –6	discuss BCS theory	2	Un
CO –7	assess the usage of Superconductors	3	Ev
CO –8	list the materials and its properties for nuclear and space applications	2	Re

## SEMESTER- I

### Core I Mechanics and Properties of Matter

Course Code : 21UPHC11

Hours/Week: 6

Hrs/ Semester: 90

Credits : 5

#### Course Outcomes:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss the principle of conservation of energy and linear momentum (K2)	1	Un
CO-2	calculate the change in momentum of an object for the net force acting on the object (K3)	1	Ap
CO-3	analyse the motion of the projectile (K4)	1	An
CO-4	outline the fundamental concepts of stress and strain (K4)	1	An
CO-5	prove the relation connecting the three modulo of elasticity (K5)	1	Ev
CO-6	recall viscosity, coefficient of viscosity and surface tension (K1)	1	Re

<b>SEMESTER- I</b>			
<b>SEC I Professional English for Physics – I</b>			
<b>Course Code: 21UPHPE1</b>	<b>Hrs./Week : 2</b>	<b>Hrs./Sem : 30</b>	<b>Credits : 2</b>

**COURSE OUTCOMES:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	draw flowcharts and mind maps (K1)	5	Re
CO-2	apply their own ability to improve their own competence in using the language (K3)	5	Ap
CO-3	criticise the use of language to speak with confidence (K5)	5	Ev
CO-4	discuss the importance of reading for life (K2)	5	Un
CO-5	write independently unfamiliar texts with comprehension (K1)	5	Re
CO-6	outline the importance of writing in academic life (K4)	5	An

SEMESTER- II			
CORE II		Thermal Physics and Optics	
Course Code: 21UPHC11	Hours/Week: 6	Hrs/ Semester: 90	Credits : 5

### COURSE OUTCOMES:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the laws of thermodynamics to understand the concepts of transport phenomenon (K1)	1	Un
CO-2	discuss the transfer of energy through conduction, convection and radiation (K2)	1	Re
CO-3	demonstrate and determine the thermal conductivity of a bad conductor (K3)	1	Ap
CO-4	categorize the different types of aberrations in lenses (K4)	1	An
CO-5	evaluate the thickness of a thin wire by forming interference fringes (K5)	1	Ev
CO-6	summarise the knowledge on polarisation of light and its changes upon reflection and transmission (K2)	1	Un



SEMESTER- II			
SEC II		Professional English for Physics – II	
Course Code: 21UPHPE2	Hrs./Week : 2	Hrs./Sem : 30	Credits : 2

### COURSE OUTCOMES:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss in small groups based on the listening and reading passages (K2)	5	Un
CO-2	identify the articles, prepositions and pronouns in the given passages (K1)	5	Re
CO-3	apply the acquired vocabulary knowledge in their writing skills (K3)	5	Ap
CO-4	simplify the given comprehension (K4)	5	An
CO-5	argue on digital competence for academic and professional life (K5)	5	Ev
CO-6	write slogans and captions (K1)	5	Re

SEMESTER III			
Core III		Electricity and Electromagnetism	
Course Code: 21UPHC31	Hrs./Week : 4	Hrs./Sem : 60	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall Current, Ohm's law and Kirchoff's law (K1)	1	Re
CO-2	apply Kirchoff's law to Wheatstone's network (K3)	1,6	Ap
CO-3	apply the principle of potentiometer to measure current and resistance (K3)	1,6	Ap
CO-4	compare self inductance and mutual inductance (K4)	1,6	An
CO-5	compare LCR series and parallel resonance circuit (K2)	1,6	Un
CO-6	evaluate the value of capacitance using Desauty's bridge (K5)	1,6	Ev

**SEMESTER – III****Part III****Allied Mathematics – I****Code : 21UMAA31****Hrs / Week: 6****Hrs / Semester: 90****Credits: 4****Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>POs addressed</b>	<b>CL</b>
CO-1	the equations from the given roots & approximate solutions of equations by applying Horner's method and Newton's method	1	Un
CO-2	develop and apply concepts of expressions and equations to investigate and describe relationships	5	An
CO-3	evaluate eigen values and eigen vectors of square matrices and make use of the properties of determinants in their calculation.	3	Ev
CO-4	calculate the radius of curvature, centre and circle of curvature.	5	Ev
CO-5	compute the gradient of a scalar valued function ,curl,and divergence of vector fields	3	Cr
CO-6	interpret basic definitions and classify the differential equations with respect to their order and linearity	1	Un

SEMESTER III			
NME I		Applied Physics I	
Course Code: 21UPHN31	Hrs./Week : 2	Hrs./Sem : 30	Credits : 2

**Course Outcome:**

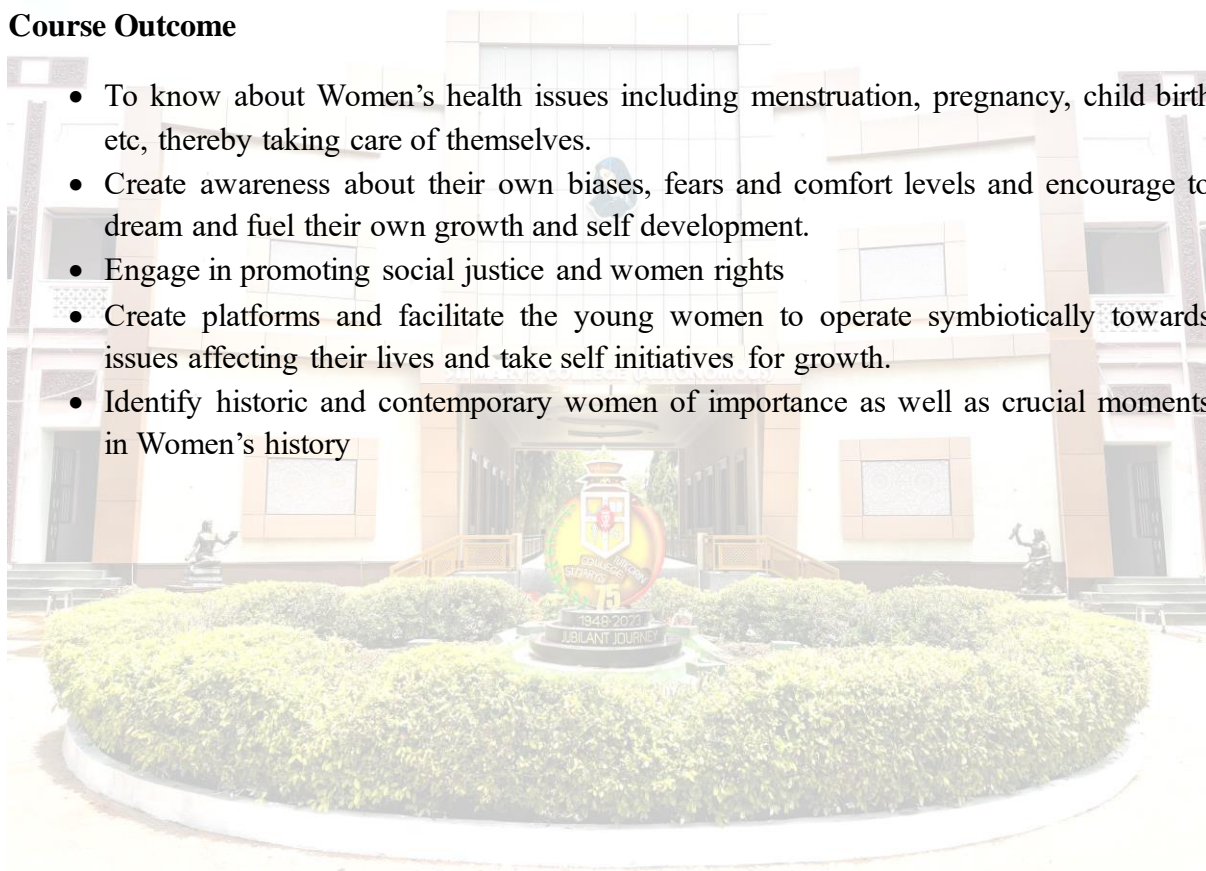
CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	identify tools used in the home (K1)	4	Re
CO –2	discuss the systems of domestic wiring (K2)	4	Un
CO –3	sketch the refrigerating cycle (K4)	4	An
CO –4	explain the function of a compressor (K2)	4	Un
CO –5	classify the types of emission of laser (K3)	4	Ap
CO –6	apply the application of laser in various fields (K3)	4	Ap



Semester – III			
Women's Synergy			
Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2

### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



SEMESTER IV			
Core IV		Electronics and Communication	
Course Code: 21UPHC41	Hrs/Week:4	Hrs/Sem:60	Credits:4

**Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	recall semiconductors (K1)	2	Re
CO –2	explain a universal divider bias (K2)	2	Un
CO –3	construct inverting and non inverting amplifier (K3)	2, 6	Ap
CO –4	summarize the types of networks (K2)	2	Un
CO –5	prove Thevenin's and Norton's theorem (K5)	2, 6	Ev
CO –6	outline the principle of amplitude modulation reception (K4)	2	An

SEMESTER-IV			
Part III		Allied Mathematics-II	
Code : 21UMAA41	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	POs addressed	CL
CO-1	identify the difference between partial differential equation and ordinary differential equation	1	An
CO-2	classify various types of partial differential equations and form the partial differential equation	3	Un
CO-3	solve differential equations using Laplace transform	5	An
CO-4	set up the regions and integrate double integrals in rectangular and polar coordinates.	2	Ev
CO-5	use Green's theorem to evaluate line integrals along simple closed contours of the plane	3	Cr
CO-6	identify and understand the concept of Beta integrals and Gamma integrals	2	Ap

## SEMESTER IV

**Skill Based Elective      Physics for Competitive Examinations**

**Course Code : 21UPHS41**

**Hrs./Week :2**

**Hrs./Sem : 30**

**Credits :2**

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	evaluate the problems in gravitation and escape velocity (K5)	4	Ev
CO -2	recall surface tension and viscosity (K1)	4	Re
CO -3	discuss the laws of thermodynamics (K2)	4	Un
CO -4	distinguish the interference from diffraction (K4)	4	An
CO -5	apply Kirchhoff's laws to solve problems (K3)	4	Ap
CO -6	explain problems in electromagnetic induction (K2)	4	Un



## SEMESTER V

**Core V (Common Core)**

**Material Science**

**Course Code : 21UPCC51**

**Hrs./Week :6**

**Hrs./Sem :90**

**Credits :5**

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	identify the basic symmetry elements and operations of crystals, distinguish the types of crystals and enumerate the various crystal imperfections (K1)	2	Re
CO – 2	rank the properties of new materials like metallic glasses, shape memory alloys, high temperature materials, smart materials and biomaterials and apply them in various walks of life (K5)	2	Ev
CO – 3	justify the wave nature of the matter and its experimental study(K5)	2	Ev
CO – 4	distinguish magnetic materials based on susceptibility(K4)	2,1	An
CO – 5	summarise the uses of magnetic materials in various field (K2)	2,1	Un
CO – 6	outline the synthesis methods of nano materials(K4)	2,4	An

SEMESTER V			
Core VI		Digital Electronics	
Course code: 21UPHC51	Hrs./Week : 5	Hrs./Sem : 75	Credits :5

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	recall binary numbers (K1)	2,6	Re
CO –2	summariase the functions of encoder and decoder (K2)	2,6	Un
CO –3	construct logic gates (K3)	2, 6	Ap
CO –4	analyse the construction of counters and shift register (K4)	2,6	An
CO –5	distinguish A/D from D/A conversions (K4)	2, 6	An
CO-6	prove De Morgan's laws (K5)	2,6	Ev

SEMESTER -V			
Core VII		Computational Physics	
Course Code : 21UPHC52	Hrs./Week : 5	Hrs./Sem : 75	Credits : 5

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	describe programs for solving various problems in physics (K1)	4	Re
CO -2	distinguish between one dimensional and two dimensional arrays (K4)	4	An
CO -3	summarizes the various types of constructors (K2)	4	Un
CO -4	design a simple c++ program for function (K1)	4	Re
CO -5	test the program to write two hexadecimal numbers using 8085 (K5)	4	Ev
CO -6	solve arithmetic operations using 8085 (K3)	4	Ap

SEMESTER V			
Core Elective		Renewable Energy Sources	
Course Code: 21UPHI51	Hrs/Week:4	Hrs/Sem:60	Credits:4

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	construct solar cooker (K3)	3	Ap
CO –2	analyse the working of windmills used for power Generation (K4)	3	An
CO –3	list the renewable energy sources available in surplus (K1)	3	Re
CO –4	explain different types of solar water heaters (K2)	3	Un
CO –5	sketch out the classifications of wave system (K3)	3	Ap
CO –6	recall green house effect (K1)	3	Re



SEMESTER – V			
Core Elective		Mathematical Physics	
Course Code: 21UPHE52	Hrs / Week: 4	Hrs / Semester: 60	Credits: 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall scalar and vector function (K1)	6	Re
CO-2	discuss curl and divergence of a vector function (K2)	6	Un
CO-3	apply the fundamental properties of determinants (K3)	6	Ap
CO-4	evaluate problems in Fourier series (K5)	6	Ev
CO-5	analyse problems in Fourier transform (K4)	6	An
CO-6	discuss the properties of Laplace transform (K2)	6	Un

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

**Code : 21UCSB51**

**Hrs / Week : 2**

**Hrs / Sem : 30**

**Credits : 2**

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.

SEMESTER VI			
Core VIII		Relativity and Quantum Mechanics	
Course Code :21UPHC61	Hrs./Week : 5	Hrs./Sem : 75	Credits : 4

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	describe Michelson –Morley experiment (K1)	2	Re
CO -2	summarise the postulates of special theory of relativity (K2)	2	Un
CO -3	outline the De Brogli's hyposthesis for the dualistic nature of matter waves (K4)	2	An
CO -4	relate the uncertainty condition between displacement and momentum; energy and time (K3)	2	Ap
CO -5	prove Bohr's quantization condition for angular momentum (K5)	2	Ev
CO -6	apply to Schrodinger equation to 1D and 3D physical (K3)	2	Ap

SEMESTER VI			
Core IX		Atomic and Nuclear Physics	
Course Code : 21UPHC62	Hrs./Week : 4	Hrs./Sem : 60	Credits :3

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO –1	recall the structure of atoms (K1)	2	Re
CO –2	understand the structure of nucleus and nuclear models (K2)	2	Un
CO –3	distinguish the properties of $\alpha$ , $\beta$ , $\gamma$ rays and their decay (K4)	2	An
CO –4	analyze the key features of nuclear fusion and fission (K3)	2	Ap
CO –5	evaluate half life, mean life, amount of substance left after disintegration (K5)	2	Ev
CO –6	discuss the principle and working of particle accelerators and detectors (K2)	2	Un



**SEMESTER VI****Core X Opto Electronics & Fibre Optic Communication****Course Code : 21UPHC63****Hrs/Week:4****Hrs/Sem:60****Credits:4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall the basic principles of semiconductors (K1)	2	Re
CO -2	explain the formation of energy bands of semiconductors (K2)	2	Un
CO -3	outline the optical characteristics of semiconductors (K4)	2	An
CO -4	classify optical detectors (K3)	2	Ap
CO -5	analyze and classify the structure of optical fibres, its types and various optical losses (K4)	2	An
CO -6	outline the different types of optical losses (K4)	2	An

SEMESTER VI			
Core XI		Advanced Physics	
Course Code :21UPHC64	Hrs./Week : 4	Hrs./Sem : 60	Credits : 4

### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall the fundamentals of laser (K1)	4	Re
CO -2	summarise the applications of laser drilling (K2)	4	Un
CO -3	classify the polymers(K3)	4	Ap
CO -4	outline the structure of polymers (K4)	4	An
CO -5	criticize BCS theory (K5)	4	Ev
CO -6	discuss the materials and their properties for nuclear and space applications (K2)	4	Un

**Programme: M.Sc. Physics**

<b>SEMESTER – I</b>			
<b>Core – I</b>		<b>Classical Mechanics</b>	
<b>Code : 19PPHC11</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Semester: 90</b>	<b>Credits:4</b>

**Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	define and understand basic concepts related to continuous mechanical system.	1	Re
CO - 2	explain the motion of bodies under the influence of the system of force.	5	Un
CO - 3	understand the method of separation of variables	2	Un
CO - 4	estimate the motion of rigid bodies, molecules, planets, satellites and ships by studying Euler's angles.	3	Ev
CO - 5	interpret extremely accurate results when studying large objects and speeds approaching the speed of light.	3	Ap
CO - 6	explain the difference between Lagrangian and Hamiltonian formulation.	1	Un
CO - 7	understand the planar and spatial motion of rigid body.	1	Un
CO - 8	describe problems using their knowledge and skills in classical mechanics.	2	Un

SEMESTER - I			
CORE – II		Mathematical Physics – I	
Code : 19PPHC12	Hrs/Week: 6	Hrs/Semester: 90	Credits:4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	evaluate the area of irregular shape by Green's theorem.	2	Ev
CO 2	recall the basic and the special types of matrices.	1	Re
CO 3	understand the concepts of feedback control systems with finitedimensional vector spaces.	7	Un
CO 4	apply special functions for Wireless communication and alternating current transmission.	2	Ap
CO 5	understand the geometrical interpretation of complex numbers.	1	Un
CO 6	explain the characteristic equation of a matrix using Cayley Hamilton Theorem.	3	Ev
CO 7	recall the incompleteness of the statistical interpretations relating to the summing of an infinite number of probabilities to yield a meaningful solution.	2	Re
CO 8	apply group theory to various disciplines of Physics.	3	Ap





SEMESTER - I			
Core - III		Electronics and Experimental Methods	
Code : 19PPHC13	Hrs/Week: 6	Hrs/Semester: 90	Credits:4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	discuss the working principle of Tunnel Diode, photodiode, LED, LCD, photo conductor and Gunn diode	1	Un
CO - 2	define Hall Effect	1	Re
CO - 3	sketch waveform generators such as Square wave generator, triangular wave generator and Schmitt trigger	1, 3	Ap
CO - 4	discuss the functions of registers and counters	1	Un
CO - 5	describe the different types of registers	1	Un
CO - 6	explain the working of D/A and A/D converters	1	Un
CO - 7	identify the working mechanism of different types	1	Un
CO - 8	recognise intrinsic and extrinsic semiconductors	1	Un



SEMESTER - I			
Core - IV		Crystal Growth & Thin films	
Code :19PPHC14	Hrs/Week: 6	Hrs/Semester:90	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	generate an understanding of self-assembly during the process of growth	1	Un
CO - 2	apply the process skills of scientific inquiry during experimentation	4	Ap
CO - 3	understand the foundation of SEM, TEM	4	Un
CO - 4	apply the techniques of SEM and TEM to their own research projects	5	Ap
CO - 5	distinguish the differences and similarities between different deposition techniques.	1	An
CO - 6	categorize selection of deposition techniques for various applications	1	An
CO - 7	use more techniques for the preparation of crystals and thin films	4	Ap
CO - 8	recognise appropriate material for the fabrication of a device	4	Un



SEMESTER – II			
Core VII		Nanoscience and Technology	
Code : 19PPHC21	Hrs / Week : 5	Hrs / Semester : 75	Credits : 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	recall a thorough knowledge of basic underline disciplines of nanoscience and nanotechnology	4	Re
CO - 2	explain the preparation, characterization and properties of nanomaterials	6	Un
CO - 3	analyze the types and properties of carbon nanotubes	1	An
CO - 4	assimilate existing and new concepts, methodology and researches and apply them in their academic research environment	7	Ev
CO - 5	aware of challenges, risks and promises of nano technological development	6	An
CO - 6	synthesise the nanomaterials by physical, chemical and biological methods and evaluate their properties.	6	Ev
CO - 7	characterise the synthesized nanomaterials by various techniques.	5	Ev
CO - 8	apply the nanomaterials in energy storage, food and in day-to-day life.	8	Ap

SEMESTER – II			
Core VIII		Mathematical Physics II	
Code : 19PPHC22	Hrs/Week: 5	Hrs/Semester: 75	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	analyse the experimental data with the aid of Fourier transform	4	An
CO - 2	understand the basic of tensor calculus and to describe motion and deformation of body	1	Un
CO - 3	recall the basic notations of generating functions and special functions	1	Re
CO - 4	apply computational techniques to solve a wide range of numerical problems arising in physics	2	Ap
CO - 5	explain the concepts of Laplace Integral	1	Un
CO - 6	solve mathematical problems arising in physics by a variety of mathematical techniques.	2	Cr
CO - 7	employ the knowledge of critical thinking and problem solving	5	Ap
CO - 8	employ correct method to solve a particular problem	2	Ap





SEMESTER - II			
Core IX		Electromagnetic Theory	
Code : 19PPHC23	Hrs/Week: 5	Hrs/Semester: 75	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	recall the fundamental concepts of electromagnetic theory	1	Re
CO - 2	compare electrostatics with magnetostatics	1	Un
CO - 3	construct Maxwell's equations and identify each mathematical operator and physical quantity in the equations	3	Ap
CO - 4	Formulate potential problems within electrostatics, magnetostatics	2	Cr
CO - 5	analyze different waves and conduct a mock trial electromagnetic radiation	5	An
CO - 6	summarize the types of wave guides	1	Un
CO - 7	distinguish transmission lines and waveguides and analyze propagation of signal in different modes	1	An
CO - 8	obtain solutions for the problems in electromagnetic theory	2	Cr

SEMESTER - II			
Core X	Microprocessor and Microcontroller		
Code :19PPHC24	Hrs/Week: 5	Hrs/Semester: 75	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	Understand the architectures and instruction sets	1	Un
CO - 2	Understand and explain bus transactions, memory organisation and address decoding, basic I/O interfaces and port addressing	1	Un
CO - 3	Apply and implement learned algorithm design techniques and data structures to solve the problems	2	Ap
CO - 4	Understand the interfacing of peripheral devices like I/O ports, keyboards, displays, ADCs, DACs, stepper motor	1	Un
CO - 5	Recall concepts associated with interfacing a microprocessor to memory and to I/O devices	6	Re
CO - 6	Understand how to control components of a microprocessor based system through the use of interrupts	4	Un
CO - 7	Recall a microprocessor programming model at a level that enables to write assemble language programs for the processor meeting given specifications	6	Re
CO - 8	Understand the popular 8051 Microcontroller, the processor family and ARM Architecture	1	Un

SEMESTER - III			
Core XII		Quantum Mechanics -I	
Code :19PPHC31	Hrs/Week: 6	Hrs/Semester: 90	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	recall Schrodinger equation	1	Re
CO 2	describe Ehrenfest's theorem and its verification	1	Un
CO 3	discuss Heisenberg Uncertainty principle	1	Un
CO 4	evaluate the commutation relations between the various quantum mechanical operators	1	Ev
CO 5	list the properties of Ket and Bra vectors	1	Re
CO 6	discuss the linear harmonic oscillator problem using wave formalism and matrix formulation	2	Un
CO 7	interpret equations of motion in the Schrodinger picture, Heisenberg picture and Interaction picture	1, 2	Ap
CO 8	explain Schrodinger picture, Heisenberg picture and Interaction picture	1	Un



SEMESTER – III			
Core XIII		Atomic and Molecular Spectroscopy	
Code :19PPHC32	Hrs/Week: 6	Hrs/Semester: 90	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	explain the structure of atoms and the origin of the observed spectra	1	Un
CO - 2	interpret rotational spectra, get information about molecular dimension and atomic masses	4	Un
CO - 3	explain pure rotational Raman spectra and understand the techniques in instrumentation	3	Un
CO - 4	apply knowledge of Mossbaur spectroscopy in solid state physics and nanotechnology	4	Ap
CO - 5	assess how nuclear spins are affected by magnetic field and able to explain what happens when radio frequency radiation is observed	1	Ev
CO - 6	recall the basic hydrogen spectra	1	Re
CO - 7	explain the key properties of many electron atoms and the importance of the Pauli's exclusion principle	1	Ev
CO - 8	understand problems in atomic and molecular physics	2	Un



