Programme: B. Sc. Chemistry

SEMESTER- I			
Part III Core I	**General Chemistry I**		
Code :18UCHC11	**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 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 :

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
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 nucleophillic 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 acetenylic 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:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
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 metalsand 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:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	Prepare alcohols and summarize their properties, Distinguish between 1^o, 2^o& 3^o 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^o, 2^o&3^o 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, RecogniseFrankland 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, Favorskiiand Friesrearrrangement.	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**

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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			
Code : 18UPHA31	**Hrs/Week : 4**	**Hrs/ Sem : 60**	**Credits : 3**