SEMESTER - III			
Core XIV		Thermodynamics and Statistical Mechanics	
Code : 19PPHC33	Hrs/Week: 6	Hrs/Semester: 90	Credits:4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	understand working knowledge of the zeroth, first, second and third law of thermodynamics	1	Un
CO - 2	apply statistics in different systems containing atoms and molecules	2	Ap
CO - 3	demonstrate the partition function for the microcanonical, canonical, grand canonical ensemble	1	Un
CO - 4	recall the loss of thermodynamics and equipartition theorem from the statistical description using microstates	1	Re
CO - 5	extend knowledge about phase transitions and fluctuations in ensembles	5	Un
CO - 6	apply energy changes in chemical reaction using the first law of thermodynamics	2	Ap
CO - 7	understand the Statistical properties of Random Walks	1	Un
CO - 8	determine the physical properties of the system using various correlation functions in Ising Model	6	Ev

SEMESTER – IV			
CORE XVIII		Quantum Mechanics -II	
Code :19PPHC41	Hrs/Week: 5	Hrs/Semester: 75	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	Describe time independent perturbation theory and its application to the first order Stark effect in Hydrogen atom	1	Re
CO 2	Discuss time dependent perturbation theory and transition probability	1	Un
CO 3	Describe Einstein coefficients	2	Un
CO 4	Define classical scattering cross section	1	Re
CO 5	Describe scattering by a square well potential using Born approximation and Partial wave analysis	1	Un
CO 6	Define Identical particles, symmetric and antisymmetric wave functions	1	Re
CO 7	Explain Dirac's equation for a free particle	1	Ev
CO 8	Explain spin of a Dirac particle	1	Ev

SEMESTER - IV			
Core XIX		Condensed Matter Physics	
Code :19PPHC42	Hrs/Week: 5	Hrs/Semester: 60	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	Recall about the crystal structure and degree of ordering to atom binding and packing	1	Re
CO 2	Compare the Energy Bands and the number of orbitals	5	Un
CO 3	Explain the physics of different types of bonds in crystalline structure	1	Un
CO 4	Classify condensed matter upon its degree of order with emphasis on scattering experiments	5	Un
CO 5	Explain the effective electron mass and apply it to describe electron dynamics in semiconductors	1	Un
CO 6	Estimate the thermal ionization of donors and acceptors	4	Ev
CO 7	Apply the knowledge of magnetism to explain natural physical process and related technological advances	2	Ap
CO 8	Assess ferromagnetic order from ant ferromagnetic order	4	Ev

SEMESTER - IV			
Core - XX		Nuclear and Particle Physics	
Code :19PPHC43	Hrs/Week: 5	Hrs/Semester: 75	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	List the basic atomic properties of nuclei	1	Re
CO 2	Classify the different types of nuclear reactions	5	Un
CO 3	Explain the different types of nuclear models and their properties	6	Un
CO 4	Discuss the nuclear forces and the theories related to it	1	Un
CO 5	Classify the types of elementary particles	1	Un
CO 6	Distinguish the fission and fusion	1	An
CO 7	Understand the deuteron properties and reactions	2	Un
CO 8	Explain the origin of various terms in nuclear physics	1	Un



SEMESTER - IV			
Elective - I      A		Bio-Medical Instrumentation	
Code :19PPHE41	Hrs/Week: 3+	Hrs/Semester: 45	Credits: 3

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	define resting and action potentials	1	Re
CO 2	list the uses of electrode paste	1	Re
CO 3	discuss the principle of operation of different types of transducers	1	Un
CO 4	interpret the output of bio potential recorders such as ecg, eeg and emg	1	Ev
CO 5	explain internal and external pacemakers	1	Un
CO 6	describe the working of different kinds of radiation monitoring instruments	1	Un
CO 7	recognise the importance of computers in medicine	1	Un
CO 8	evaluate the need for various imaging techniques such as computer tomography, thermography and mri	1	Ev

SEMESTER -IV			
Elective - I	B	Laser and its Types	
Code : 19PPHE41	Hrs/Week: 3+	Hrs/Semester: 45	Credits:3

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	Recall the forms of Polarisation modifiers	1	Re
CO 2	Explain the laser Exposition Pumping methods	1	Un
CO 3	Examine the confinement of laser beam with resonator	1	An
CO 4	Design the basic structure of p-n junction laser	1	Cr
CO 5	Interpret population inversion by the method of collision	1	Ev
CO 6	Compare semiconductor and gas lasers	1	Un
CO 7	Identify plasma and non-plasma schemes	1	Ap
CO 8	Find the scientific and historical origin of laser	1	Re

SEMESTER - I			
Core - I		CLASSICAL MECHANICS	
Code : 21PPHC11	Hrs/Week: 6	Hrs/Semester: 90	Credits:5

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Recall basic concepts related to continuous mechanical system.	1	Re
CO 2	Classify the motion of bodies under the influence of the system of force.	5	Ev
CO 3	Understand the method of separation of variables	2	Un
CO 4	Estimate the motion of rigid bodies, molecules, planets, satellites and ships by studying Euler's angles.	3	Ev
CO 5	Interpret extremely accurate results when studying large objects and speeds approaching the speed of light.	3	Ap
CO 6	Explain the difference between Lagrangian and Hamiltonian formulation.	1	Un
CO 7	Imagine the planar and spatial motion of rigid body.	1	Cr
CO 8	Solve the problems using their knowledge and skills in classical mechanics.	2	Cr

SEMESTER - I			
CORE - II MATHEMATICAL PHYSICS – I			
Code : 21PPHC12	Hrs/Week: 6	Hrs/Semester: 90	Credits:5

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Evaluate the area of irregular shape by Green's theorem.	2	Ev
CO 2	Recall the basic and the special types of matrices.	1	Re
CO 3	Understand the concepts of feedback control systems with finite dimensional vector spaces.	7	Un
CO 4	Apply special functions for Wireless communication and alternating current transmission.	2	Ap
CO 5	Understand the geometrical interpretation of complex numbers.	1	Un
CO 6	Explain the characteristic equation of a matrix using Cayley Hamilton Theorem.	3	Ev
CO 7	Understand the advanced concepts in evaluating double integral and area enclosed by plane curves	2	Un
CO 8	Apply group theory to various disciplines of Physics.	3	Ap



SEMESTER - I			
CORE - III ELECTRONICS AND EXPERIMENTAL METHODS			
Code : 21PPHC13	Hrs/Week: 6	Hrs/Semester: 90	Credits: 5

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Discuss the working principle of Tunnel Diode, photodiode, LED, LCD, photo conductor and Gunn diode	1	Un
CO 2	Define Hall Effect	1	Re
CO 3	Construct waveform generators such as Square wave generator, triangular wave generator and Schmitt trigger	1, 3	Cr
CO 4	Discuss the functions of registers and counters	1	Un
CO 5	Distinguish between the different types of registers	1	An
CO 6	Analyze the working of D/A and A/D converters	1	An
CO 7	Classify the working mechanism of different types of transducers	1	Ev
CO 8	Differentiate between intrinsic and extrinsic semiconductors	1	An

SEMESTER - I			
ELECTIVE – I      A. CRYSTAL GROWTH & THIN FILMS			
Code : 21PPHE11	Hrs/Week: 6	Hrs/Semester:90	Credits: 4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	generate an understanding of self-assembly during the process of growth	1	Un
CO 2	apply the processskills of scientific inquiry during experimentation	4	Ap
CO 3	Classify the arrangement of SEM, TEM	4	Ev
CO 4	apply the techniques of SEM and TEM to their own research projects	5	Ap
CO 5	distinguish the differences and similarities between different deposition techniques.	1	An
CO 6	categorize selection of deposition techniques for various applications	1	An
CO 7	use more techniques for the preparation of crystals and thin films	4	Ap
CO 8	recognize appropriate material for the fabrication of a device	4	Re

SEMESTER - II			
CORE IV		MATHEMATICAL PHYSICS II	
Code : 21PPHC21	Hrs/Week: 6	Hrs/Semester: 90	Credits: 5

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Analyse the experimental data with the aid of Fourier transform	4	An
CO 2	Blend the concepts of tensor calculus in moment of inertia	1	Cr
CO 3	Recall the basic notations of generating functions and special functions	1	Re
CO 4	Apply computational techniques to solve a wide range of numerical problems arising in physics	2	Ap
CO 5	Explain the concepts of Laplace Integral	1	Un
CO 6	Solve mathematical problems arising in physics by a variety of mathematical techniques.	2	Cr
CO 7	Employ the knowledge of critical thinking and problem solving	5	Ap
CO 8	Employ correct method to solve a particular problem	2	Ap

SEMESTER - II			
CORE V ELECTROMAGNETIC THEORY			
Code : 21PPHC22	Hrs/Week: 6	Hrs/Semester: 90	Credits: 5

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Recall the fundamental concepts of electromagnetic theory	1	Re
CO 2	Compare electrostatics with magnetostatics	1	Un
CO 3	Construct Maxwell's equations and identify each mathematical operator and physical quantity in the equations	3	Ap
CO 4	Formulate potential problems within electrostatics, magnetostatics	2	Cr
CO5	Analyze different waves and conduct a mock trial on electromagnetic radiation	5	An
CO 6	Summarize the types of wave guides	1	Un
CO7	Distinguish transmission lines and waveguides and analyze propagation of signal in different modes	1	An
CO8	Obtain solutions for the problems in electromagnetic theory	2	Cr



**SEMESTER - II****CORE VI THERMODYNAMICS AND STATISTICAL MECHANICS****Code : 21PPHC23****Hrs/Week: 6****Hrs/Semester: 90****Credits:5****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSOs addressed</b>	<b>CL</b>
CO 1	Understand working knowledge of the zeroth, first, second and third law of thermodynamics	1	Un
CO 2	Apply statistics in different systems containing atoms and molecules	2	Ap
CO 3	Inspect the partition function for the microcanonical, canonical, grand canonical ensemble	1	An
CO 4	Recall the loss of thermodynamics and equipartition theorem from the statistical description using microstates	1	Re
CO 5	Assess about phase transitions and black body radiation	5	Ev
CO 6	Apply energy changes in chemical reaction using the first law of thermodynamics	2	Ap
CO 7	Estimate the Statistical properties of Random Walks and fluctuations in ensembles	1	Cr
CO 8	Determine the physical properties of the system using various correlation functions in Ising Model	6	Ev

**SEMESTER - II****ELECTIVE - II A. BIO-MEDICAL INSTRUMENTATION****Code :21PPHE21****Hrs/Week: 6****Hrs/Semester:90****Credits: 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSOs addressed</b>	<b>CL</b>
CO 1	Define resting and action potentials	1	Re
CO 2	Classify the uses of electrode paste	1	Ap
CO 3	Discuss the principle of operation of different types of transducers	1	Un
CO 4	Interpret the output of bio potential recorders such as ECG, EEG and EMG	1	Ev
CO 5	Investigate internal and external pacemakers	1	An
CO 6	Illustrate the working of different kinds of radiation monitoring instruments	1	Ap
CO 7	Recognise the importance of computers in medicine	1	Un
CO 8	Evaluate the need for various imaging techniques such as Computer Tomography, Thermography and MRI	1	Ev

**SEMESTER - II****ELECTIVE II B. MICROPROCESSOR AND MICROCONTROLLER****Code :21PPHE22****Hrs/Week: 6****Hrs/Semester: 90****Credits: 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSOs addressed</b>	<b>CL</b>
CO 1	Understand the architectures and instruction sets of microprocessors and microcontrollers	1	Un
CO 2	Verify bus transactions, memory organisation and address decoding, basic I/O interfaces and port addressing	1	Ev
CO 3	Apply and implement learned algorithm design techniques and data structures to solve the problems	2	Ap
CO 4	Understand the interfacing of peripheral devices like I/O ports, keyboards, displays, ADCs, DACs, stepper motor	1	Un
CO 5	Analyze concepts associated with interfacing a microprocessor to memory and to I/O devices	6	An
CO 6	Estimate how to control components of a microprocessor based system through the use of interrupts	4	Cr
CO 7	Recall a microprocessor programming model at a level that enables to write assemble language programs for the processor meeting given specifications	6	Re
CO 8	Understand the popular 8051 Microcontroller ,the processor family and Time delay	1	Un

SEMESTER -III			
Core - VII		QUANTUM MECHANICS – I	
Code: 21PPHC31	Hrs/Week: 6	Hrs/Semester: 90	Credits:5

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Recall Schrodinger equation	1	Re
CO 2	Describe Ehrenfest's theorem and its verification	1	Un
CO 3	Discuss Heisenberg Uncertainty principle	1	Un
CO 4	Evaluate the commutation relations between the various quantum mechanical operators	1	Ev
CO 5	List the properties of Ket and Bra vectors	1	Re
CO 6	Discuss the linear harmonic oscillator problem using wave formalism and matrix formulation	2	Un
CO 7	Interpret equations of motion in the Schrodinger picture, Heisenberg picture and Interaction picture	1, 2	Ap
CO 8	Combine spin and angular momenta	1	Ap



SEMESTER -III			
CORE - VIII ATOMIC AND MOLECULAR SPECTROSCOPY			
Code:21PPHC32	Hrs/Week: 6	Hrs/Semester: 90	Credits:5

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Explain the structure of atoms and the origin of the observed spectra	1	Un
CO 2	Examine rotational spectra, get information about molecular dimension and atomic masses	4	An
CO 3	Examine rotational Raman spectra and understand the techniques in instrumentation	3	An
CO 4	Apply knowledge of Mossbaur spectroscopy in solid state physics and nanotechnology	4	Ap
CO 5	Assess how nuclear spins are affected by magnetic field and able to explain what happens when radio frequency radiation is observed	1	Ev
CO 6	Recall the basic hydrogen spectra	1	Re
CO 7	Explain the key properties of many electron atoms and the importance of the Pauli's exclusion principle	1	Ev
CO 8	Solve problems in atomic and molecular physics	2	Ap

SEMESTER –III			
CORE - IX		SOLID STATE PHYSICS- I	
Code: 21PPHC33	Hrs/Week: 6	Hrs/Semester: 90	Credits: 5

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Recall about the crystal structure and degree of ordering to atom binding and packing	1	Re
CO 2	Compare the Energy Bands and the number of orbital	5	Un
CO 3	Explain the physics of different types of bonds in crystalline structure	1	Un
CO 4	Solve band structure calculations for simple systems	6	Cr
CO 5	Apply the role of effective electron mass in electron dynamics	1	Ap
CO 6	Estimate the thermal ionization of donors and acceptors	4	Ev
CO 7	Describe diffraction using the reciprocal lattice	1	Re
CO 8	Deduce Bloch's theorem from the Schrödinger equation for electrons in a periodic potential	6	An

**SEMESTER - III****ELECTIVE -III A. NANO SCIENCE AND TECHNOLOGY****Code:21PPHE31****Hrs/Week: 6****Hrs/Semester:90****Credits: 4****Course Outcomes:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSOs addressed</b>	<b>CL</b>
CO 1	Recall a thorough knowledge of basic underline disciplines of nanoscience and nanotechnology	4	Re
CO 2	Explain the preparation, characterization and properties of nanomaterials	6	Un
CO 3	Analyze the types and properties of carbon nanotubes	1	An
CO 4	Assimilate existing and new concepts, methodology and researches and apply them in their academic research environment	7	Ev
CO 5	Aware of challenges, risks and promises of nano technological development	6	An
CO 6	Synthesise the nanomaterials by physical, chemical and biological methods and evaluate their properties.	6	Ev
CO 7	Characterise the synthesized nanomaterials by various techniques.	5	Ev
CO 8	Apply the nanomaterials in energy storage, food and in day-to-day life.	8	Ap

SEMESTER - III			
ELECTIVE -III		B. ENERGY SOURCES	
Code: 21PPHE32	Hrs/Week: 6	Hrs/Semester:90	Credits: 4

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	outline the technologies that are used to harness the power of solar energy	1	An
CO 2	discuss the positive and negative aspects of solar energy in relation to natural and human aspects of the environment	5	Un
CO 3	Summarize the structure of biomass.	8	Ev
CO 4	Assess economic factors affecting geothermal energy production	5	Ev
CO 5	Analyse and critically evaluate emerging geothermal technologies.	8	An
CO 6	Compare chemical energy to mechanical energy.	1	An
CO 7	Write the uses of Hydrogen energy	5	Cr
CO 8	List the main characteristics (advantages/disadvantages) for fuel cells.	8	Ap



SEMESTER – IV			
CORE X		QUANTUM MECHANICS – II	
Code: 21PPHC41	Hrs/Week: 6	Hrs/Semester: 90	Credits: 5

**Course Outcomes:**

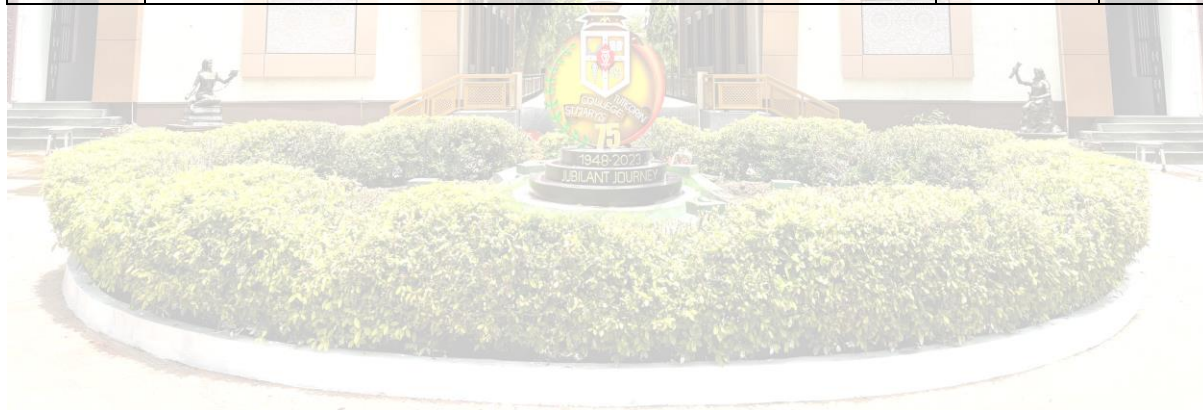
CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Describe time independent perturbation theory and its application to the first order Stark effect in Hydrogen atom	1	Re
CO 2	Discuss time dependent perturbation theory and transition probability	1	Un
CO 3	Derive Fermi- Golden rule	2	An
CO 4	Write the Relativistic theory in quantum mechanics	1	Cr
CO 5	Describe scattering by a square well potential using Born approximation and Partial wave analysis	1	Un
CO 6	Employ WKB approximation in quantum problems	1	Ap
CO 7	Explain Dirac's equation for a free particle	1	Ev
CO 8	Apply approximation methods to solve problems	1	Ap



SEMESTER - IV			
CORE XI		SOLID STATE PHYSICS- II	
Code:21PPHC42	Hrs/Week: 6	Hrs/Semester: 90	Credits: 5

**Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	Understand the properties of solids	1	Un
CO 2	Demonstrate the types of Polarizability	2	Ap
CO 3	Compare the magnetic properties of solid materials	1	An
CO 4	Reason the working of magnetic mirror and SQUID	1	An
CO5	Identify the properties of insulators and ferro electricity.	1	An
CO 6	Develop the research work in the field of material science and nanotechnology	1	Cr
CO7	Solve the problems related basic crystallography.	1	Cr
CO8	Discuss the quantum theory of magnetic materials	1	Ap



**SEMESTER - IV****CORE XII NUCLEAR AND PARTICLE PHYSICS****Code:21PPHC43****Hrs/Week: 6****Hrs/Semester: 90****Credits:5****Course Outcomes:**

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO 1	List the basic atomic properties of nuclei	1	Re
CO 2	Classify the different types of nuclear reactions	5	Un
CO 3	Examine the different types of nuclear models and their properties	6	An
CO 4	Categorize the nuclear forces and the theories related to it	1	An
CO 5	Classify the types of elementary particles	1	Ev
CO 6	Distinguish the fission and fusion	1	An
CO 7	Relate the deuteron properties and reactions	2	Ap
CO 8	Examine the origin of various terms in nuclear physics	1	An



**Programme: B. Sc. Psychology**

SEMESTER - I			
Core I		General Psychology I	
Code : 18UPSC11	Hrs / Week: 4	Hrs / Sem.: 60	Credits: 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts in psychology in historical outline.	1	Re
CO-2	gain knowledge in the various principles of psychology.	1	Re
CO-3	compare and contrast the various areas of psychology.	1,4	Un
CO-4	understand the various biological basis of behaviour.	5	Un
CO-5	apply knowledge about the sensory processes of the body in life	5	Ap
CO-6	analyze the concepts of attention.	4	An
CO-7	evaluate the concepts of perception.	4	Ev
CO-8	create new theories and concepts of emotions.	4	Cr



**SEMESTER – I****Core II****Developmental Psychology I****Code : 18UPSC12****Hrs / Week: 4****Hrs / Sem.: 60****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the various developmental stages of man.	3	Un
CO-2	know the various developmental tasks.	3	Re
CO-3	acquire competence in the various skills of relevant stages.	3	Un
CO-4	learn the various hazards of each stage.	3	Un
CO-5	understand the basic principles of play interests in the various stages.	3	Un, Ap
CO-6	analyze the various problems of each developmental stage.	3	An
CO-7	evaluate the knowledge on the developmental processes.	3,4	Ev
CO-8	understand and create the need for knowledge on the developmental stages.	3	Cr

**SEMESTER – I****Allied 1****Elements of Sociology****Code: 18UPSA11****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the nature, scope and subject matter of sociology	2	Re
CO-2	understand the primary concepts	2	Un
CO-3	understand about the social institutions	2	Un
CO-4	apply the concept of 'total environment', geographical environment and its impact on social life	2, 8	Ap
CO-5	know about the individual and the society	2,8	Un, Ap
CO-6	evaluate the social differentiation and stratification	2,8	An, Ev
CO-7	evaluate the basic social processes	8	Ev
CO-8	create a universal concept of culture	8	Cr

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER – II****Core III****General Psychology II****Code: 18UPSC21****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	introduce the processes of memory and causes of forgetting.	4	Un
CO-2	know the meaning and types of thinking, learning, motivation and emotions.	4	Un
CO-3	acquire knowledge about forgetting and thinking processes.	4	Re
CO-4	learn the basics of intelligence.	4	Un
CO-5	analyze the theories of motivation.	4	An
CO-6	create an in depth knowledge about memory processes.	4,6	Cr
CO-7	understand the concepts of personality.	1, 3,4	Ev
CO-8	create new memory techniques.	4	Cr



**SEMESTER – II****Core IV****Developmental Psychology II****Code : 18UPSC22****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the various developmental stages of man.	3	Un
CO-2	know the various developmental tasks.	3	Un
CO-3	acquire competence in the various skills of relevant stages.	3	Un
CO-4	learn the various hazards of each stage.	3, 4	Un , Re
CO-5	understand the basic principles of play interests in the various stages.	3,4	Un , Ap
CO-6	analyze the various problems of each developmental stage.	3,8	An
CO-7	create an in depth knowledge of the developmental processes.	3,4	Cr
CO-8	understand and create the need for knowledge on the developmental stages.	3	Cr

**SEMESTER – II****Allied II****Biological basis of Behaviour****Code : 18UPSA21****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Develop an awareness about hormones.	5	Un
CO-2	Gain knowledge about internal regulation.	5	Re
CO-3	Acquire competence on the sensory motor systems.	5,6	Un
CO-4	Learn about the internal regulatory systems.	5, 6	An
CO-5	Analyze the reproductive behaviours in human beings.	3, 4, 5	An
CO-6	Create an in depth understanding about emotional behaviours.	3, 4	Ev
CO-7	Understand the various biological origins of behaviour.	3, 5	An
CO-8	Create an in depth understanding of the subject	3	Cr

**SEMESTER III****Core V****Abnormal Psychology - I****Code:18UPSC31****Hrs/Week:4****Hrs/Sem: 60****Credits:4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts of various disorders in life	6	Re
CO-2	compare and understand the various impacts of disorders	6	Un
CO-3	apply knowledge about handling disorders in daily life	6,8	Ap
CO-4	analyze the need of knowledge of prevention of disorders in daily life	6,8	An
CO-5	evaluate the means of developing an understanding about mental retardation	3,6	Ev
CO-6	create new theories and concepts of handling disorders	6,7	Cr
CO-7	create a society devoid of mental disorders	6,8	Cr
CO-8	develop a better understanding about people with mental disorders.	8	Cr

**SEMESTER III****Allied III****Psychological Statistics - I****Code:18UPSA31****Hrs/Week:4****Hrs/Sem: 60****Credits: 3****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of statistics in psychology	7	Re
CO-2	compare and contrast the various measurements of statistics	7	Un
CO-3	apply knowledge about variability and correlation in statistics in psychology	7	Ap
CO-4	analyze the need of knowledge of inferential and descriptive statistics	7	An
CO-5	evaluate the means of developing an understanding about sampling and probability	7	Ev
CO-6	create new theories and concepts of statistics in psychology	7	Cr
CO-7	develop a good knowledge about the research field by understanding statistics.	7	Cr
CO-8	develop a good research aptitude among students.	7	Cr



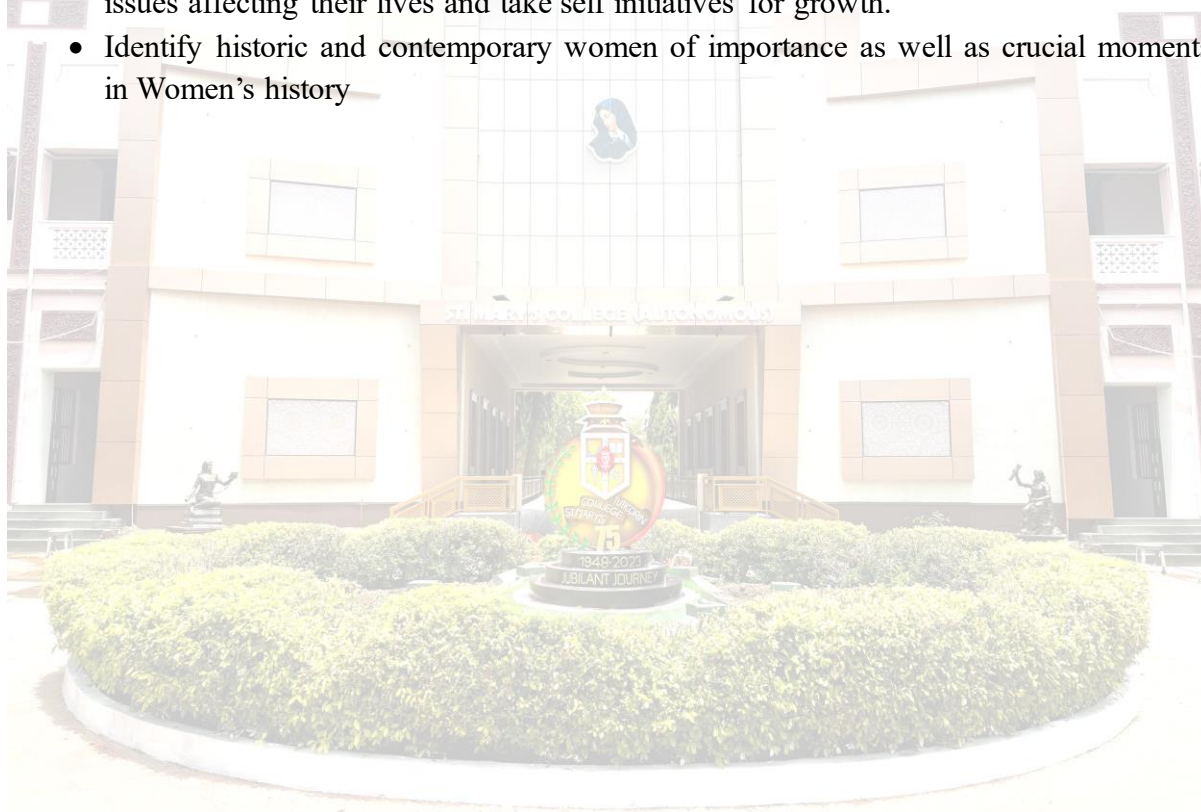
### Semester – III

#### Women's Synergy

<b>Code : 18UAWS31</b>	<b>Hrs/ Week : 2</b>	<b>Hrs/Sem:30</b>	<b>Credits : 2</b>
------------------------	----------------------	-------------------	--------------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER IV****Core VI****Abnormal Psychology - II****Code:18UPSC41****Hrs/Week: 4****Hrs/Sem: 60****Credits: 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts of various disorders in life	6	Re
CO-2	compare and understand the various impacts of disorders	5, 6	Un
CO-3	apply knowledge about handling disorders in daily life	6,8	Ap
CO-4	analyze the need of knowledge of prevention of disorders in daily life	6	An
CO-5	evaluate the means of developing an understanding about mental retardation	5,6	Ev
CO-6	create new theories and concepts of handling disorders	6,8	Cr
CO-7	develop an awareness among students regarding discipline.	4	Cr
CO-8	creating disorder free society	8	Cr

**SEMESTER IV****Allied IV****Psychological Statistics II****Code:18UPSA41****Hrs/Week:4****Hrs/Sem: 60****Credits: 4****Course Outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of statistics in psychology	7	Re
CO-2	compare and contrast the various measurements of statistics	7	Un
CO-3	apply knowledge about variability and correlation in statistics in psychology	7	Ap
CO-4	analyze the need of knowledge of inferential and descriptive statistics	7	An
CO-5	evaluate the means of developing an understanding about sampling and probability	7	Ev
CO-6	create new theories and concepts of statistics in psychology	7	Cr
CO-7	develop a scientific society	7	Cr
CO-8	develop a knowledge that makes them true researchers and solve society's problems	7, 8	Cr

## SEMESTER- V

### Common Core VII      Psychology and Microbiology for Health Care

**Code: 18UBCS51**

**Hrs/Week: 6**

**Hrs/Sem: 90**

**Credits: 4**

#### Course Outcome

CO. NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the nature of psychology and microbiology	1	Re
CO-2	understand the importance of human system	1	Re
CO-3	to gain knowledge about the acute stressors.	2	Un
CO-4	analyze the various problems in menstrual cycle	5	An
CO-5	to develop a proper lifestyle	3	Cr
CO-6	understand about sleep related disorders	6	Un
CO-7	create an indepth knowledge about the health risk factors	2	Un
CO-8	evaluate the concept of health care.	4	Ev



**SEMESTER V****Core VIII****Social Psychology I****Code:18UPSC52****Hrs/Week: 5****Hrs/Sem: 75****Credits: 4****Course Outcome**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the nature of social psychology and other social sciences.	1	Re
CO-2	understand the importance of the social perception and other theories.	3	Re
CO-3	to gain knowledge about the prejudice and discrimination.	2	Un
CO-4	analyze the various problems in group formation and in decision making process.	5	An
CO-5	develop the leadership quality in the young mind.	3	Cr
CO-6	understand the meaning and perspectives of aggression.	4	Un
CO-7	create a depth knowledge of in theoretical explanations of socio-cultural determinants	3	Cr
CO-8	evaluate the concepts of social learning.	4	Ev

**SEMESTER V****Core:IX****Counselling Psychology****Code:18UPSC53****Hrs/Week:5****Hrs/Sem: 60****Credits:4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the process of counselling and the Ethics in counselling.	5	Un
CO-2	analyse the counselling process and its various stages.	5	An
CO-3	understand the concepts and theories in counselling.	5	Un
CO-4	know the meaning, person centered counselling and behavioural counselling.	5	Un
CO-5	use the theories of counselling in a practical way.	5	Ap
CO-6	understand the concept applications of counselling.	5	Cr
CO-7	evaluate the knowledge on counselling skills.	3,4	Ev
CO-8	analyze the various crisis in counselling.	5	An

**SEMESTER V****Core Integral II Psychology of Women****Code:18UPSI52****Hrs/Week:4****Hrs/Sem: 60****Credits: 4****Course Outcome:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	to introduce the meaning and determinants of women's mental health.	5	Re
CO-2	addressing the issue of mental health of today's women.	5	Un
CO-3	analyze the mortality rate, literacy rate and sex ratio among women who in India.	5	An
CO-4	know the challenges faced by women in their life.	5	Un
CO-5	knowledge about Factors responsible for violence against women.	2	Un
CO-6	create a knowledge about health related issues and health care facilities.	3,5	Ev
CO-7	empowering women community, national and global leadership.	7	Cr, Ev
CO-8	understand the various factors relating to prejudice and discrimination.	5	Un

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

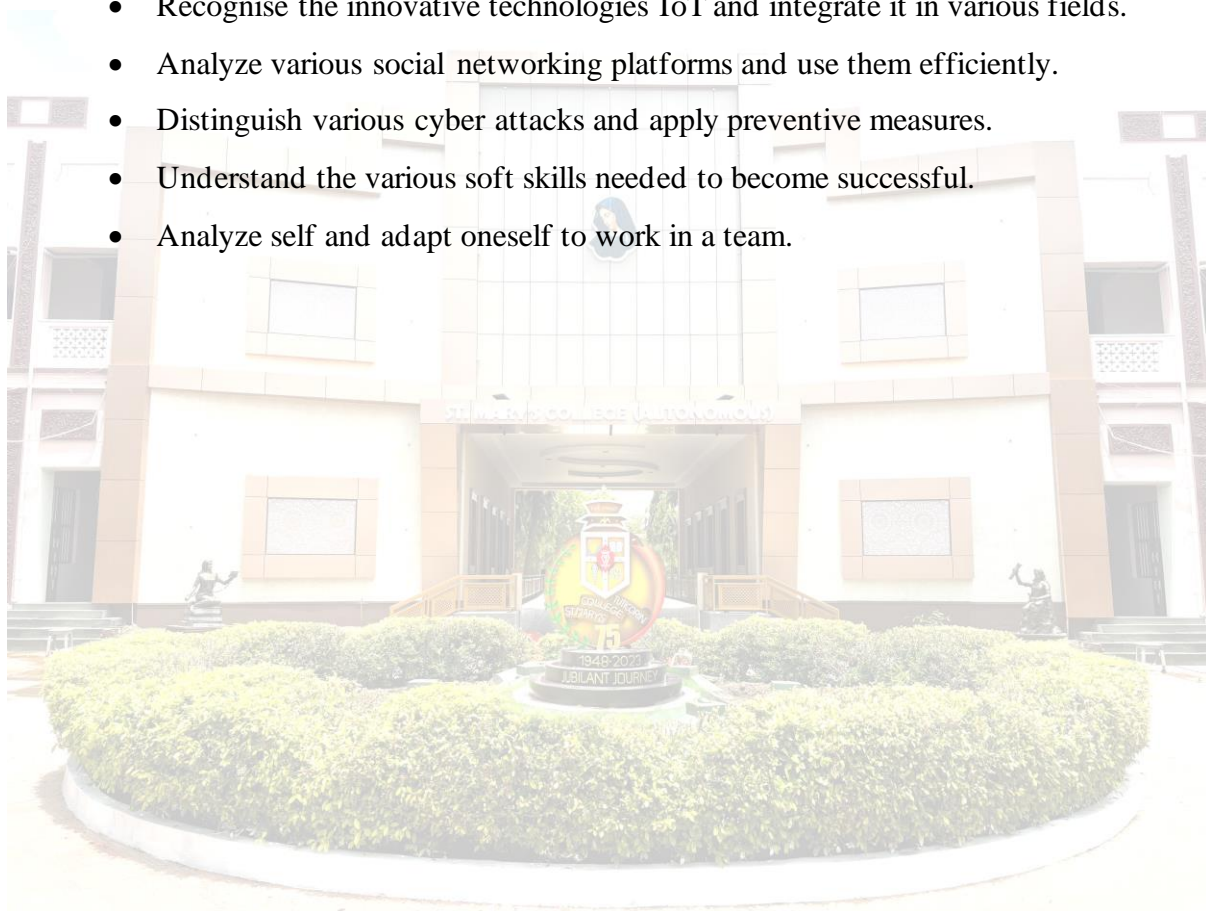
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.





**SEMESTER – VI****Core X****Social Psychology II****Code : 18UPSC61****Hrs / Week: 5****Hrs / Sem.: 75****Credits: 4****Course Outcome**

CO.NO.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the aspects of self and identity	2,4	Re
CO-2	compare and understand the various aspects of interpersonal attraction	2	Un
CO-3	apply knowledge about handling others in daily life	2,8	Ap
CO-4	analyze the need of knowledge of changing other's behavior.	2,8	An
CO-5	evaluate the means of developing an understanding about social interaction	2,8	Ev
CO-6	create new theories and concepts of handling others	2,8	Cr
CO-7	create a society devoid of aggression	2,8	Cr
CO-8	develop a better understanding about people.	2,8	Cr

**SEMESTER - VI****Core XI Positive Psychology****Code : 18UPSC62****Hrs / Week: 5****Hrs / Sem.: 75****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the aspects of positive psychology	1	Re
CO-2	compare and understand the various aspects of positive psychology	1	Un
CO-3	apply knowledge about handling others in daily life in a positive way	1, 2, 8	Ap
CO-4	analyze the need of knowledge of positivity	1,8	An
CO-5	evaluate the means of developing an understanding about positive social interaction	1, 2, 8	Ev
CO-6	create new theories and concepts of positive psychology	1, 8	Cr
CO-7	create a society devoid of negativity	1, 2, 8	Cr
CO-8	develop a better understanding about people through positive psychology	1, 2, 8	Cr

**SEMESTER - VI****Core XII Industrial Psychology****Code : 18UPSC63****Hrs / Week: 5****Hrs / Sem.: 75****Credits: 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the aspects of positive psychology	1	Re
CO-2	compare and understand the various aspects of positive psychology	1	Un
CO-3	apply knowledge about handling others in daily life in a positive way	1, 2, 8	Ap
CO-4	analyze the need of knowledge of positivity	1, 8	An
CO-5	evaluate the means of developing an understanding about positive social interaction	1, 2, 8	Ev
CO-6	create new theories and concepts of positive psychology	1, 8	Cr
CO-7	create a society devoid of negativity	1, 2, 8	Cr
CO-8	develop a better understanding about people through positive psychology	1, 2, 8	Cr

**SEMESTER I****Core I****General Psychology – I****Course Code:21UPSC11****Hrs/Week:6****Hrs/ Sem: 90****Credit: 6****Course Outcome:**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of psychology in historical timeline, its methods and areas	1	Re
CO 2	gain knowledge about the senses and its processes	1	Re,Un
CO 3	analyze attention and perception	1.4	An
CO 4	create new theories and concepts of emotion and motivation	2	Un, Cr
CO 5	learn forgetting, learning and thinking	2	Un
CO 6	understand and analyze the basic thinking processes	3	Un, An



## SEMESTER – I

Allied 1

Elements of Sociology

Course Code: 21UPSA11

Hrs / Week: 4

Hrs / Semester: 60

Credit: 3

### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the nature, scope and subject matter of sociology	2	Re
CO-2	understand the primary concepts	2	Un
CO-3	understand about the social institutions	2	Un
CO-4	apply the concept of 'total environment', geographical environment and its impact on social life	2	Ap
CO-5	know about the individual and the society	2,7	Un, Ap
CO-6	evaluate the social differentiation and stratification	2,7	An, Ev



## SEMESTER – I

**Skill Enhancement course**

**Professional English for Psychology I**

**Course Code: 21UPSPE1**

**Hrs / Week: 2**

**Hrs / Semester: 30**

**Credit: 2**

### Course Outcome:

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	recognise their own ability to improve their own competence in using the language	9	Un
CO 2	use language for speaking with confidence in an intelligible and acceptable manner	9	An
CO 3	understand the importance of reading for life	9	Un
CO 4	read independently unfamiliar texts with comprehension	9	Un
CO 5	understand the importance of writing in academic life	9	An
CO 6	write simple sentences without committing error of spelling or grammar	9	Cr

## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

## SEMESTER – II

### Core II Developmental Psychology

Course Code : 21UPSC21

Hrs / Week: 6

Hrs / Semester: 90

Credit: 6

#### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the various developmental stages of man.	3	Un
CO-2	know the various developmental tasks.	3	Un
CO-3	acquire competence in the various skills of relevant stages.	3	Un
CO-4	learn the various hazards of each stage.	3, 4	Un , Re
CO-5	understand the basic principles of play interests in the various stages.	3,4	Un , Ap
CO-6	analyze the various problems of each developmental stage.	3	An



## SEMESTER – II

**Allied II**

**Biological Basis of Behavior**

**Course Code : 21UPSA21**

**Hrs / Week: 4**

**Hrs / Semester: 60**

**Credit: 3**

### Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	develop an awareness about hormones.	4	Un
CO-2	gain knowledge about internal regulation and biological origins of behaviour	4	Re
CO-3	acquire competence on the lateralization process	4,5	Un
CO-4	learn about the internal regulatory systems.	4,5	An
CO-5	analyze the reproductive behaviours in human beings.	3, 4, 5	An
CO-6	create an in depth understanding about emotional behaviours.	3, 4	Ev



## SEMESTER – II

**Skill Enhancement course**      **Professional English for Psychology II**

**Course Code: 21UPSPE2**

**Hrs / Week: 2**

**Hrs / Semester: 30**

**Credit: 2**

### Course Outcome:

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	recognize their own ability to improve their own competence in using the language	9	Un
CO 2	use language for speaking with confidence in an intelligible and acceptable manner	9	An
CO 3	understand the importance of reading for life	9	Un
CO 4	read independently unfamiliar texts with comprehension	9	Un
CO 5	understand the importance of writing in academic life	9	An
CO 6	write simple sentences without committing error of spelling or grammar	9	Cr

**SEMESTER – III****Core III****Abnormal Psychology I****Course Code : 21UPSC31****Hrs / Week: 4****Hrs / Semester: 60****Credit: 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts of various disorders in life	5	Re
CO-2	compare and understand the various impacts of disorders	5	Un
CO-3	apply knowledge about handling disorders in daily life	4, 5	Ap
CO-4	analyze the need of knowledge of prevention of disorders in daily life	5, 7	An
CO-5	evaluate the means of developing an understanding about mental retardation	3, 5	Ev
CO-6	create new theories and concepts of handling disorders	5, 7	Cr

**SEMESTER III****Allied III****Psychological Statistics - I****Course Code:21UPSA31****Hrs/Week:4****Hrs/Sem: 60****Credit: 4****Course outcome:**

CO.No.	Upon completion of this course, students will be able to	PSOs addressed	CL
CO-1	learn the basic concepts and principles of statistics in psychology	6	Re
CO-2	Compare and contrast the various measurements of statistics	6	Un
CO-3	apply knowledge about variability and correlation in statistics in psychology	6	Ap
CO-4	analyze the need of knowledge of inferential and descriptive statistics	6	An
CO-5	evaluate the means of developing an understanding about sampling and probability	6	Ev
CO-6	create new theories and concepts of statistics in psychology	6	Cr



### SEMESTER - III

#### Skill based Elective      Applications of Positive Psychology

Course Code : 21UPSS31

Hrs/Week: 2

Hrs / Sem.: 30

Credit: 2

#### Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the aspects of positive psychology	1	Re
CO-2	compare and understand the various aspects of positive psychology	1	Un
CO-3	apply knowledge about handling others in daily life in a positive way	1, 2, 8	Ap
CO-4	analyze the need of knowledge of positivity	1,8	An
CO-5	evaluate the means of developing an understanding about positive social interaction	1, 2, 7	Ev
CO-6	create new theories and concepts of positive psychology	1, 7	Cr

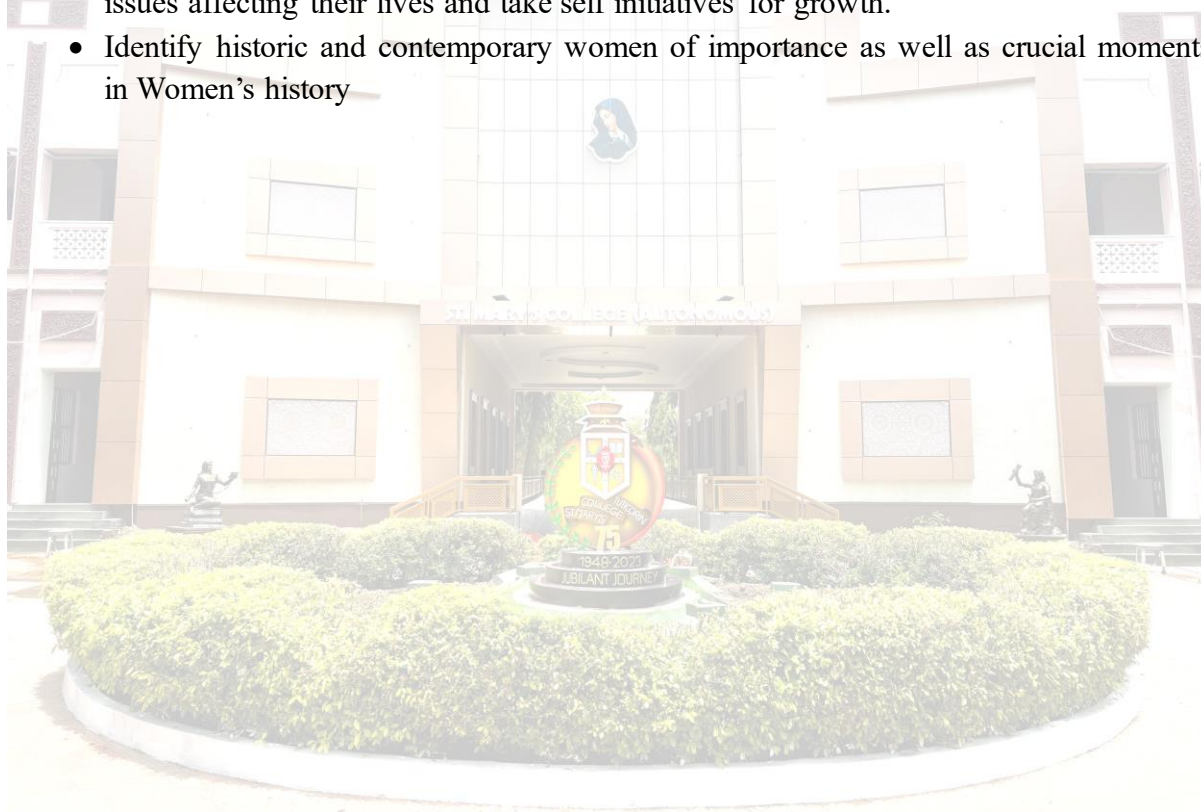
### Semester – III

#### Women's Synergy

Code : 21UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history



**SEMESTER – IV****Core IV****Abnormal Psychology II****Course Code : 21UPSC41****Hrs / Week: 4****Hrs / Semester: 60****Credit: 4****Course Outcome:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	learn the basic concepts of various disorders in life	5	Re
CO-2	compare and understand the various impacts of disorders	5	Un
CO-3	apply knowledge about handling disorders in daily life	5, 7	Ap
CO-4	analyze the need of knowledge of prevention of disorders in daily life	5, 7	An
CO-5	evaluate the means of developing an understanding about mental retardation	3, 5	Ev
CO-6	create new theories and concepts of handling disorders	5, 7	Cr

**SEMESTER IV****Allied IV****Psychological Statistics – II****Course Code: 21UPSA41****Hrs/Week:4****Hrs/Sem: 60****Credit: 4****Course outcomes:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of statistics in psychology	6	Re
CO-2	compare and contrast the various measurements of statistics	6	Un
CO-3	apply knowledge about variability and correlation in statistics in psychology	6	Ap
CO-4	analyze the need of knowledge of inferential and descriptive statistics	6	An
CO-5	evaluate the means of developing an understanding about sampling and probability	6	Ev
CO-6	create new theories and concepts of statistics in psychology	6	Cr



**SEMESTER IV****Skill based Elective****Sports Psychology****Course Code: 21UPSS41****Hrs/Week:2****Hrs/Sem: 30****Credit: 2****Course outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of sports psychology	6	Un
CO-2	apply the concepts learnt in personality development	2, 3	Ap
CO-3	analyze how psychology is applied in the field of sports	3, 6	An
CO-4	analyze the various emotions associated with sports	4, 6	An
CO-5	evaluate the social factors that influence sportsmanship	2, 6	Ev
CO-6	create new expertise and skill development programs essential for sports	2, 6, 7	Cr



## SEMESTER- V

**Common Core**      **Psychology and Micro Biology for Health Care**

**Course Code: 21UBCS51**

**Hrs/Week: 6**

**Hrs/Sem: 90**

**Credit: 4**

### Course Outcomes:

CO. NO	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the nature of psychology and microbiology	1	Re
CO-2	understand the importance of human system	1, 3	Re
CO-3	gain knowledge about the acute stressors.	2, 3, 4	Un
CO-4	analyze the various problems in menstrual cycle	4	An
CO-5	develop a proper lifestyle	3, 7	Cr
CO-6	understand about sleep related disorders	5	Un



**SEMESTER- V****Core VI****Social Psychology****Course Code: 21UPSC51****Hrs/Week: 4****Hrs/Sem: 60****Credit: 4****Course outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the nature of social psychology and other social sciences.	1, 2	Re
CO-2	understand the importance of the social perception and other theories.	2	Re
CO-3	gain knowledge about the prejudice and discrimination.	2	Un
CO-4	analyze the various problems in group formation and in decision making process.	2, 7	An
CO-5	develop the leadership quality in the young mind.	2, 7	Cr
CO-6	understand the meaning and perspectives of aggression.	5, 7	Un

## SEMESTER V

### Core VII

### Counselling Psychology

Course Code: 21UPSC52

Hrs/Week:4

Hrs/Sem: 60

Credit:4

### Course Outcome:

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the process of counselling and the Ethics in counselling.	7	Un
CO-2	analyse the counselling process and its various stages.	7	An
CO-3	understand the concepts and theories in counselling.	7	Un
CO-4	know the meaning, person centered counselling and behavioural counselling.	7	Un
CO-5	use the theories of counselling in a practical way.	7	Ap
CO-6	understand the concept applications of counselling.	7	Cr





## SEMESTER V

**Core elective**

**Forensic Psychology**

**Course Code: 21UPSE51**

**Hrs/Week: 4**

**Hrs/Sem: 60**

**Credit:4**

### Course outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic concepts and principles of forensic psychology	1, 5	Un
CO-2	apply the concepts learnt in personality development	2, 5	Ap
CO-3	analyze how psychology is applied in the field of crime and criminology	2, 5	An
CO-4	analyze the various emotions associated with crime	4, 5	An
CO-5	evaluate the social factors that influence the field of forensic psychology	2, 5, 7	Ev
CO-6	create new expertise and skill development programs essential for handling criminals	2, 5, 7	Cr



## Semester - V

**Common Skill Based Core**

**Computer for Digital Era and Soft Skills**

**Code : 21UCSB51**

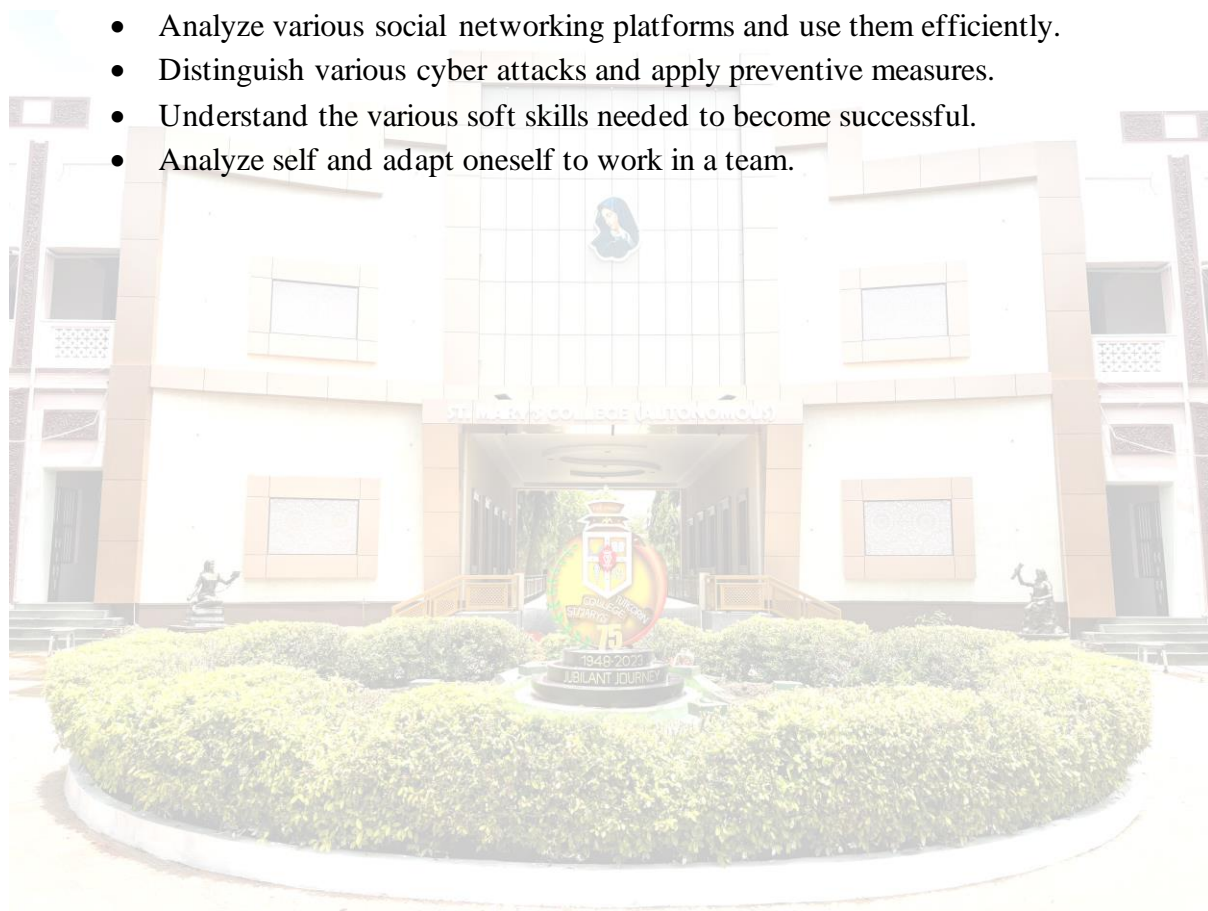
**Hrs / Week : 2**

**Hrs / Sem : 30**

**Credits : 2**

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



SEMESTER VI			
Core IX		Educational Psychology	
Course Code: 21UPSC61	Hrs/Week: 4	Hrs/ Sem: 60	Credit: 4

**Course Outcomes:**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of educational psychology	1, 3	Re
CO 2	gain knowledge about the various methods of doing research in Educational Psychology	1, 3	Re, Un
CO 3	analyze the various steps in inculcating psychology in education	3	An
CO 4	create new methods of teaching and learning methods	3, 6	Un, Cr
CO 5	learn the skills of developing Educational Psychology	1, 6	Un
CO 6	understand and analyze various problems in educational settings	3, 5, 6	Un, An

**SEMESTER - VI****Core XI****Organizational Behaviour****Course Code:21UPSC63****Hrs/Week: 4****Hrs/ Sem: 60****Credit: 4****Course Outcomes:**

<b>CO No</b>	<b>Upon completion of this course, the person will be able to</b>	<b>PSO Addressed</b>	<b>CL</b>
CO 1	learn the basic concepts of organizational behaviour	1,7	Re
CO 2	gain knowledge about various methods of doing research in the field of organizational behaviour	6, 7	Re, Un
CO 3	analyze various steps in inculcating psychology in shaping organizational behavior	2, 7	An
CO 4	impart innovative methods of teaching effective organizational behaviour	7	Un, Cr
CO 5	imply the skills required to shape the employee and employer's behavior	7	Un
CO 6	understand and analyze the challenges in organizational settings	7	Un, An



## SEMESTER - VI

### Core XII

### Consumer Behavior

Course Code: 21UPSC64

Hrs/Week: 4

Hrs/ Sem: 60

Credit: 4

### Course Outcome:

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	understand the buying needs and patterns of the consumers	1, 2	Un
CO 2	analyze the thoughts, emotions and behaviors of the consumers	2, 3, 4	An
CO 3	understand the psychology behind the marketing strategy	2, 8	Un
CO 4	understand the changing trends in consumer behavior	2, 3	Un
CO 5	evaluate the psychology of consumers	1, 2	An
CO 6	create new techniques to attract consumers	2, 7	Cr

**Programme: M. Sc. Psychology**

SEMESTER I			
Core I		Advanced General Psychology	
Code: 21PPSC11	Hrs/Week:6	Hrs/ Sem: 90	Credit: 4

**Course Outcomes:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the nature, goal and historical origins of psychology.	1	Re, Un
CO-2	learn the concepts of sensation, perception and consciousness by associating with daily activities.	1	Un, An
CO-3	understand about cognitive elements such as memory, language and thought.	1	Re, An
CO-4	apply the concepts of general psychology by inculcating them in one's daily life.	1	Ap, Cn
CO-5	know about intelligence, learning and conditioning and how they are acquired in individuals.	1	Un
CO-6	evaluate the importance of every concepts and understand their key elements.	1	Ev, An

**SEMESTER I****Core III****Theories of Personality****Code: 21PPSC13****Hrs/Week: 5****Hrs/ Sem: 75****Credit: 4****Course Outcomes:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the lives of the theorist who proposed various theories of personality.	1 & 2	Re
CO-2	learn the underlying factors that contributed to the development of the particular theory.	1 & 2	Re, Un
CO-3	understand about the advantages and disadvantages of each theory.	2	An, Ev
CO-4	apply the concept of various theories and their uses.	2	Un, Ap
CO-5	know about the applicability of each theory and understand their contribution to psychology.	2 & 4	Un
CO-6	evaluate the differences existing between every theory.	2	Un, An

**SEMESTER I****Core: IV****Physiological Psychology****Code: 21PPSC14****Hrs/ Week: 5****Hrs/ Sem: 75****Credit: 4****Course Outcomes:**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of physiological psychology	1 & 2	Re
CO 2	gain knowledge about the various concepts of biology to treat mental issues	1 & 2	Re, Un
CO 3	analyse the various causes of psychological illnesses due to faulty physical functioning	2 & 5	An
CO 4	create new methods of treating people with mental disorders with a physical approach	2 & 5	Un, Cr
CO 5	learn the skill of administering biological psychology to the shaping of behaviour	2, 4 & 5	Un
CO 6	understand and analyse the basic thinking processes of people with psychological issues due to physical reasons	2, 4 & 5	Un, An



**SEMESTER II****Core V Counselling Psychology****Code: 21PPSC21****Hrs/Week: 5****Hrs/ Sem: 75****Credit: 4****Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to.	PSO addressed	CL
CO-1	know the emergence of counselling and their ethical principles.	1 & 3	Re, Un
CO-2	understand various theories and techniques applied in counselling sessions.	1 & 3	Un, An
CO-3	understand about the process in which counselling services are provided.	3	Ev, Un
CO-4	apply the skills described to counsel individuals and master them by practicing.	3 & 4	Un, Ap
CO-5	know about the two different models of counselling.	3	Un, Ev
CO-6	evaluate the differences in the two models of counselling.	3	Un, An

**SEMESTER II****Core VI****Psychotherapeutics****Code: 21PPSC22****Hrs/Week:5****Hrs/ Sem: 75****Credit: 4****Course Outcomes:**

<b>CO. No</b>	<b>Upon Completion of this course, students will be able to</b>	<b>PSO Addressed</b>	<b>Cognitive Level</b>
CO-1	understand the new developments in psychotherapy and its concepts	1 & 3	Un
CO-2	obtain an understanding of how the methods of existential therapy can be applied	3 & 5	Un
CO-3	develop the knowledge of the cognitive theory and to understand the cognitive therapy	3 & 5	Ln
CO-4	understand the concepts of transactional analysis and its types	3 & 7	An
CO-5	gain the knowledge about the family therapy and its procedure	3	Ev
CO-6	know the concepts of eastern psychotherapies and its applications	3	Un

## SEMESTER II

**Core: VII**

**Advanced Social Psychology**

**Code: 21PPSC23**

**Hrs/Week:5**

**Hrs/ Sem: 75**

**Credit: 4**

### Course Outcomes:

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of social psychology	1 & 4	Re
CO 2	gain knowledge about the various systems and functions of the society	1 & 4	Re, Un
CO 3	analyse the various causes of problems in a society	4 & 7	An
CO 4	create new methods of treating social issues	4	Un, Cr
CO 5	learn the skill of handling people with various problems	4 & 5	Un
CO 6	understand and analyse the basic thinking processes of people in a society	4 & 5	Un, An



## SEMESTER II

### Core VIII

### Research Methodology

Code: 21PPSC24

Hrs/Week:4

Hrs/ Sem: 60

Credit: 4

### Course Outcomes:

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of research methods	1 & 4	Re
CO 2	gain knowledge about the various methods of doing research in Psychology	1, 4 & 5	Re, Un
CO 3	analyse the various steps in research methodology	4	An
CO 4	create new methods of research designs	4 & 5	Un, Cr
CO 5	learn the skills of doing research in Psychology	4	Un
CO 6	understand and analyse various research methods	4	Un, An





SEMESTER III			
Core IX		Clinical Psychology	
Code: 21PPSC31	Hrs/Week:6	Hrs/Sem: 90	Credit: 4

**Course Outcomes:**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of clinical psychology	5	Re
CO 2	gain knowledge about the various disorders and their symptoms	1 & 5	Re, Un
CO 3	analyse the various causes of mental illnesses	3 & 5	An
CO 4	create new methods of treating mental illnesses	5	Un, Cr
CO 5	learn the skill of handling people with mental disorders	4 & 5	Un
CO 6	understand and analyse the basic thinking processes of people with disorders	5 & 8	Un, An



### SEMESTER – III

**Core XI**

**Statistics for Behavioural science**

**Code : 21PPSC33**

**Hrs / Week: 5**

**Hrs / Semester: 75**

**Credit: 4**

#### Course Outcomes:

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of statistics	1 & 5	Re
CO 2	gain knowledge about the various methods of developing and using statistical techniques	1 & 5	Re, Un
CO 3	analyse the various steps in psychological statistical methods	5	An
CO 4	create new methods of creating and testing behaviour	4 & 5	Un, Cr
CO 5	learn the skills of administering statistics in psychological tests	5	Un
CO 6	understand and analyse various statistical testing methods	5	Un, An

SEMESTER III			
Core XII		Psychological Testing	
Code: 21PPSC34	Hrs/Week:5	Hrs/ Sem: 75	Credit: 4

**Course Outcomes:**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of psychological testing	1 & 5	Re
CO 2	gain knowledge about the various methods of developing psychological testing	5	Re, Un
CO 3	analyse the various steps in psychological testing	5	An
CO 4	create new methods of creating tests	5	Un, Cr
CO 5	learn the skills of administering psychological tests	5	Un
CO 6	understand and analyse various testing methods	1 & 5	Un, An



**SEMESTER III****Self Study Course****Educational Psychology****Code: 21PPSSS1****Hrs/Week: 0****Hrs/ Sem: 0****Credit: 2****Course outcomes:**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of educational psychology	1 & 2	Re
CO 2	gain knowledge about the various methods of doing research in Educational Psychology	1 & 6	Re, Un
CO 3	analyse the various steps in inculcating psychology in education	6	An
CO 4	create new methods of teaching and learning methods	4 & 6	Un, Cr
CO 5	learn the skills of developing Educational Psychology	1,2 & 6	Un
CO 6	understand and analyse various problems in educational settings	6	Un, An



SEMESTER IV			
Core XIV		Organisational Behaviour	
Code: 21PPSC42	Hrs/Week: 5	Hrs/ Sem: 75	Credit: 4

**Course Outcomes:**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of organisational behaviour	1 & 7	Re
CO 2	gain knowledge about the various methods of doing research in the field of organisational behaviour	4 & 7	Re, Un
CO 3	analyse the various steps in inculcating psychology in shaping organisational behaviour	2 & 7	An
CO 4	create new methods of teaching effective organisational behaviour	7	Un, Cr
CO 5	learn the skills of shaping employee and employer behaviour	7	Un
CO 6	understand and analyse various problems in organisational settings	4 & 7	Un, An

**SEMESTER – IV****Core XV****Neuropsychology****Code : 21PPSC43****Hrs / Week: 5****Hrs / Semester: 75****Credit: 4****Course Outcomes:**

CO No	Upon completion of this course, the person will be able to	PSO Addressed	CL
CO 1	learn the basic concepts of neuropsychology	1 & 8	Re
CO 2	gain knowledge about the various methods of neuropsychology to treat people	2, 5 & 8	Re, Un
CO 3	analyse the various causes of psychological illnesses	2 & 8	An
CO 4	create new methods of treating people with mental disorders	3 & 5	Un, Cr
CO 5	learn the skill of administering neuropsychology to the needy	5 & 8	Un
CO 6	understand and analyse the basic thinking processes of people with psychological issues	4, 5 & 8	Un, An

**Programme: B. Sc. Zoology**

<b>SEMESTER - I</b>			
<b>Core I</b>		<b>Invertebrata I</b>	
<b>Code :18UZOC11</b>	<b>Hrs / Week: 4</b>	<b>Hrs / Semester: 60</b>	<b>Credits: 4</b>

**Course Outcomes:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	understand the basic concepts of animal taxonomy	1	Un
CO - 2	know the distinctive features of taxonomic classes within the phyla covered	1	Re
CO - 3	recognize the common members of each phylum and of selected classes and orders	1	Re
CO - 4	analyze the important concepts in invertebrate body structure and organization, including body, symmetry, body cavity, gut formation, Segmentation	2	Un
CO - 5	invertebrates, including locomotion, body support, reproduction, development, feeding, digestion, excretion, osmoregulation, circulation, respiration, sensory perception, behavior etc.	2	Un
CO - 6	impart information on the ecological and economic importance of invertebrates.	1	Un
CO - 7	aware of the importance and diversity of invertebrates.	1	Un
CO - 8	develop basic laboratory skills including microscopy, dissection and careful observation.	8	Cr

**SEMESTER - I****Core II****Invertebrata II****Code :18UZOC12****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcomes:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO – 1	identify common members of each phylum and of selected classes and orders	1	Un
CO- 2	understand the distinctive features of taxonomic classes within the phyla covered.	1	Un
CO -3	acquire knowledge on the importance, and diversity of the invertebrates	1	Un
CO – 4	analyze the important concepts in invertebrate body structure and organization, including body symmetry, cephalization, body cavity, gut formation, segmentation	2	Un
CO – 5	learn important biological processes in invertebrates, including locomotion, body support, reproduction, development, feeding, digestion, excretion, circulation, osmoregulation, respiration, sensory perception, behaviour. etc.	2	Re, Kn
CO – 6	aware of the ecological and economic importance of invertebrates	1	Un
CO – 7	develop basic laboratory skills including microscopy, dissection and careful observation.	8	Cr
CO – 8	use knowledge in invertebrates as basic course for further subjects on higher level study.	1	Ap



**SEMESTER - I****Allied****Allied Chemistry - I****Code :18UCHA11****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcomes:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	account for the filling of electron in orbitals and to inscribe the electronic configuration of elements	1, 3	Re, Ap
CO 2	recognize conductors, insulators and semiconductors	1, 3	Re
CO 3	adapt a method to purify organic compounds and to estimate the amount of Carbon, Hydrogen and sulphur in a sample	1, 2, 3, 7	Un
CO 4	evaluate molecular weight of a chemical compound	6	Cr
CO 5	correlate the importance of colloids in day to day life and to develop a basic understanding of emulsions	1, 5	An
CO 6	reframe glucose into fructose and vice versa and to identify protein by their colour reactions	1	Cr, An
CO 7	record the steps involved in Hoffmann's exhaustive Methylation	6	Re
CO 8	explain isoprene rule and its significance	1	Un

SEMESTER - I			
Ability Enhancement Course - Value Education			
Code : 18UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2

### Unit I : Introduction

Value education and its Relevance to present day – Meaning of Value Education  
– Education and its role – Leading a fulfilling life of universal values

### Unit II : Cultivation of Personal Values

Personal Values– Truth - Honesty and Integrity – Love –Compassion – Gratitude -  
Courage – Optimism – Friendship

### Unit III : Elimination of Negative Emotions

Overcome fear – Jealousy is harmful – Sources of jealousy - Jealousy and  
compulsiveness- Be an optimist – Gossip is Dynamite – Anger

### Unit IV : Family Values

Familial Responsibilities –Five Basic Functions of a Mother - Fathers' role in the  
family - Five Duties of Children to Parents - Indian Cultural Values

### Unit V : Spiritual Value

Cultivating Good Manners – Being Persuasive – Being authentic – Professional  
Ethics – Work Culture – Code of Conduct

**SEMESTER - II****Core III****Chordata - I****Code :18UZOC21****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcomes:**

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	acquire knowledge on the fundamental organization of chordates.	1	Un
CO-2	understand the functional organization and taxonomic position of animals	2	Un
CO-3	impart information on the basic concepts of chordate diversity	1	Un
CO-4	analyse the characters of different classes	2	An
CO-5	learn and identify the major groups within the phylum chordate	1	Un
CO-6	reason out the inclusion of different representative animals in particular class	8	An
CO-7	recognize the different structural organizations from evolutionary point of view	8	Ev
CO-8	compare the anatomy of different functional systems in chordate.	2	Ap

**SEMESTER - II****Core IV****Chordata - II****Code :18UZOC22****Hrs / Week: 4****Hrs / Semester: 60****Credits: 4****Course Outcomes:**

Co.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know the chordate diversity	1	Un
CO-2	aware of the origin of chordates	2	Un
CO-3	learn and recognize the major characteristics of chordates	1	Un
CO-4	analyse the morphology of major classes of chordate	2	An
CO-5	understand the various systems in the body of chordates	2	Un
CO-6	analyse the advancement of functional organization of chordates	8	An
CO-7	examine and understand the comparative anatomy of the functional systems in chordates	8	Ev
CO-8	apply the knowledge of representative animals to understand the evolution	2	Ap



**SEMESTER III****Core V: Developmental Biology and Evolution****Code: 18UZOC31****Hrs/Week: 4****Hrs / Sem: 60****Credits: 4****Course Outcome**

<b>CO.No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO - 1	acquire knowledge about the developmental process and the sequential changes from cellular grade of organization to organ grade of organization in multi-cellular organisms.	1,2	Un
CO- 2	compare and contrast developmental processes in different model organisms.	8	Un
CO-3	analyse the ultimate and penultimate causes of human female and male sub fertility.	6	Un, An
CO-4	provide an detailed explanations of the theories and processes of evolution.	7	Un
CO-5	examine and apply the major genetic and ecological processes underlying evolution and selection.	3	Un, An
CO-6	list and describe the evidences for evolution and its required corollaries.	1,7	Un
CO-7	recognise and explain the processes driving speciation	1,3	Un
CO-8	outline the evolution of the modern humans of the processes of social and cultural change through time	2,3	Un

**SEMESTER - III****Allied II****Plant Diversity****18UBOA31****Hrs / Week: 4****Hrs / Semester: 60****Credits: 3****Course Outcome**

CO. No.	Upon completion of this course ,students will be able to	PSO addressed	CL
1.	distinguish between diverse groups of algae, fungi, and bryophytes using their characteristic features	1, 2	An
2.	discuss different life cycle patterns in different groups	1, 2	Cr
3.	apply the practical knowledge to identify a particular group from a mixed group in the laboratory or in the field	1, 6	Ap
4.	know the basic skills and techniques in micropreparation and formulate methods to identify different groups	6	Ap
5.	understand the status of cryptogams are unique in plant kingdom	1, 2	Un
6.	infer pteridophytes are pioneer in the evolution of seed habit	1, 2	Re
7.	compare and contrast the origin and evolution of steles, foliage, seed and seedless plants.	1, 2	An
8.	understand the phylogenetic relationship between the different groups	1, 2	Un

**SEMESTER - III****NME I - Basic Biotechnology**

<b>Code :18UZON31</b>	<b>Hrs /Week: 2</b>	<b>Hrs/ Sem : 30</b>	<b>Credits : 2</b>
-----------------------	---------------------	----------------------	--------------------

**Course Outcome**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
Co-1	understand the basic principles of Biotechnology	1	Un
CO-2	distinguish between prokaryotic and eukaryotic cells from their structural studies	2	An
CO-3	understand the restriction enzymes and cloning vectors and assess their use in genetic engineering.	4	Un, Ev
CO-4	demonstrate the structure of DNA, its replication, amplification and separation of fragments	4, 5	Un
CO-5	analyse different culture media and techniques to cater the need for cell culture.	6	An
CO-6	evaluate techniques of gene delivery and cloning to adapt in manipulation of genes	5	Ev
CO-7	discuss the preparation and characterization of appropriate nano materials in the field of nanotechnology	7	Cr
CO-8	develop proficiency in aseptic laboratory techniques and standard procedures for cell culture.	8	Cr

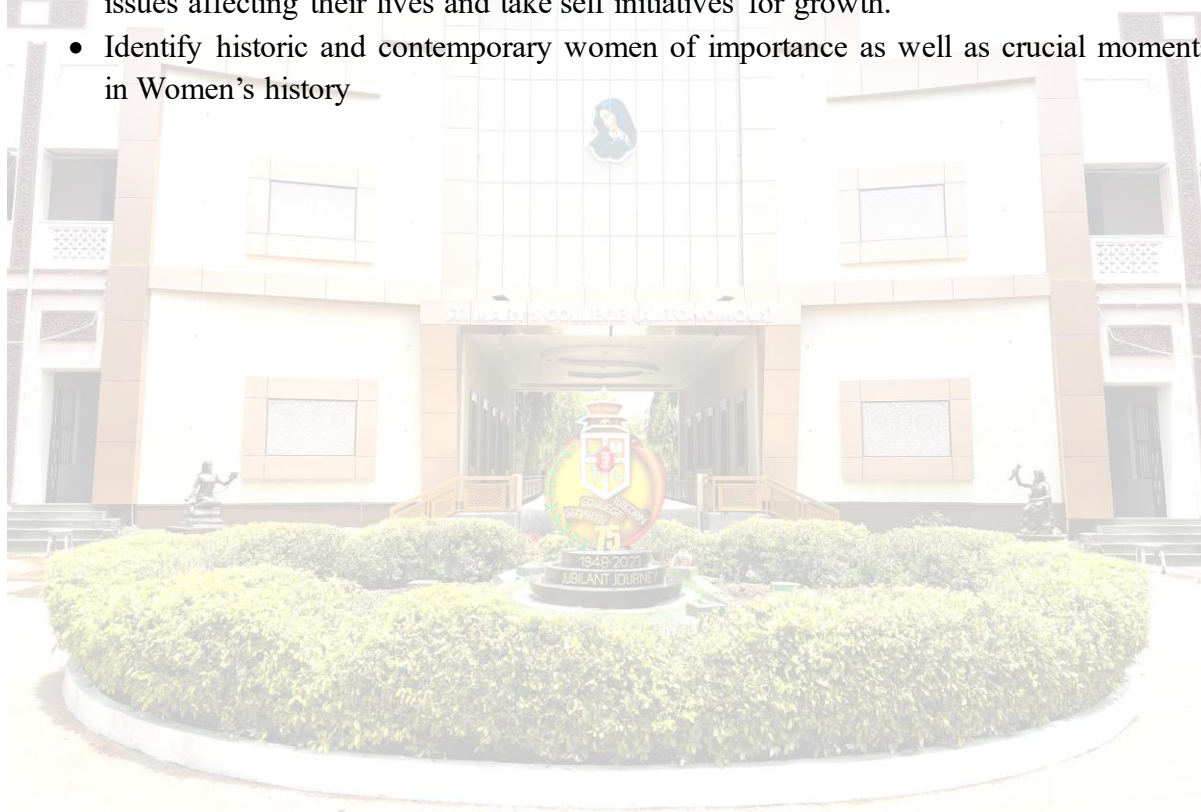
### Semester – III

#### Women's Synergy

Code : 18UAWS31	Hrs/ Week : 2	Hrs/Sem:30	Credits : 2
-----------------	---------------	------------	-------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





**SEMESTER - IV****Core IV - Biochemistry**

<b>Code :18UZOC41</b>	<b>Hrs /Week: 4</b>	<b>Hrs/ Sem : 60</b>	<b>Credits : 4</b>
-----------------------	---------------------	----------------------	--------------------

**Course Outcome**

<b>CO.No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	demonstrate an understanding of the structure of biomolecules such as carbohydrate, protein and lipids	4	Un
CO-2	evaluate significance of biomolecules in the processes that occur within living cells	4	Ev
CO-3	analyse enzymes as biological catalysts and the mechanism of their action and develop the ability to comprehend life processes	4	An
CO-4	discuss the beneficial effects of vitamins and foods that contain vitamins required for the healthy functioning of the body	2	Cr
CO-5	recall, relate and deploy knowledge in identifying deficiency diseases of vitamins from symptoms and find the remedy	6	Ap
CO-6	understand the principle, working mechanism and application of standard laboratory equipments and modern instruments	6	Un
CO-7	develop proficiency in basic laboratory techniques in biochemistry and maintain records of lab activities	7	Ap
CO-8	apply appropriate biochemical techniques to plan and carryout experiments, test hypotheses and draw conclusions to conduct project works in near future	8	Ap

SEMESTER - IV			
Allied II		Angiosperm Taxonomy and Plant Physiology	
18UBOA41	Hrs / Week: 4	Hrs / Semester: 60	Credits: 3

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	recall the botanical names	1	Un
CO-2	evaluate the distribution, evolution and phylogenetic relationship among plants.	2	Ev
CO-3	study the contribution of taxonomist in plant systematics	1	Un
CO-4	outline and recall the natural systems of classification of angiosperms	2	Re
CO-5	explain the floristic features of families in technical terms	2	An
CO-6	understand the physiological mechanisms involved in the uptake and transfer of water	2,3	Un
CO-7	comment on the major effects and physiological mechanisms of growth hormones in plants	2	An
CO-8	design and conduct scientific experiments and analyse the data critically	4, 8	Cr

**SEMESTER - IV****Core Skill Based: Clinical Laboratory Technology****Code : 18UZOS41****Hrs / week : 4****Hrs/ Sem : 60****Credits : 4****Course Outcome**

CO. No	Upon completion of this course, students will be able to	PSO addressed	C L
CO -1	understand the laboratory practices and know how to maintain the laboratory instruments	1	Un
CO - 2	analyse and distinguish various types of blood cells	2	An
CO - 3	understand the pathological diseases and explain the test for hepatitis, AIDS and intestinal parasite	3	An
CO - 4	evaluate critical thinking of biochemical test	5	Un
CO - 5	demonstrate the proficiency in basic methods of instrumentation and quantitative analytical skills used to conduct biological research	6	Un
CO - 6	develop skills in various lab techniques	7	Cr
CO - 7	acquire knowledge to handle clinical equipments	4	Un
CO - 8	design, carry out and interpret scientific experiments	8	Ap

**SEMESTER - IV****NME II Applied Biotechnology**

<b>Code :18UZON41</b>	<b>Hrs /Week: 2</b>	<b>Hrs/ Sem :30</b>	<b>Credit : 2</b>
-----------------------	---------------------	---------------------	-------------------

**Course Outcome**

<b>CO.No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the production of different Bio-products	1	Un
CO-2	examine the nature and feature of SCP and aerobic and anaerobic digestion	3,5	An
CO-3	apply the techniques to clean up the environment through various treatment methods	2,6	Ap
CO-4	create awareness to cure cancer	7	Cr
CO-5	understand the importance of biosafety and IPR	2	Un
CO-6	evaluate the synthesis and applications of bio-products	8	Ev
CO-7	adapt appropriate tools and techniques in biotechnological manipulation	7	Cr
CO-8	apply the experimental procedures to the spectrum of fields making use of Biotechnology	8	Ap



**SEMESTER V****Core VII Biotechnology (Common Core)****Code: 18UBCC51****Hrs/Week:4****Hrs/Sem: 60****Credit: 3****Course Outcome**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	describe different cloning vehicles and learn the different type of vectors	1	Kn, Un
CO-2	gain knowledge about techniques of biotechnology.	2	Un
CO-3	summarise the different techniques in animal biotechnology	2	Un, An
CO-4	compare the various techniques in plant and animal biotechnology	4	Cr
CO-5	enumerate cell culture, organ culture and stem cell culture and point out implications in health care	6	Kn, An
CO-6	distinguishes methods of alleviating environmental pollution and understand the synthesis of industrial products	5	An
CO-7	relate biotechnology and its benefits to mankind	6	Ap, Ev
CO-8	design, conduct experiments, analyse and interpret data for investigating problems in Biotechnology and allied fields	7,8	Ap

**SEMESTER V****Core VIII: Animal Physiology**

<b>Code: 18UZOC52</b>	<b>Hrs/Week: 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits: 4</b>
-----------------------	--------------------	--------------------	-------------------

**Course outcome**

<b>CO.No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	compare the structure and functions and co-ordination of organs and organ systems	1	Un
CO – 2	assess the causes, diagnosis, prevention and treatment of illnesses	2	Ev
CO – 3	develop personal healthy life style	6	Cr
CO – 4	demonstrate the different lab experiments	5	Un
CO – 5	experiential learning, analysis and drawing conclusion	4	Cr
CO-6	find way for scientific investigation	6	Ev
CO-7	develop various skills which will be helpful in expressing ideas and views clearly and effectively	7	Ap
CO-8	imbibe ethical, moral and social values in personal and social life leading to highly cultured and civilized personality	8	Cr

**SEMESTER -V****Core IX Cell Biology and Genetics**

<b>Code: 18UZOC53</b>	<b>Hrs/week : 5</b>	<b>Hrs/Sem: 75</b>	<b>Credits: 4</b>
-----------------------	---------------------	--------------------	-------------------

**Course Outcome**

<b>CO.No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the organization of the cell and to differentiate between prokaryotic and eukaryotic cell.	2	Un
CO-2	describe the structure and functioning of cell organelles as a system to carry out cellular processes	2	Un
CO-3	analyse the complexity and harmony of the cell from the acquired knowledge	2	An
CO-4	explain the types of chromosome; composition, structure, and replication of DNA	4	Ev
CO-5	demonstrate the genetic basis of Mendelian and non-Mendelian inheritance	5	Un
CO-6	develop the ability to think critically, analyse and use the information gained to solve problems related to genetics	6	Cr
CO-7	evaluate hereditary patterns for genetic disorders by applying genetic information to innovate solutions for health related issues	6	Ev
CO-8	apply the practical and conceptual knowledge of Cell biology and Genetics to understand other fields of biology	8	Ap

## Semester - V

### Common Skill Based Core      Computer for Digital Era and Soft Skills

Code : 18UCSB51

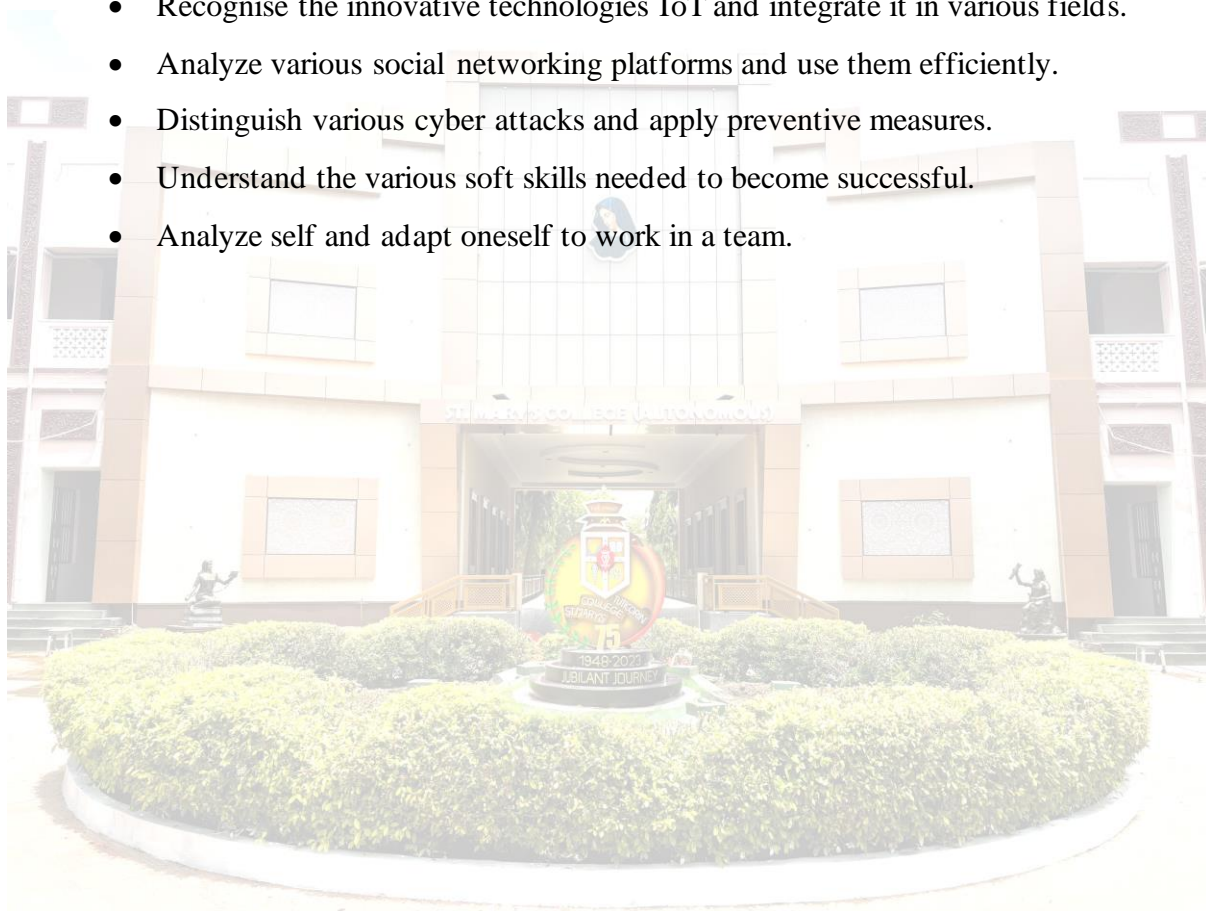
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.





**SEMESTER –VI****Core X: Immunology and Microbiology****Code: 18UZOC61****Hrs/week : 5****Hrs/sem: 75****Credits: 4****Course outcome**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the importance of immune system, immune organs and immunoglobulins.	2	Cr
CO -2	identify structure and characteristics of different types of Lymphoid organs	3	Un
CO-3	analyse the structure and functions of immune systems	4	Un
CO-4	narrate and explain antigen and antibody	5	Un
CO-5	analyse the types of immunoglobulins	2	Cr
CO-6	understand the structure, classification and culture techniques of microbes	7	Un
CO-7	analyse and distinguish food poisoning, food spoilage and preservation methods	8	An
CO-8	determine the nature of the microbes and to realize their beneficial and harmful effects	3	Un

**SEMESTER - VI****Core XI : Biostatistics and Bioinformatics**

<b>Code : 18UZOC62</b>	<b>Hrs/Week : 5</b>	<b>Hrs/Sem : 75</b>	<b>Credits : 4</b>
------------------------	---------------------	---------------------	--------------------

**Course Outcome**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO 1	attain an insight on statistical methods for analysis of biological data	1	Kn
CO 2	acquire knowledge on the bio informatics concepts for analyzing molecular data	1	Kn
CO 3	identify the problems in data analysis and match the appropriate statistical method and corresponding software	4	Un
CO 4	analyse and use the bioinformatics tools for advanced sequence alignment, database searches, genome analysis and protein structure studies	8	Ap
CO 5	undertake statistical operations in biology	7	Ap
CO 6	operate commonly used bioinformatic tools and statistical methods and understand their limitations	8	Ap
CO 7	apply bioinformatics in life science research	8	Ap
CO 8	understand and critically evaluate the data analysis procedures in publications of molecular biology research	2,3	Un

**SEMESTER VI****Core XII Ecology and Biodiversity****Code: 18UZOC63****Hrs/Week: 4****Hrs/Sem: 60****Credits:4****Course Outcome**

<b>CO.No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO – 1	understand and relate the interactions and the interdependence among environmental factors and living organisms.	1,2	Un
CO – 2	compare the adaptations of the organisms in different habitats	2	Un
CO – 3	analyse the mechanisms regulating the dynamics composition and organization of communities	2	Un,An
CO – 4	explore the interactions between organisms, the dynamics of populations and environment	1,3	Un,An
CO – 5	explain different levels of biodiversity	1	Un,
CO – 6	discuss the direct and indirect values of biodiversity	1,3	Cr
CO-7	identify key threats to biodiversity evaluate management options for conserving biodiversity	1,3	Ap,Ev
CO-8	develop skills and competencies for career in eco-conservation and Eco- tourism	7	Ap

SEMESTER I			
Core I		Invertebrata	
Course Code: 21UZOC11	Hrs/Week : 6	Hrs/Sem : 90	Credits : 6

**Course Outcomes:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	explain the distinctive features of taxonomic classes within the phyla covered	1	Un
CO – 2	illustrate the important concepts in invertebrate body structure and organization, including body symmetry, body cavity, gut formation, segmentation	2	Un
CO – 3	examine the important biological processes in invertebrates, including locomotion, body support, reproduction, development, feeding, digestion, excretion, osmoregulation etc.	3	An
CO – 4	outline the ecological and economic importance of invertebrates.	3	An
CO – 5	analyse of the importance and diversity of invertebrates	5	An
CO – 6	develop basic laboratory skills including microscopy, dissection and careful observation.	6	Cr



SEMESTER I			
PROFESSIONAL ENGLISH FOR ZOOLOGY – I			
Course Code:21UZOPE1	Hrs/ Week : 2	Hrs/ Sem : 30	Credits : 2

**Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	implement their skills in conversing with confidence in an intelligible and acceptable manner	7,8	Ap
CO-2	apply their reading skills to read unfamiliar scientific texts independently and comprehend it	7,8	Ap
CO-3	infer the significance of scientific writing and apply it for writing scientific articles in journals	7,8	Un
CO-4	identify the various types of sentences and use them in the relevant context	7,8	Ap
CO-5	listen to lectures and interpret critically	7,8	Ev
CO-6	develop their communication and presentation skills	7,8	Cr



## SEMESTER - I

### Ability Enhancement Course -Value Education

Code : 21UAVE11	Hrs/Week : 2	Hrs / Semester: 30	Credits : 2
-----------------	--------------	--------------------	-------------

#### Unit I: Introduction to Value Education

Concept of Values -Types of Values- Approaches to values - Benefits of Value Education-Characteristics of Values

#### Unit II: Human Values

Human Values -Sources of Human Values - Love - Compassion - Gratitude - Courage - Optimism - Forgiveness- the need and urgency to reinforce Human Values

#### Unit III: Social Values

Role of family and society in teaching values - Role of educational institutions in inculcating values-Three general functions of education for society-Self-Reflection- Our society's needs - Social Responsibilities of a student

#### Unit IV: Spiritual Values

Spiritual Values - Spiritual Development -Moral Development - Importance of Spiritual Values - Cultivation of Spiritual Values -Five most common spiritual values - Spiritual Resources

#### Unit V: Values for Life Enrichment

Goal Setting - Building relationship - Friendship - Love relationship - Family relationship - Professional relationship Interpersonal Relationship -Essential Life Skills that Help in Students Future Development-Life Enrichment Skills Domain

#### Books for Reference:

1. Sneha M. & K. Pushpanadham Joshi. *Value Based Leadership in Education Perspective and Approaches*, Anmol Publications Pvt. Limited, 2002.
2. Venkataiah.N. *Value Education*, APH Publishing, 1998
3. Pramod Kumar M. *A Handbook on Value Education*, Ramakrishna Mission Institute of Culture (RMIC) 2007
4. Jagdosh Chand, *Value Education*, Shipra Publication 2007
5. Indrani Majhi (Shit) Ganesh Das, *Value Education*, Laxmi Publication Pvt. Ltd., 2017
6. Arumugam, N. S. Mohana, Lr.Palkani, *Value Based Education*, Saras Publication 2014

## SEMESTER II

### Core II

### Chordata

Course Code: 21UZOC21

Hrs/ Week : 6

Hrs/ Sem : 90

Credits : 6

### Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the fundamental organization of chordates.	1	
CO-2	discuss the basic concepts of chordate diversity	3	Un
CO-3	analyze the characters of different classes of the chordates	2,3	An
CO-4	categorize the inclusion of different representative animals in particular class	2	An
CO-5	evaluate the correlation of structural organization of chordates from evolutionary point of view	1	Ev
CO-6	compare the anatomical features and their respective functions in chordate animals	2	An



SEMESTER II			
PROFESSIONAL ENGLISH FOR ZOOLOGY – II			
Course Code: 21UZOPE2	Hrs/ Week : 2	Hrs/ Sem : 30	Credits : 2

**Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	interpret scientific illustrations and develop paragraphs and essays	2,7	Un
CO-2	write passages by comparing and contrasting the salient features of living organisms	2,7,8	Re
CO-3	illustrate descriptive processes in the biological system	2,8	Un
CO-4	identify problems and suggest solutions for environmental sustainability by case studies	7	Re
CO-5	deliver lectures on various scientific topics by identifying the context	8	Re
CO-6	integrate the different methods of notes making for efficient annotation of lectures	6,8	Cr





SEMESTER III			
Core III		Developmental Zoology	
Course Code: 21UZOC31	Hrs/ Week: 4	Hrs/ Sem: 60	Credits: 4

#### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand the concepts of developmental biology	2	Un
CO-2	describe the developmental process and embryogenesis	3	Re
CO-3	explain the sequential changes from cellular grade of organization to organ grade of organization	2	Un
CO-4	compare the types of extra embryonic membrane and the nature and physiology of placenta	3	An
CO-5	implement the new technologies in embryology	6	Ap
CO-6	recommended the advanced reproductive technologies for the welfare of man	6	Ev



**SEMESTER - III****Allied III****Plant Diversity****Course Code: 21UBOA31****Hrs / Week: 4****Hrs / Semester: 60****Credits:3****Course Outcomes:**

<b>CO. No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
1.	consider the criteria of classification and outline the system of classification (algae, fungi, bryophytes, pteridophytes and gymnosperms) as proposed by different taxonomist	1	An
2.	work out micropreparation techniques to study the specimen and to reveal the histological architecture using compound light microscope	5	An
3.	illustrate the key features of these plants and explain their characters and life cycle pattern to distinguish different plant groups	3	Un, Ap
4.	explore and express the ecosystem services and economic benefits of these groups of plants	3	Ap
5.	assign the taxonomic ranks to indicate its systematic position and evaluate the evolution of plant species	1, 2	Un, Ev
6.	trace the origin and evolution of steles, foliage and seed from seedless plant groups and comment pteridophytes are pioneer in the evolution of seed habit	1, 2	Re

**SEMESTER III****NME I****Basic Biotechnology****Course Code: 21UZON31****Hrs/ Week : 2****Hrs/ Sem: 30****Credit: 2****Course Outcome**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	appraise the scope and importance of biotechnology by understanding the basic structure and functions of cells	1,2	An
CO-2	outline the structure of DNA, and use various techniques to visualize, manipulate and separate the DNA molecules	2	An
CO-3	summarize the basics of restriction enzymes and cloning vectors and apply the various gene manipulation techniques to generate genetically modified organisms	1,6	Un
CO-4	evaluate techniques of gene delivery and cloning to adapt in generation of genetically modified organisms	1,6,8	Ev
CO-5	discuss the preparation and characterization of nano materials in the field of nanotechnology	6,7	Un
CO-6	develop proficiency in aseptic laboratory techniques and standard procedures for cell culture.	6	Cr

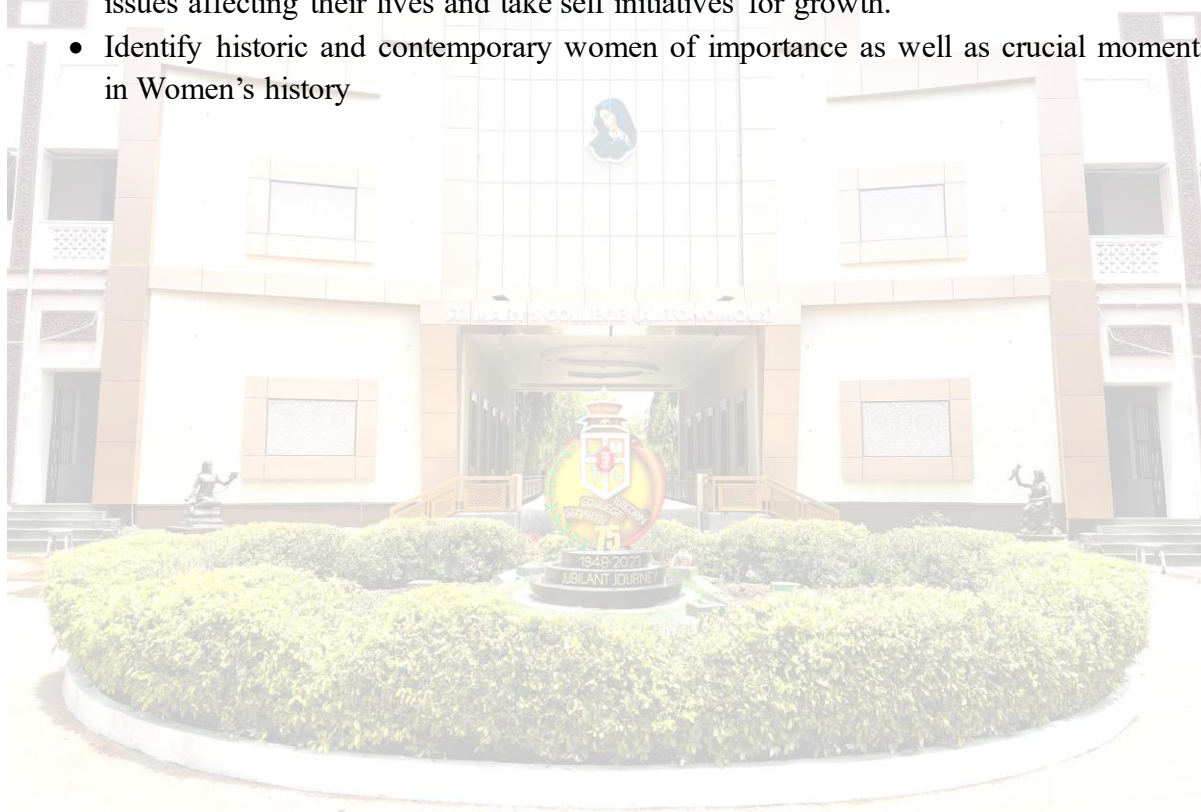
### Semester – III

#### Women's Synergy

<b>Code : 21UAWS31</b>	<b>Hrs/ Week : 2</b>	<b>Hrs/Sem:30</b>	<b>Credits : 2</b>
------------------------	----------------------	-------------------	--------------------

#### Course Outcome

- To know about Women's health issues including menstruation, pregnancy, child birth etc, thereby taking care of themselves.
- Create awareness about their own biases, fears and comfort levels and encourage to dream and fuel their own growth and self development.
- Engage in promoting social justice and women rights
- Create platforms and facilitate the young women to operate symbiotically towards issues affecting their lives and take self initiatives for growth.
- Identify historic and contemporary women of importance as well as crucial moments in Women's history





## SEMESTER IV

### Core I Biochemistry and Bioinstrumentation

Course Code: 21UZOC41      Hrs/ Week: 4      Hrs/ Sem: 60      Credits: 4

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the structure and significance of biomolecules in life processes	2	Un
CO-2	understand the principle, working mechanism and application of standard laboratory equipments and modern instruments	6	Un
CO-3	analyze enzymes as biocatalysts, the mechanism of their action and develop the ability to comprehend life processes	4	An
CO-4	demonstrate the beneficial effects of vitamins, their sources for the healthy functioning of the body	5	Ap
CO-5	relate and deploy knowledge in identifying deficiency diseases of vitamins from symptoms and find the remedy	8	An
CO-6	apply appropriate biochemical techniques to plan and carryout experiments, test hypotheses and draw conclusions to conduct project works in near future	6	Ap



**SEMESTER - IV****Allied IV Angiosperm Taxonomy and Plant Physiology****Course Code: 21UBOA41****Hrs / Week : 4****Hrs / Semester: 60****Credits:3****Course Outcomes:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	study the morphological variation of vegetative part of angiosperms in relation to environmental condition	1	Un
CO-2	characterize the morphological features and architecture of floral components and categorize the types of inflorescences	2	Ev
CO-3	layout and recall the natural systems of classification of angiosperms as proposed by Bentham and Hooker	1,2,4	Re
CO-4	understand the physical process associated with water absorption, transport and transpiration	2,3	Un
CO-5	analyze light enhance photochemical reaction, synthesis of ATP and NADPH and fixation of carbon dioxide into organic compound	2,3	An
CO-6	conduct scientific experiments to record the data	4,8	Ev

## SEMESTER IV

### Skill Based Elective      A. Clinical Laboratory Technology

<b>Course Code: 21UZOS41</b>	<b>Hrs/ Week: 2</b>	<b>Hrs/ Sem: 30</b>	<b>Credits: 2</b>
------------------------------	---------------------	---------------------	-------------------

#### Course Outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the laboratory practices and to develop skills in various lab techniques	6,7	Un
CO-2	analyze and distinguish various types of blood cells	2,6	An
CO-3	understand the pathological diseases and explain the test for hepatitis,AIDS and intestinal parasite	5,6	Un
CO-4	demonstrate the proficiency in basic methods of instrumentation and quantitative analytical skills used to conduct biological research	6,7	Ap
CO-5	acquire knowledge to handle clinical equipments	6	Ap
CO-6	design,carryout and interpret scientific experiments	6,7	Ap



SEMESTER IV			
NME II		Applied Biotechnology	
Course Coe: 21UZON41	Hrs/ Week: 2	Hrs/ Sem: 30	Credit: 2

#### Course Outcomes

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the production of different bio-products	2	Un
CO-2	apply the techniques to clean up the environment through various treatment methods	5	Ap
CO-3	implement gene therapy methodology for treatment of cancer	8	Ap
CO-4	interpret the importance of bio safety and IPR	6	Un
CO-5	evaluate the synthesis and applications of bio-products	6	Ev
CO-6	adopt appropriate tools and technique in biotechnological manipulation	8	Ap





**SEMESTER V****Core VI****Animal Physiology****Course Code : 21UZOC51****Hrs / Week : 4****Hrs /Sem : 60****Credits : 4****Course Outcomes**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	identify the structure and functions and co-ordination of organs and organ systems	1	Re
CO -2	indicate the causes, diagnosis, prevention and treatment of illnesses	3	Un
CO – 3	investigate and report on experiments and observations clearly and effectively	6	An
CO – 4	apply explanatory skills to unravel the complexities of life processes and behaviour	5	Ap
CO – 5	criticize physiological challenges and processes under fluctuating environmental conditions	6	Ev
CO – 6	integrate the physiological issues to promote health and welfare of society	8	Cr

SEMESTER V			
Core VII		Cell Biology and Genetics	
Course Code: 21UZOC52	Hrs/week : 4	Hrs/sem: 60	Credit: 4

### Course Outcomes

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the organization of the cell and to differentiate between prokaryotic and eukaryotic cell.	2	Un
CO-2	describe the structure and functioning of cell organelles as a system to carry out cellular processes	1,2	Re
CO-3	interpret the structure and types of chromosome and composition, structure, and replication of DNA	2,3	Re
CO-4	analyze the genetic basis of Mendelian and non-Mendelian inheritance and use the information gained to solve problems related to genetics	2,5	An
CO-5	evaluate hereditary patterns for genetic disorders and solutions for health and related issues.	3,8	Ev
CO-6	apply the practical and conceptual knowledge of Cell biology and Genetics in other fields of biology	6	Ap



## SEMESTER V

### Core VIII

### Ecology

**Course Code: 21UZOC53**

**Hrs / Week : 4**

**Hrs / Sem: 60**

**Credits:4**

### Course Outcomes

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	recall variety of ways that organisms interact with both physical and the biological environment	1,2	Re
CO – 2	explain the structure and impact of biogeochemical cycles	1,2	Un
CO – 3	classify major habitats found on land and water	3	Ap
CO – 4	evaluate the global scale of environmental issues	5	Ev
CO – 5	select government policies and green economy for sustainable development	5	Ev
CO – 6	design field and laboratory experiments in a systematic way	6	Cr



## SEMESTER V

### Core Elective

### A. Introduction to Research

Course Code: 21UZOE51

Hrs / Week: 4

Hrs / Sem: 60

Credits: 4

### Course Outcomes

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the scientific ideas, tools, methods and techniques in research	4	Un
CO-2	identify appropriate research topics and parameters	8	Re
CO-3	apply the information regarding literature collection and citing the references	5	Ap
CO-4	analyze the components of scholarly writing in a thesis and research report	6	An
CO-5	evaluate critical thinking and scientific approach in the essentials of research	6	Ev
CO-6	develop new scientific tools, concepts and theories to understand and solve scientific problems	4	Cr





SEMESTER V			
Core Elective		B. Evolutionary Biology	
Course Code: 21UZOE52	Hrs/ Week: 4	Hrs/ Sem: 60	Credits: 4

### Course Outcomes

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the theories and processes of evolution	1	Un
CO-2	recall the processes driving variation, natural selection and speciation	2	Re
CO-3	appraise the evolutionary significance of mimicry and protective colouration	6	An
CO-4	examine the evidences for evolution	5	An
CO-5	evaluate the various processes concerned with the evolution of man	6	Ev
CO-6	discuss the biological and cultural evolution of man	4	Un



### Semester - V

#### Common Skill Based Core

#### Computer for Digital Era and Soft Skills

Code : 21UCSB51

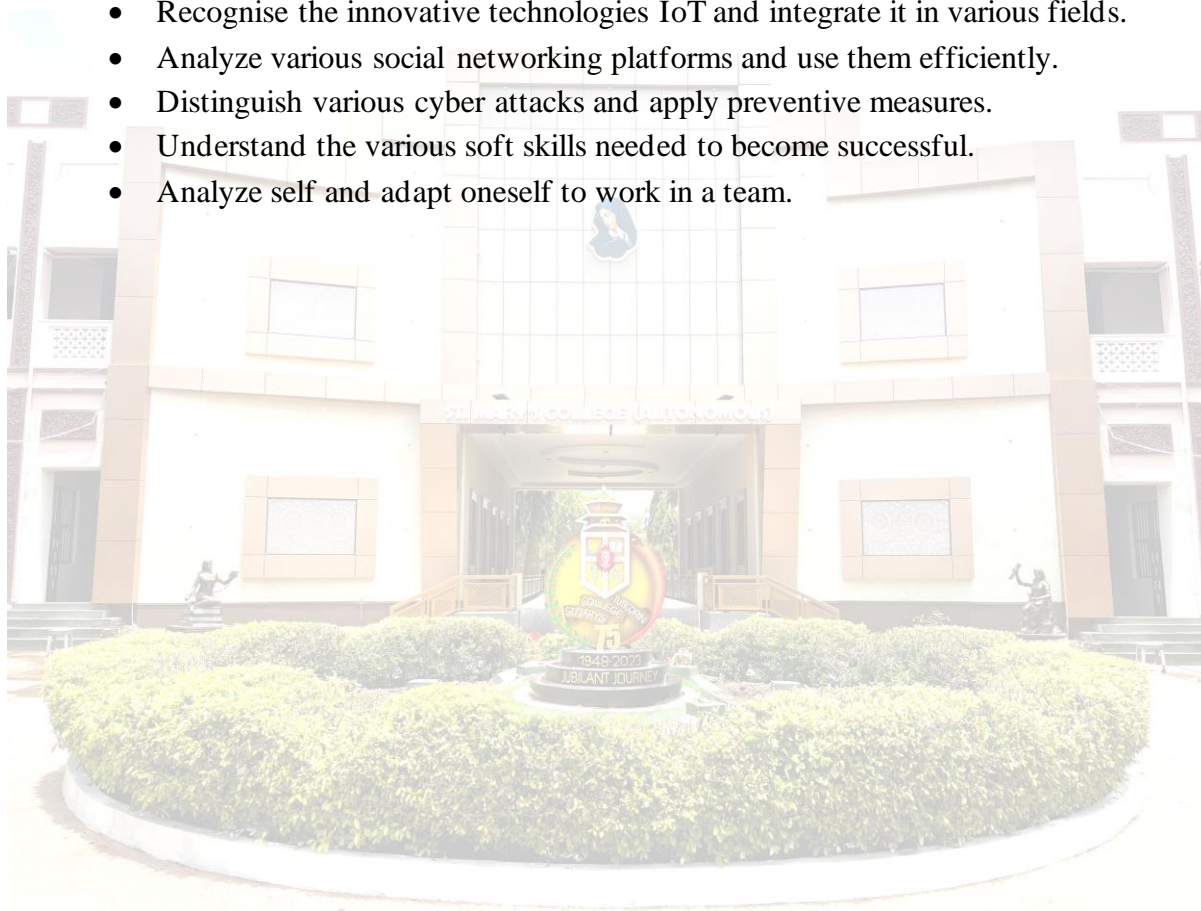
Hrs / Week : 2

Hrs / Sem : 30

Credits : 2

#### Course Outcome

- Identify different types of computer systems.
- Classify various types of software being used.
- Compare various digital payments and use them in day to day life.
- Recognise the innovative technologies IoT and integrate it in various fields.
- Analyze various social networking platforms and use them efficiently.
- Distinguish various cyber attacks and apply preventive measures.
- Understand the various soft skills needed to become successful.
- Analyze self and adapt oneself to work in a team.



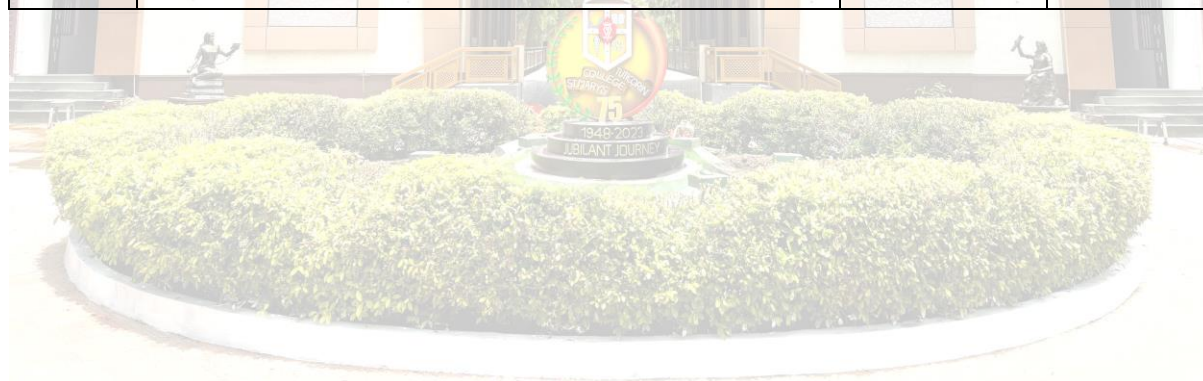
## SEMESTER VI

### Core IX Immunology and Microbiology

<b>Course Code: 21UZOC61</b>	<b>Hrs/ Week: 4</b>	<b>Hrs/ Sem: 60</b>	<b>Credits: 4</b>
------------------------------	---------------------	---------------------	-------------------

### Course Outcome

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	identify the basis of immune responsiveness and associated organs	2	Re
CO-2	compare the mechanism of B and T cell activation	5	An
CO-3	acquire knowledge on structure and functions of immunoglobulins and classify them.	2	Ap
CO-4	explain the basic structure of microbes, symptoms of microbial diseases and preventive measures	1	Un
CO-5	analyse the causes and prevention of food poisoning and food spoilage.	2	An
CO-6	develop skills in fundamental techniques in immunology and microbiology including identification of lymphocytes, sterilization, isolation and culture of bacteria	6	Cr



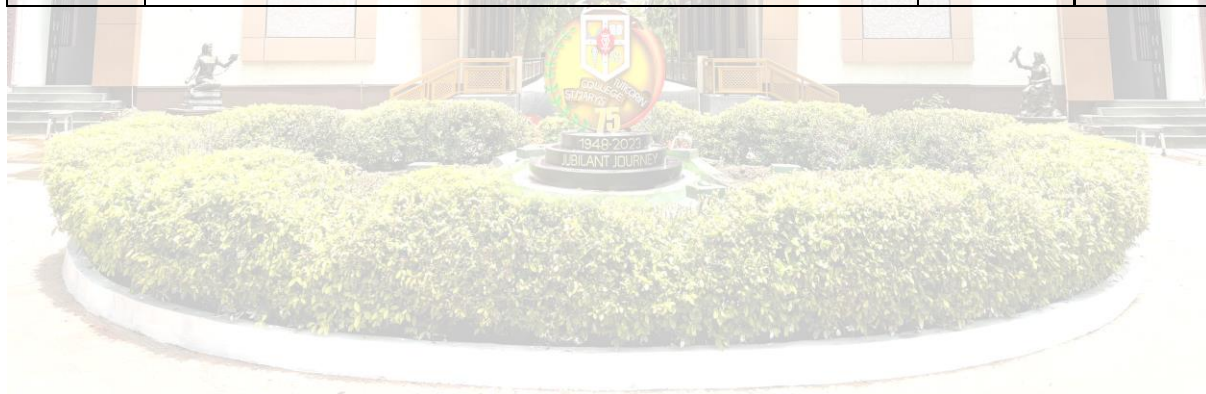
## SEMESTER VI

### Core X Biostatistics and Bioinformatics

<b>Course Code: 21UZOC62</b>	<b>Hrs/ Week : 4</b>	<b>Hrs/ Sem: 60</b>	<b>Credits: 4</b>
------------------------------	----------------------	---------------------	-------------------

### Course Outcome

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	attain an insight on statistical methods for analysis of biological data using appropriate softwares	4	Un
CO-2	apply the knowledge on the usage of bioinformatics tools for sequence alignment, data base searches, genome analysis and protein structure studies	4	Ap
CO-3	undertake statistical operations in biological data analysis	4,8	Ap
CO-4	operate commonly used bioinformatic tools and statistical methods and understand their limitation	4	An
CO-5	apply bioinformatics in life science research	4,5	Ap
CO-6	critically evaluate the data analysis procedures in publications of molecular biology research	6	Ev





**Programme: M.Sc. Zoology**

<b>SEMESTER - I</b>			
<b>Core I Cell and Molecular Biology</b>			
<b>Code 19PZOC11</b>	<b>Hrs/week : 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits: 4</b>

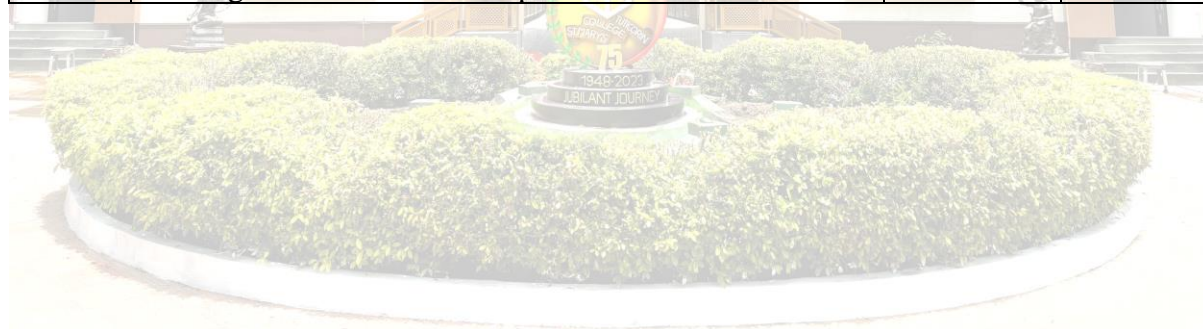
**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquire knowledge on the structure and function of biological membrane including the roles of gradients in energy transduction	1	Un
CO-2	compare the different types of transporters and its functions	2	An
CO-3	relate the mechanisms of cell to cell signaling, including intracellular second messenger pathways	1, 4	An
CO-4	understand the structure and function of proteins including the roles of amino acids in protein folding and protein- protein interactions.	1	Un
CO-5	identify the regulation of gene at the transcriptional and post transcriptional level	3	Cr
CO-6	illustrate the structural organization of gene and the control of gene expression	5	Cr
CO-7	explain the cell cycle and its regulation, including the mechanism of mitosis and meiosis	6, 7	Ap
CO-8	demonstrate the molecular pathways that are altered in cancers, including oncogenes, tumor suppressors, apoptosis and DNA repair	6, 8	Ap

SEMESTER I			
Core II : Genetics and Evolution			
Code: 19PZOC12	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	examine the chromosomes and genetic recombination and interpret linkage and mapping data	1	Kn ,Un
CO-2	discuss the theories of crossing over and construction of chromosome map	1	Kn,Un
CO-3	infer genetic recombination mechanisms in bacteria and assess the genetic and clinical significance of transposons	2	Un,Ev
CO-4	analyse changes in gene and genotypic changes and evaluate its consequences in populations	6	An, Ev
CO-5	discriminate various human genetic disorders and genetic variations in drug metabolism	4	An
CO-6	provide detailed explanations of neo – Lamarkism, neo – Darwinism, stabilizing and experimental evolution	1 , 6	Un,Cr
CO-7	examine, summarize and integrate central ideas underpinning evolutionary patterns and processes from the molecular to the macro scale	2	Un,Ap,Cr
CO-8	critically analyse, issues such as speciation mechanisms relating to the formation of species.	2	Un, An



**SEMESTER I****Core III : Biochemistry****Code: 19PZOC13****Hrs/Week: 5****Hrs/Sem: 75****Credits: 4****Course Outcome:**

CO.No	Upon completion of this course,students will be able to	PSO addressed	CL
CO- 1	classify and explain structure and functions of biomolecules	1	Un
CO-2	relate between biology and chemistry	2, 4	Un
CO-3	compare the specificity of enzymes (biochemical catalysts), and the chemistry involved in enzyme action.	3	An
CO-4	recognise the metabolic pathways of protein, amino acids,carbohydrates, fats and nuceic acids	1	Ev
CO-5	relate to real life situations and applications in research and industry	4	Un
CO-6	have firm foundations in fundamental applications of biomolecules	7	Un
CO-7	be skilled in solving the problems of biochemistry	5, 8	Ap
CO-8	design,carryout, record and analyse the results of chemical experiments	6	Cr

SEMESTER –I			
Core IV: Applied Entomology			
Code :19PZOC14	Hrs/Week : 5	Hrs/Sem : 75	Credits : 4

**Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	know about the diversity of insects, classify and state their major different orders	1	Un
CO-2	develop skills for collecting, mounting and preserving insects	1, 6	Cr
CO-3	acquire knowledge on beneficial insects, helpful insects and insects of medicinal and aesthetic value	1	Un
CO-4	analyse the main pest species of crops based on the symptoms of the attack and morphological traits	2	An
CO-5	explain the life cycle of main pest species on crops and insect vectors	2, 1	Un
CO-6	identify, collect and manage different insects of household, man and animals.	4, 6	Ap
CO-7	apply appropriate indirect and direct measures to prevent or reduce pest attack	5, 7	Ap
CO-8	plan and implement crop protection according to the IPM principles	4, 8	Ev, Cr





SEMESTER II			
Core V : Animal Physiology			
Code :19PZOC21	Hrs/ Week: 5	Hrs/Sem: 75	Credits: 4

**Course outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	compare digestive and circulatory system and infer regulation of blood pressure and heart beat	1, 2	Un,An
CO-2	understanding mechanisms of respiration and point out physiological adaptations to special conditions	1, 2	Un,An
CO-3	indicate the relationship between different environments and excretory organs and osmo ionic regulation	5	Ap, An
CO-4	appraise neuromuscular and sensory mechanisms and relate the physical and chemical phenomena	2 , 6	Un,Ap
CO-5	associate the endocrine glands with physiological actions and develop healthy life style	2, 4	Un,Cr
CO-6	perceive the steps involved in transmission of nerve impulses	5	Ev
CO-7	relate the structure and physiology of muscular system	7	Un
CO-8	elaborate the integration and interactions of hormones	8	Cr

**SEMESTER II****Core VI : Immunology**

<b>Code: 19PZOC22</b>	<b>Hrs /Week : 5</b>	<b>Hrs / Sem: 75</b>	<b>Credits : 4</b>
-----------------------	----------------------	----------------------	--------------------

**Course Outcome:**

<b>CO. No</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>C L</b>
CO-1	analyse the genetic basis of antibody diversity, organization and arrangement of immunoglobulin genes	1	An
CO-2	understand the principle of the routine serologic procedures performed in the clinical laboratory.	1, 2	Un
CO-3	describe the structure and function of MHC molecules and the immunologic responses involved in preventing and combating infections	1	Un
CO-4	describe the basic mechanisms, distinctions and functional interplay of innate and adaptive immunity	1, 4	Un
CO-5	describe immunological response and how it is triggered and regulated	1	Un
CO -6	transfer knowledge of Immunology into clinical decision-making	5	Ev
CO-7	discuss the role and advances being made in transplantation with artificial organs and the aberrations of the immune system such as immunodeficiency and autoimmunity	1, 6	Cr
CO- 8	familiarize the modern laboratory techniques applicable in the diagnosis and monitoring of diseases involving the immune system.	6	Cr

**SEMESTER – II****Core VII : Biotechnology****Code : 19PZOC23****Hrs / week : 5****Hrs / Sem : 75****Credits : 4****Course Outcome:**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	outline about the introduction and history of Biotechnology	1	Un
CO-2	get more insight on the basic properties and advanced functions of different vectors.	3	Un
CO-3	attain research skills in the field of manipulations of animal cell and tissue culture.	7	Ap
CO-4	understand the beneficial effects of microorganisms and the impact of microbial production on human health	3	Un
CO-5	apply their knowledge in designing techniques for enzyme production in small and large scale industries	8	Ap
CO-6	evaluate the need and impact of biotechnological methods in enzyme production through industries	3	Ev
CO-7	imbibe the practical and theoretical knowledge of nanomaterials essential for pursuing higher studies.	2	Un
CO-8	achieve skills in handling tools and techniques in Biotechnological manipulation.	6	Ev

**SEMESTER II****CoreVIII****Microbiology****19PZOC24****Hrs/ Week : 4****Hrs / Sem : 60****Credits : 4**

**Vision:** To prepare graduate students with thorough knowledge and understanding of the core concepts in the field of Microbiology

**Mission:** To equip the students with knowledge about Taxonomy, organization, multiplication and infection of microbes and to develop expertise in microbiological techniques.

**Course Outcome:**

CO.NO	Upon completion of this course, the students will be able to	PSO addressed	CL
CO- 1	classify micro organisms focusing on the modern trends of Taxonomy	1	Un
CO- 2	prepare media to be utilized in the cultivation of microorganisms	2	Ev
CO-3	understand the structural organization and life cycle of microorganisms	2	Un
CO-4	explain the role of microorganisms in fermentation, medicine and the production of microbial products	2	An
CO-5	gain familiarity with the unique role of pathogens in human infectious diseases	2	Ev
CO-6	identify the methodologies used in disease treatment and prevention	6	An
CO-7	demonstrate practical skills in the use of technologies and methods common to microbiology	8	Ev
CO-8	apply scientific methods in the design and execution of experiments	8	Ap



**SEMESTER - III****Core IX Computational Biology****Code : 19PZOC31****Hrs/Week : 6****Hrs/Sem : 90****Credits : 4****Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	analyse and interpret results of descriptive statistical methods effectively	1, 3	An, Ev
CO-2	apply the methods of hypothesis testing, statistical inference and design	4	Ap
CO-3	appreciate biological data in statistical perspective correctly and contextually	4	Un
CO-4	infuse critical appraisal skills to assess the research data and produce original research	7	Cr
CO- 5	carry out correlation and regression analysis and recognise theoretical distributions	6	Un, An
CO -6	formulate and test using appropriate statistical software	4	Cr
CO-7	implement statistical methods and statistical software programmes to a variety of practical problems	5	Ap
CO- 8	demonstrate the mastery of concepts of bioinformatics	1, 2	Un,



**SEMESTER - III****Core XI - Developmental Biology**

<b>Code : 19PZOC33</b>	<b>Hrs / Week : 5</b>	<b>Hrs/ Sem : 75</b>	<b>Credits : 4</b>
------------------------	-----------------------	----------------------	--------------------

**Course Outcome:**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	define the process of gametogenesis and describe the structure of gametes	1, 2	Un
CO-2	outline the events that lead up to and comprise the process of fertilization	2	Un
CO-3	compare and contrast the patterns of cleavage in the various model organisms	1, 2	An
CO-4	Discuss the morphogenetic movements, cellular mechanisms and the functions of gastrulation	1	Un, Cr
CO-5	elaborate tissue interactions and the development of organ systems in vertebrates	1	Un, Cr
CO-6	analyse the role of genes, stem cells and the impact of teratogens in development	5	An
CO-7	illustrate the role of hormones in amphibian and insect metamorphosis	6, 1	Un
CO-8	demonstrate the ability of regeneration in different groups of organisms	6, 1	Cr



**SEMESTER – III****Core XII : Research Methodology****Code : 19PZOC34****Hrs / Week : 5****Hrs / Sem : 75****Credits : 4****Course Outcome:**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	demonstrate critical thinking and scientific approach in the design and implementation of an experiment.	1,3	Un, Cr
CO-2	effectively communicate scientific ideas in both written and oral formats	1,2	Un, Ev
CO-3	acquire a broad range of basic laboratory skills to perform experiments and for employment prospects	5	Un, Ap
CO-4	demonstrate and apply a working comprehension of the technical and procedural aspects of laboratory testing, safety and ethical standards of practices	4	Ap
CO-5	write a research report and thesis and Appreciate the components of scholarly writing and evaluate its quality.	6	Cr,Ev
CO-6	verify and test important facts and find solutions to scientific problems	7	An
CO-7	develop new scientific tools, concepts and theories to solve and understand scientific problems	7	Cr
CO-8	design and conduct independent laboratory or field research that is consistent with the highest standards and practices of research	8	Ap

**SEMESTER - IV****Core XV - Commercial Zoology**

<b>Code :19PZOC43</b>	<b>Hrs /Week: 5</b>	<b>Hrs/ Sem : 75</b>	<b>Credits : 4</b>
-----------------------	---------------------	----------------------	--------------------

**Course Outcome:**

<b>CO. No</b>	<b>upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	identify, choose suitable bees and maintain bee hive successfully	2	Ev
CO-2	understand the behavior of bees, prevent swarming and manage bee colonies	3	Un
CO-3	inspect bee colony, identify diseases of bees, recognize their enemies and take necessary control measures	4	An, Ap
CO-4	apply their knowledge to implement the procedure to extract honey and other bee products and to preserve honey	5	Ap
CO-5	demonstrate an understanding of mulberry cultivation, silkworm rearing and silk reeling	1	Un
CO-6	identify diseases, pests of mulberry and silkworm and adapt control measures	4	Ap, Cr
CO-7	utilize their knowledge in harvesting, marketing cocoons and reeling operations	5	Ap
CO-8	develop practical proficiency in apiculture and sericulture from the lab work and visit to the apiary and the department of sericulture	6	Ap



SEMESTER - IV			
Elective I		C Clinical Biology	
Code : 19PZOE41	Hrs / week : 4	Hrs/ sem : 60	Credits : 4

**Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO -1	Understand the overview on clinical biology and its protocols	4	Un
CO – 2	Acquire knowledge on the various sub divisions and the practices and protocols of clinical biology.	6	An
CO – 3	Understand the laboratory practices and know how to maintain the laboratory instruments	4	An
CO - 4	Analyse and distinguish various types of blood cells	3	Un
CO – 5	Understand various diseases based on the laboratory analysis of body fluids.	4	Un
CO – 6	Develop skills in various lab techniques	7	Cr
CO – 7	Acquire knowledge to handle clinical equipments	6	Un
CO – 8	Design, carry out and interpret scientific experiments	7	Ap

**SEMESTER I****Core I****Cell and Molecular Biology****Course Code: 21PZOC11****Hrs/ Week : 6****Hrs/ Sem: 90****Credits: 4****Course outcome**

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describe the structure and function of biological membrane including the roles of gradients in energy transduction	1	Re
CO-2	illustrate the structural organization, control and regulation of gene at the transcriptional, post transcriptional level	2	Un
CO-3	outline the mechanisms of cell to cell signaling, including intercellular signaling and second messenger	5	An
CO-4	compare the structure and function of proteins, roles of amino acids in protein folding and protein-protein interactions	5	An
CO-5	examine cell cycle and its regulation, including mitosis and meiosis	4	An
CO-6	evaluate the characteristics, causes and role of genes in cancer	5	Ev

**SEMESTER I****Core II****Genetics and Evolution****Course Code: 21PZOC12****Hrs/ Week: 6****Hrs/ Sem: 90****Credits: 4****Course outcome**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	discuss the chromosomes, genetic recombination and linkage	1	Un
CO-2	examine the theories of crossing over and construction of chromosome map	1	An
CO-3	evaluate genetic recombination mechanisms in bacteria and the genetic and clinical significance of transposons	2	Ev
CO-4	analyse changes in gene and genotypic changes and its consequences in populations	6	An
CO-5	discriminate various human genetic disorders and genetic variations in drug metabolism	5	An
CO-6	integrate central ideas underpinning evolutionary patterns and processes from the molecular to the macro scale	2	Cr

**SEMESTER I****Core III****Biochemistry****Course Code: 21PZOC13****Hrs/Week: 5****Hrs/ Sem: 75****Credits: 4****Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	explain structure and functions of biomolecules	1	Un
CO-2	able to examine the relation between biology and chemistry	2, 4	An
CO-3	compare the specificity of enzymes (biochemical catalysts) and the chemistry involved in enzyme action.	3	An
CO-4	discriminate the metabolic pathways of protein, amino acids, carbohydrates, fats and nucleic acids	1	Ev
CO-5	apply to real life situations and applications in research and industry	4	Ap
CO-6	design, carryout, record and analyse the results of chemical experiments	6	Ap



SEMESTER I			
Core IV		Applied Entomology	
Course Code: 21PZOC14	Hrs/ Week : 5	Hrs/ Sem: 75	Credits: 4

#### Course outcome

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	classify the various orders of insects	2	Ap
CO-2	understand the importance of beneficial insects and methods to collect, mount and preserve them	6	Un
CO-3	analyze the main pest species of crops based on the symptoms of the attack and morphological traits	2	An
CO-4	explain the life cycle of main pest species on crops and insect vectors	1,2	Un
CO-5	apply appropriate indirect and direct measures to prevent or reduce pest attack	7	Ap
CO-6	implement crop protection according to the IPM principles	7	Ap

SEMESTER II			
Core V		Animal Physiology	
Course Code: 21PZOC21	Hrs/ Week: 5	Hrs/Sem: 75	Credits: 4

#### Course outcomes

CO. No	Upon completion of this course, students will be able to	PSOs addressed	CL
CO- 1	compare digestive and circulatory system and regulation of blood pressure and heart beat	1	Un
CO-2	understanding mechanisms of respiration and point out physiological adaptations to special conditions	2	Un
CO-3	investigate the relationship between different environments and excretory organs and osmo ionic regulation	5	An
CO-4	appraise neuromuscular mechanisms and relate the physical and chemical phenomena	2	An
CO-5	defend the endocrine glands and associated physiological actions	5	Ev
CO-6	apply the physiological principles to promote healthy lifestyle	5	Ap

**SEMESTER II****Core VI****Immunology****Course Code: 21PZOC22****Hrs / Week : 5****Hrs / Sem: 75****Credits : 4****Course Outcome:**

CO. No	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	explain the genetic basis of antibody diversity, organization and arrangement of immunoglobulin genes	1	Un
CO-2	discuss the structure and function of MHC molecules and the immunologic responses involved in preventing and combating infections	1,2	Un
CO-3	demonstrate the principle of the routine serologic procedures performed in the clinical laboratory.	2	Ap
CO-4	outline the basic mechanisms, distinctions and functional interplay of innate and adaptive immunity	1, 2	An
CO- 5	examine immunological response and how it is triggered and regulated	1,2	An
CO-6	analyse the role and advances being made in transplantation with artificial organs and the aberrations of the immune system such as infections and autoimmunity	4	An

**SEMESTER II****Core VII****Applied Biotechnology****Course Code : 21PZOC23****Hrs / Week : 5****Hrs / Sem : 75****Credits : 4****Course Outcome**

<b>CO.No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	apply biotechnological manipulation of microbes for production of industrially important products	1,4,5	Ap
CO-2	examine the application of biotechnology in treatment of diseases and production of pharmaceutical products	4,5	An
CO-3	apply biotechnology to monitor environmental pollution and apply their knowledge to alleviate the effects of various environmental pollutants using biotechnology.	3,5	Ap
CO-4	create transgenic animals	5,6,8	Cr
CO-5	evaluate the ethical issues related with genetically modified organism	5,7,8	Ev
CO-6	apply the practical and theoretical knowledge of nanomaterials acquired for pursuing their research in nanosciences	3,6,7	Ap



## SEMESTER II

### Core VIII

### Microbiology

Course Code: 21PZOC24

Hrs/ Week : 4

Hrs / Sem : 60

Credits : 4

### Course Outcome :

CO. NO	Upon completion of this course, the students will be able to	PSO addressed	CL
CO-1	identify the microorganisms using biochemical testing and staining technique	1,2	Re
CO-2	explain the structural organization and life cycle of microorganisms	2	Un
CO-3	classify microorganisms based on the modern trends of Taxonomy	2	Ap
CO-4	analyze the role of microorganisms in fermentation, medicine and the production of microbial products	4	An
CO-5	apply scientific methods in the design and execution of experiments	6	Ap
CO-6	develop practical skills in microbial techniques	6	Cr



SEMESTER III			
Core IX		Computational Biology	
Course Code: 21PZOC31	Hrs/ Week: 6	Hrs/ Sem: 90	Credits: 4

### Course Outcome

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand descriptive and inferential statistical methods effectively and apply to design experiments	4	Un
CO-2	analyse and differentiate the biological data in a statistical perspective correctly and contextually and apply it for deriving research conclusions	7	An
CO-3	carryout correlation and regression analysis and recognize theoretical distributions	6	Ap
CO-4	convert biological data into computational problem and execute quantitative analysis	4	Ap
CO-5	demonstrate the mastery of concepts of skills for biological data management, analysis and graphical presentation	7	Ev
CO-6	formulate and test using appropriate statistical tools and softwares	4,6	Cr

**SEMESTER III****Core XI****Developmental Zoology****Course Code: 21PZOC33****Hrs/ Week: 5****Hrs/ Sem: 75****Credits: 4****Course Outcomes**

<b>CO. No</b>	<b>upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	define the process of gametogenesis and fertilization	1	Re
CO-2	discuss the patterns of cleavage, morphogenetic movements and gastrulation in different animals	2	Un
CO-3	analyse tissue interactions and the development of organ systems in vertebrates	2	An
CO-4	present the role of genes in development, aging and senescence	3,5	Ap
CO-5	design experiment to find the role of hormones in amphibian and insect metamorphosis	4,6	Cr
CO-6	evaluate the ability of regeneration in different groups of organisms	4,6	Ev

**SEMESTER III****Core XII****Research Methodology and Biotechniques****Course Code : 21PZOC34****Hrs / Week : 5****Hrs / Sem : 75****Credits : 4****Course Outcomes**

<b>CO.No.</b>	<b>Upon completion of this course,students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	explain different methodologies to be adopted for conducting research in more appropriate manner.	1	Un
CO-2	construct scientific knowledge in the design and implementation of an experiment.	2	Ap
CO-3	analyze a range of qualitative and quantitative research techniques to the scientific issues.	4	An
CO-4	select new scientific tools, concepts and theories to solve scientific problems.	6	Ev
CO-5	develop skills to communicate scientific ideas in both written and oral formats	7	Cr
CO-6	make a broad range of laboratory skills to perform experiments for employment prospects.	8	Cr



**SEMESTER IV****Core XV****Commercial Zoology****Course Code: 21PZOC43****Hrs/ Week: 5****Hrs/ Sem: 75****Credits: 4****Course Outcome**

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the behaviour of bees, prevent swarming and manage bee colonies	3	Un
CO-2	identify, choose suitable bees, inspect and maintain bee hive successfully	2	Re
CO-3	acquire knowledge in extraction of honey bee products and analyse their uses.	5	An
CO-4	demonstrate mulberry cultivation, pests of mulberry, silkworm rearing, identify diseases of silkworm and their control measures	2	Ap
CO-5	utilize their knowledge in harvesting, value their products and marketing cocoons	8	Ev
CO-6	develop practical proficiency in apiculture and sericulture from the lab work as well as visit to the apiary and the sericulture unit.	6	Cr



**SEMESTER IV****Core Elective****B. Vermitechnology****Course Code : 21PZOE42****Hrs / Week : 4****Hrs / Sem : 60****Credits : 4****Course Outcome**

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO- 1	discuss basic techniques of vermiculture and different species of earthworms suitable for culture	1	Un
CO – 2	analyse the mechanisms of vermicomposting technology	6	An
CO – 3	perform recycling of wastes generated from various sources in an eco-friendly manner	5	Ap
CO – 4	explore new techniques and deepen their mastery in organic solid waste management	2	Cr
CO – 5	execute practical technology and entrepreneurship skills	8	Ap
CO – 6	evaluate problems, constraints and opportunities for self-employment.	3	Ev

**Programme: MHRM**

SEMESTER I			
Core I		Principles of Management	
Code: 19PHRC11	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the managerial function, role of manager and managerial skills.	1,3,5	Un
CO-2	gain knowledge on the development of managerial thought.	1	Un
CO-3	examine the concepts of planning to make planning effective.	1,3	An , Cr
CO-4	analyse the concept of organizing and departmentation.	1,3	An
CO-5	gain knowledge on decision making and co-ordinating.	1,3,5	Un
CO-6	apply the techniques of control.	1,3,5	Ap ,An
CO-7	analyse the stages of conflict and management of conflict.	1,3	An
CO-8	identify the need, strategy for planned change and organizational development.	3	Un ,Ap

**SEMESTER I****Core III****Accounting for Managers**

<b>Code: 19PHRC13</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits: 4</b>
-----------------------	--------------------	--------------------	-------------------

**Course Outcome**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the concept of accounting	1,4	Un , Re
CO-2	prepare final accounts	1,4	Ap
CO-3	understand the nature ,scope and functions of managerial accounting.	1,4	Un , Re
CO-4	prepare cash flow statement.	4	Ap
CO-5	prepare fund flow statement.	4	Ap
CO-6	understand the objectives and steps in budgetary control and prepare the various types of budget.	4,6	Un , Ap
CO-7	able to use the various types of ratios for managerial decision.	4,6	An ,Cr
CO-8	apply accounting knowledge for planning and control.	1,4,6	Un ,Ap



**SEMESTER II****Core VI Organisational Behaviour****Code: 19PHRC21****Hrs/Week: 4****Hrs/Sem: 60****Credit: 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the concept of Organisational behaviour and Personality.	1,3	Un
CO-2	gain insights on Perception and Attitude.	3	Re
CO-3	understand the concept of Learning	3	Un
CO-4	examine the concepts and theories of Motivation and Leadership.	1,3	An
CO-5	understand the Characteristics and types of Group behaviour.	3	Un
CO-6	describe and apply the concept of Team Building.	1,3	Re , Ap
CO-7	evaluate the Organisational change and reasons for Organisation Change.	3	Ev
CO-8	examine the concept of Organisation Development and Effectiveness.	3	An

**SEMESTER II****Core VII****Labour Legislation****Code: 19PHRC22****Hrs/Week: 6****Hrs/Sem: 90****Credit: 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	gain knowledge of labour laws and enable the students to acquire skills to handle employment relations.	2	Un , Ap
CO-2	familiarise the students to the practical problems inherent in the implementation of the labour statutes.	2	Un , Ev
CO-3	understand the basic concepts of Labour Legislation and labour related provisions in the constitution of India.	2	Un , Ev
CO-4	understand the structure and functioning of ILO.	2	Un
CO-5	examine the Acts related to health, safety and welfare and make use of the Acts in case of Factories contract labourers and plantation labours.	2	Un , Ap
CO-6	interpret the knowledge in laws related to social security and apply the laws according to the needs.	2 ,5	Ap
CO-7	understand the implications of labour laws for industrial relations to know how to resolve industrial relations and human relations problems and promote welfare of industrial labour.	2	Un , Ap
CO-8	be competent with the various legal aspects of women and children.	2	Un , Ap

**SEMESTER II****Core IX Recruitment and Selection****Code: 19PHRC24****Hrs/Week: 6****Hrs/Sem: 90****Credit: 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the skills needed for recruitment and selection.	5	Un
CO-2	describe the meaning, functions, objective, importance of recruitment and hiring process.	5	Un
CO-3	understand the meaning, sources, advantage and disadvantages of internal and external hiring and illustrate the process of internal and external hiring.	5	Un , Ap
CO-4	write application form, bio data and resume.	5	Cr
CO-5	determine the features, purpose, types, process, advantage and disadvantage of testing and interviewing.	5	Ev
CO-7	design different ability tests and practice interview techniques.	5	Cr , Ap
CO-8	discuss the purpose, methods of collecting reference data, contents of appointment order and medical examination and develop appointment orders.	5	Un ,Cr

SEMESTER II			
Core X		Total Quality Management	
Code: 17PHRC25	Hrs/Week: 4	Hrs/Sem: 60	Credit: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss the concept of quality and total quality management.	4	Un
CO-2	gain insights on TQM approaches	4	Ev
CO-3	define and list the steps in supplier partnering.	4	Re
CO-4	gain knowledge on the tools and techniques of TQM	4,6	Re , Ap
CO-5	gain knowledge on the concept of six sigma and quality circles	4	Re , Ap
CO-6	discuss the concept of benchmarking	4	Un
CO-7	state the quality systems and ISO 9000	4	Re
CO-8	examine ISO 14000.	4	An



SEMESTER II			
Core XI Practical –I		Soft Skills Development	
Code: 19PHRCR2	Hrs/Week: 4	Hrs/Sem:60	Credit: 2

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	become self-confident individuals by mastering the skills needed.	5, 8	Ap
CO-2	develop the way of thinking to increase creativity and critical thinking.	5, 8	Un , Ap
CO-3	converse fluently in English.	5, 8	Cr
CO-4	develop proper dressing skills and business dining etiquette effectively.	5, 8	Cr
CO-5	create newsletters, magazines and also write reviews on books and films.	5, 8	Ap , Cr
CO-6	create blogs and design brochures.	5, 8	Un ,Ap
CO-7	develop better workplace etiquettes.	5, 8	Un
CO-8	obtain a sense of responsibility for the multi-disciplinary nature of event management.	5, 8	Un, Cr

SEMESTER III			
Core XII		Research Methodology	
Code: 19PHRC31	Hrs/Week: 6	Hrs/Sem:90	Credit: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	help students develop a thorough understanding of the fundamental theoretical ideas and logic of research.	7	Ap
CO-2	understand the objectives of research, types of research and criteria of good research.	7	Un
CO-3	demonstrate the research problem and research design.	7	Ap
CO-4	gain knowledge of sampling design and scaling techniques and demonstrate the knowledge of scaling methods.	7	Un , Ev
CO-5	understand and decide the methods of data collection and process the data collected.	7	Un , An
CO-6	experiment with the collection, processing and interpretation of data.	7	Ap
CO-7	train students in learning the accepted formats for writing research report.	7	An
CO-8	analyse the findings and formulate their own reports.	7	Cr

SEMESTER III			
Core XIII		Compensation Management	
Code: 19PHRC32	Hrs/Week: 5	Hrs/Sem:75	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course students will be able to	PSO addressed	CL
CO-1	summarize the concepts of Compensation Management.	5	Un
CO-2	describe the objectives, types, theories, factors of compensation administration and demonstrate compensation administration.	5	Un
CO-3	understand and calculate compensation structure and ESOP	5	Un , Ap
CO-4	examine the legal framework of wages and salary administration.	2	An
CO-5	determine the determinants and types of incentives.	5	Ev
CO-6	understand the types of rewards for employees	5	Un
CO-7	understand the meaning, objectives, features and forms of employee benefits and services.	5	Un
CO -8	investigate the types of fringe benefits and other benefit programmes.	5	An

**SEMESTER III****Core XIV****Statistics For Management****Code: 19PHRC33****Hrs/Week: 6****Hrs/Sem:90****Credit: 4****Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	learn the basic statistical methods with a focus on the application of these methods to the business world.	6 , 7	Ap
CO-2	understand the basic statistical concepts such as types of data, classification of data, frequency distribution and construct frequency distributions.	6 , 7	Un , Ap
CO-3	become aware of the concepts of sampling, sampling distributions and estimation.	6 , 7	An
CO-4	understand the concept and steps of performing a hypothesis (z, t, F) test and use it as a tool for statistical decision making in a business context.	6 , 7	An , Ev
CO-5	understand the assumptions of an ANOVA model and apply ANOVA in a business context.	6 , 7	Un , Ap
CO-6	understand the concept of Chi-square and use it as an analytical tool for making business decisions.	6 , 7	Un , Ap
CO-7	appreciate the importance and application of non-parametric tests.	6 , 7	Un
CO-8	use correlation and regression models to analyse the relationships between variables.	6 , 7	Un, Cr



**SEMESTER III****Elective I****Performance Management****Code:19PHRE31****Hrs. / Week : 4****Hrs / Sem : 60****Credit: 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	acquire in-depth knowledge about performance management.	5	Un
CO-2	gain a working knowledge of performance management systems.	5	Un
CO-3	distinguish between performance management and performance appraisal	5	Ev
CO-4	understand about KPA's and KRA's	5	Un
CO-5	the different methods of measuring performance	5	Un
CO-6	gain knowledge and analyse about the different performance tools.	5	Un ,An
CO-7	learn and conduct appraisal interviews and BARS	5	Un, Ap
CO-8	acquire knowledge about the performance evaluation	5	Un

**SEMESTER III****Elective I Business Ethics, Corporate Social Responsibility and Governance****Code: 19PHRE31****Hrs/Week: 4****Hrs/Sem: 60****Credit: 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the nature and characteristics of Business ethics.	6	Un
CO-2	Gain knowledge on the Evolution of Business Ethics and Kohlber's Six Stage Moral Development .	6	Un
CO-3	examine the concepts of management of ethics in the wake of changing business ambience.	4,6,7	An , Ap
CO-4	analyse the role and function of ethical managers in real-life situations.	5,6	An , Ap
CO-5	gain knowledge on the Legal Aspects of Ethics and Economic Environment and its implications for business.	4,6,7	Un
CO-6	gain knowledge on the concept of corporate governance.	4,6	Ap , An
CO-7	analyse the cases in corporate governance.	4,6	Ap ,An
CO-8	identify the challenges and implementation of Corporate Social Responsibility.	6	Ap

SEMESTER- III			
Elective II		Managerial Economics	
Code: 19PHRE32	Hours / Week :4	Hrs / Semester: 60	Credit :3

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of managerial economics.	4	Un
CO-2	gain knowledge on the nature and scope of managerial economics.	4	Re
CO-3	understand and determine the types of demand	4	Un , Ap
CO-4	infer the supply factors	4	Re
CO-5	understand the concept of production and cost.	4	Un , Ap
CO -6	gain knowledge of market structure and pricing.	4	Un , Ap
CO-7	gain insights to the macro economic factors.	4	Un
CO-8	gain knowledge on the monetary and fiscal policies.	4,7	Un



SEMESTER III			
Elective II		Business Environment	
Code: 19PHRE32	Hrs/Week: 4	Hrs/Sem: 60	Credit: 3

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	C L
CO-1	understand the Overview of Business Environment	4	Un
CO-2	gain knowledge of Business and Its Environment and the influence of the forces in the external environment.	4,6	An ,Ev
CO-3	understand the concept of Economic System.	4	Un
CO-4	understand the concept of Political Environment	4	Un ,Ap
CO-5	gain knowledge of the Economic Environment	4,6	Un , An
CO-6	understand the influence of Social Environment in business.	4,6	Un ,Ap
CO- 7	gain knowledge of the technological developments and the impact of informational technology.	4,6	Un , Ap
CO-8	explain the Economics of development and help in preparing appropriate strategies for organisations to face the challenges.	4	Re, Un





SEMESTER IV			
Core XVI		Strategic Management	
Code: 19PHRC41	Hrs/Week: 6	Hrs/Sem:90	Credit: 4

**Course Outcome:**

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the kinds of strategies and importance of strategic management .	3	Un
CO-2	gain knowledge of strategic management process.	3	Un
CO-3	understand the strategy formation for objectives, policies and company mission.	1,3	Un
CO-4	analyse the strategy for internal and external environment.	3	An
CO-5	gain knowledge and use the business level strategy .	3,6,7	Re , Ap
CO-6	evaluate the corporate level strategy.	3,6	Ev
CO-7	describe the concept of strategy implementation.	3	Re
CO-8	understand the features of effective evaluation and control.	3,7	Un



**SEMESTER IV****Elective III Training and Development****Code: 19PHRE41****Hrs/Week: 5****Hrs/Sem:75****Credit: 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the meaning, objectives, values, difference between training, development and education.	5	Un
CO-2	analyse the types, benefits principles and changing facets in training.	5	An
CO-3	identify the roles and responsibilities of trainers.	5	Ev
CO-4	illustrate the needs, identification of needs and process of training	5	Ap
CO-5	discuss the different methods of training and determine the training method necessary for training.	5	Cr, Ev
CO-6	describe the different types of training tools and recommend it for training purposes.	5	Un, Ev
CO-7	understand the meaning, concept, objectives, need and role of Development programme.	5	Un
CO-8	discuss the need, approaches and examine the types and stages of evaluation.	5	Un ,An

**SEMESTER IV****Elective III International Human Resource Management****Code: 19PHRE41****Hrs/Week: 5****Hrs/Sem: 75****Credit: 3****Course outcome:**

<b>CO No.</b>	<b>Upon completion of this course, students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the concept of International Human Resource Management.	1,5	Un
CO-2	gain knowledge on the Cross-border Alliances and SMEs.	4	Un
CO-3	examine the concepts of Staffing International Assignments.	1,5	An , Cr
CO-4	explain the concept of the Roles of Expatriates and Non-Expatriates.	1,5	Ap, An
CO-5	gain knowledge on International training and development.	1,5	Un
CO-6	utilize and apply the knowledge in managing human resources in offshoring countries.	1,5	Ap, An
CO-7	analyse the key issues in International Industrial Relations.	1,5	Re,An
CO-8	understand the concept of trade unions and response of trade unions to multinationals.	1,5,6	Un

**SEMESTER IV****Elective IV Coaching , Mentoring and Counselling****Code: 19PHRE42****Hrs/Week: 5****Hrs/Sem:75****Credits: 3****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSO addressed</b>	<b>CL</b>
CO-1	understand the concepts of Coaching, Mentoring and Counselling.	3	Un
CO-2	understanding and exhibiting skills of coaching techniques.	3	Un
CO-3	understand the concepts of mentoring and stages of mentoring relationship.	3	Un
CO-4	explain the counselling types and distinguish between individual and group counselling.	3	Un ,Cr
CO -5	describe the principles, functions, goals, concept and roles of employee counselling.	3	Un
CO-6	evaluate the problems faced by employees in industries.	3	Ev
CO-7	learn about creating a physical environment for rapport building.	3	An
CO-8	identifying roadblocks	3	Ap



SEMESTER IV			
Core XVIII		Project	
Code: 19PHRP41	Hrs/Week: 8	Hrs/Sem:120	Credits: 8

#### Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	collect data and analyse the data using research methods and techniques.	8,10	Cr
CO-2	compare their theoretical knowledge with the professional environment and enrich their competencies, knowledge and skills.	10	An
CO-3	produce reports and recommend changes in human resource practices.	8,10	Cr,Ev



## SEMESTER I

<b>Core I Principles and Practices of Management</b>			
<b>Code: 21PHRC11</b>	<b>Hrs/Week: 6</b>	<b>Hrs/Sem: 90</b>	<b>Credits: 4</b>

### Course Outcome

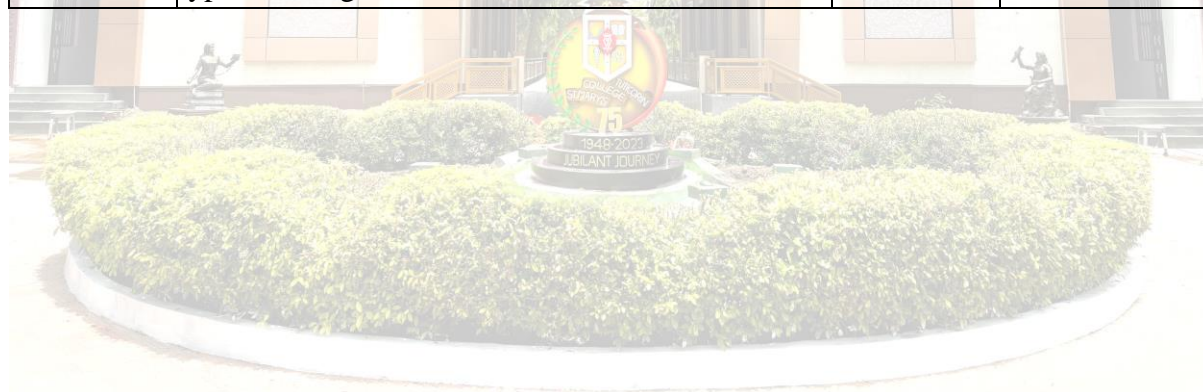
CO No.	On completion of this course students will be able to	PSOs Addressed	CL
CO-1	understand the managerial function, role of manager and managerial skills.	1,3,5	Un
CO-2	gain knowledge on the development of managerial thought.	1	Un
CO-3	examine the concepts of planning to make planning effective.	1,3	An , Cr
CO-4	analyse the concept of organizing and departmentation and identify the need, strategy for planned change and organisational development	1,3	An
CO-5	gain knowledge on decision making and co-ordinating .	1,3,5	Un
CO-6	analyse the stages of conflict and management of conflict.	1,3,5	Ap , An



SEMESTER I			
Core III		Accounting for HR Managers	
Code: 21PHRC13	Hrs/Week: 6	Hrs/Sem: 90	Credits: 4

### Course Outcome

CO No.	On completion of this course students will be able to	PSOs Addressed	CL
CO-1	understand the concept of accounting	1,4	Un , Re
CO-2	prepare final accounts	1,4	Ap
CO-3	understand the nature, scope and functions of managerial accounting.	1,4	Un , Re
CO-4	prepare cash flow statement and able to use the various types of ratios for managerial decision.	4,6	Ap, An ,Cr
CO-5	prepare fund flow statement and apply accounting knowledge for planning and control.	1,4,6	Ap, Un
CO-6	understand the objectives and steps in budgetary control and prepare the various types of budget.	4,6	Un , Ap



**SEMESTER I****Core IV****Organisational Behaviour****Code: 21PHRC14****Hrs/Week: 6****Hrs/Sem: 60****Credits: 4****Course Outcome**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSOs Addressed</b>	<b>CL</b>
CO-1	understand the concept of Organisational behaviour and Personality.	1,3	Un
CO-2	gain insights on Perception and Attitude.	3	Re
CO-3	understand the concept of Learning and evaluate the Organisation Change.	3	Un, Ev
CO-4	examine the concepts and theories of Motivation, Organisational Development and Effectiveness and Leadership.	1,3	An
CO-5	understand the Characteristics and types of Group behaviour.	3	Un
CO-6	describe and apply the concept of Team Building.	1,3	Re , Ap



SEMESTER II			
Core VII		Behavioural HRM	
Code: 21PHRC22	Hrs/Week: 6	Hrs/Sem: 60	Credits: 4

**Course Outcome:**

CO No.	Upon completion of this course students will be able to	PSOs Addressed	CL
CO-1	acquire the basic knowledge of psychology of HumanResource Management.	3	Un
CO-2	understand the schools of psychology.	3	Un
CO-3	understand the theories and measurement of intelligence.	1,3	Un
CO-4	understand the concept, types and factors influencing perception and examine the functions of industrial psychologist.	1,3	An, Un
CO-5	know the process of learning, aptitude and attitude.	3	Un , Ap
CO-6	determine the factors, causes, effects, classification of adjustment and develop ways to manage stress and discuss the meaning, factors, theories and identify the ways of measuring personality.	1,3	Ev, Ap



**SEMESTER II****Core IX****Recruitment and Selection Procedures****Code: 21PHRC24****Hrs/Week: 5****Hrs/Sem: 90****Credits: 4****Course Outcome:**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSOs Addressed</b>	<b>CL</b>
CO-1	understand the skills needed for recruitment and selection.	5	Un
CO-2	understand the meaning, sources, advantage and disadvantages of internal and external hiring and illustrate the process of internal and external hiring.	5	Un , Ap
CO-3	write application form, bio data and resume and design different ability tests and practice interview techniques.	5	Cr, Ap
CO-4	determine the features, purpose, types, process, advantage and disadvantage of testing and interviewing.	5	Ev
CO-5	discuss the purpose, methods of collecting referencedata, contents of appointment order and medical examination and develop appointment orders.	5	Un ,Cr
CO -6	describe the meaning, functions, objective, importanceof recruitment and hiring process.	5	Un

**SEMESTER II****Core X****Total Quality Management****Code: 21PHRC25****Hrs/Week: 4****Hrs/Sem: 60****Credits: 4****Course Outcome**

<b>CO No.</b>	<b>On completion of this course students will be able to</b>	<b>PSOs Addressed</b>	<b>CL</b>
CO-1	discuss the concept of quality and total quality management.	4	Un
CO-2	gain insights on TQM approaches and knowledge on the tools and techniques of TQM.	4 ,6	Ev ,Re, Ap
CO-3	define and list the steps in supplier partnering and state the Quality systems and ISO 9000	4	Re
CO-4	gain knowledge on the concept of six sigma and quality circles	4	Re , Ap
CO-5	discuss the concept of benchmarking	4	Un
CO-6	examine ISO 14000.	4	An

**SEMESTER III****Core XII****Research Methodology****Code: 21PHRC31****Hrs/Week: 5****Hrs/Sem:90****Credits: 4****Course Outcome**

<b>CO No.</b>	<b>On completion of this course students will be able to</b>	<b>PSOs Addressed</b>	<b>CL</b>
CO-1	help students develop a thorough understanding of the fundamental theoretical ideas and logic of research.	7	Ap
CO-2	understand the objectives of research, types of research and criteria of good research and also decide the methods of data collection and process of data collection.	7	Un , An
CO-3	demonstrate the research problem and research design and experiment with the collection, processing and interpretation of data.	7	Ap
CO-4	gain knowledge of sampling design and scaling techniques and demonstrate the knowledge of scaling methods.	7	Un ,Ev
CO-5	train students in learning the accepted formats for writing research report.	7	An
CO-6	analyse the findings and formulate their own reports.	7	Cr



**SEMESTER III****Core XIII****Compensation Management****Code: 21PHRC32****Hrs/Week: 5****Hrs/Sem:75****Credits: 4****Course Outcome**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSOs Addressed</b>	<b>CL</b>
CO-1	summarize the concepts of Compensation Management.	5	Un
CO-2	describe the objectives, types, theories, factors of compensation administration and demonstrate compensation administration.	5	Un
CO-3	understand and calculate compensation structure and ESOP	5	Un , Ap
CO-4	examine the legal framework of wages and salary administration and investigate the types of Fringe benefits and other benefit programmes.	2	An
CO-5	determine the determinants and types of incentives.	5	Ev
CO-6	understand the types of rewards for employees and the meaning, objectives, features and forms of employee benefits and services.	5	Un

**SEMESTER III****Core XIV****Statistics for Management****Code: 21PHRC33****Hrs/Week: 5****Hrs/Sem:90****Credits: 4****Course Outcome**

CO No.	On completion of this course students will be able to	PSOs Addressed	CL
CO-1	learn the basic statistical methods with a focus on the application of these methods to the business world.	6,7	Ap
CO-2	understand the basic statistical concepts such as types of data, classification of data, frequency distribution and construct frequency distributions.	6,7	Un, Ap
CO-3	become aware of the concepts of sampling, sampling distributions and estimation.	6,7	An
CO-4	understand the concept and steps of performing a hypothesis (z, t, F) test and use it as a tool for statistical decision making in a business context.	6,7	An, Ev
CO-5	understand the assumptions of an ANOVA model and apply ANOVA in a business context and to use correlation and regression models to analyse the relationships between variables.	6,7	Un, Ap
CO-6	understand the concept of Chi-square and use it as an analytical tool for making business decisions and to appreciate the importance and application of non parametric tests.	6,7	Un, Ap

**SEMESTER III****Elective I****Performance Management****Code:21PHRE31****Hrs. / Week : 4****Hrs / Sem : 60****Credits: 3****Course Outcome**

CO No.	On completion of this course students will be able to	PSOs Addressed	CL
CO-1	acquire in-depth knowledge about performance management.	5	Un
CO-2	gain a working knowledge of performance management systems.	5	Un
CO-3	distinguish between performance management and performance appraisal	5	Ev
CO-4	understand about KPA's and KRA's and acquire knowledge about the performance evaluation.	5	Un
CO-5	the different methods of measuring performance	5	Un
CO-6	gain knowledge and analyse about the different performance tools and learn and conduct appraisal interviews and BARS	5	Un ,An , Ap

**SEMESTER III****Elective I****Business Ethics and Governance****Code: 21PHRE31****Hrs/Week: 4****Hrs/Sem: 60****Credits: 3****Course Outcome**

CO No.	On completion of this course students will be able to	PSOs Addressed	CL
CO-1	understand the nature and characteristics of Business ethics and identify the challenges and implementation of Corporate Social Responsibility.	6	Un, Ap
CO-2	gain Knowledge on the Evolution of Business Ethics and Kohlberg's Six Stage Moral Development.	6	Un
CO-3	examine the concepts of management of ethics in the wake of changing business ambience.	4,6,7	An, Ap
CO-4	analyse the role and function of ethical managers in real-life situations.	5,6	An, Ap
CO-5	gain knowledge on the Legal Aspects of Ethics and Economic Environment and its implications for business.	4,6,7	Un
CO-6	gain knowledge on the concept of corporate governance and analyse the cases in Corporate Governance.	4,6	Ap, An



SEMESTER- III			
Elective II		Managerial Economics	
Code: 21PHRE32	Hours / Week :4	Hrs / Semester: 60	Credits :3

### Course Outcome

CO No.	On completion of this course students will be able to	PSOs Addressed	CL
CO-1	understand the concept of managerial economics.	4	Un
CO-2	gain knowledge on the nature and scope of Managerial Economics.	4	Re
CO-3	understand and determine the types of demand	4	Un , Ap
CO-4	infer the supply factors	4	Re
CO-5	understand the concept of production and cost and gain knowledge on the monetary and fiscal policies..	4	Un , Ap
CO -6	gain knowledge of market structure , pricing and insights to the macro economic factors.	4	Un , Ap



**SEMESTER IV****Core XVI****Strategic Human Resource****Code: 21PHRC41****Hrs/Week: 6****Hrs/Sem:90****Credits: 4****Course Outcome**

CO No.	On completion of this course students will be able to	PSOs Addressed	CL
CO-1	understand the kinds of strategies and importance of strategic management and the features of effective evaluation and control.	3,7	Un
CO-2	gain knowledge of strategic management process.	3	Un
CO-3	understand the strategy formation for objectives, policies and company mission.	1,3	Un
CO-4	analyse the strategy for internal and external environment.	3	An
CO-5	gain knowledge and use the business level strategy .	3,6,7	Re , Ap
CO-6	evaluate the corporate level strategy and describe the concept of strategy implementation.	3,6	Ev , Re



**SEMESTER IV****Core XVIII****Training and Development****Code: 21PHRC43****Hrs/Week: 5****Hrs/Sem:75****Credits: 4****Course Outcome**

<b>CO No.</b>	<b>Upon completion of this course students will be able to</b>	<b>PSOs Addressed</b>	<b>CL</b>
CO-1	understand the meaning, objectives, values, Difference between training, development and education.	5	Un
CO-2	analyse the types, benefits principles and changing facets in training and discuss the need, approaches and examine the types and stages of evaluation.1.	5	An ,Un
CO-3	identify the roles and responsibilities of trainers.	5	Ev
CO-4	illustrate the needs, identification of needs and process of training	5	Ap
CO-5	discuss the different methods of training and determinethe training method necessary for training.	5	Cr, Ev
CO-6	describe the different types of training tools and recommend it for training purposes.	5	Un, Ev

**SEMESTER IV****Core XIX****Coaching , Mentoring and Counselling****Code: 21PHRC44****Hrs/Week: 5****Hrs/Sem:75****Credits: 4****Course Outcome**

CO No.	Upon completion of this course students will be able to	PSOs Addressed	CL
CO-1	understand the concepts of Coaching, Mentoring and Counselling and identifying Road blocks.	3	Un , Ap
CO-2	understand and exhibiting skills of coaching techniques.	3	Un
CO-3	understand the concepts of mentoring and stages of mentoring relationship.	3	Un
CO-4	explain the counselling types and distinguish between individual and group counselling.	3	Un ,Cr
CO -5	describe the principles, functions, goals, concept and roles of employee counselling.	3	Un
CO-6	evaluate the problems faced by employees in industries and learn about creating a physical environment for rapport building.	3	Ev , An

**Principal****St. Mary's College (Autonomous)  
Theothukudi-628 001.**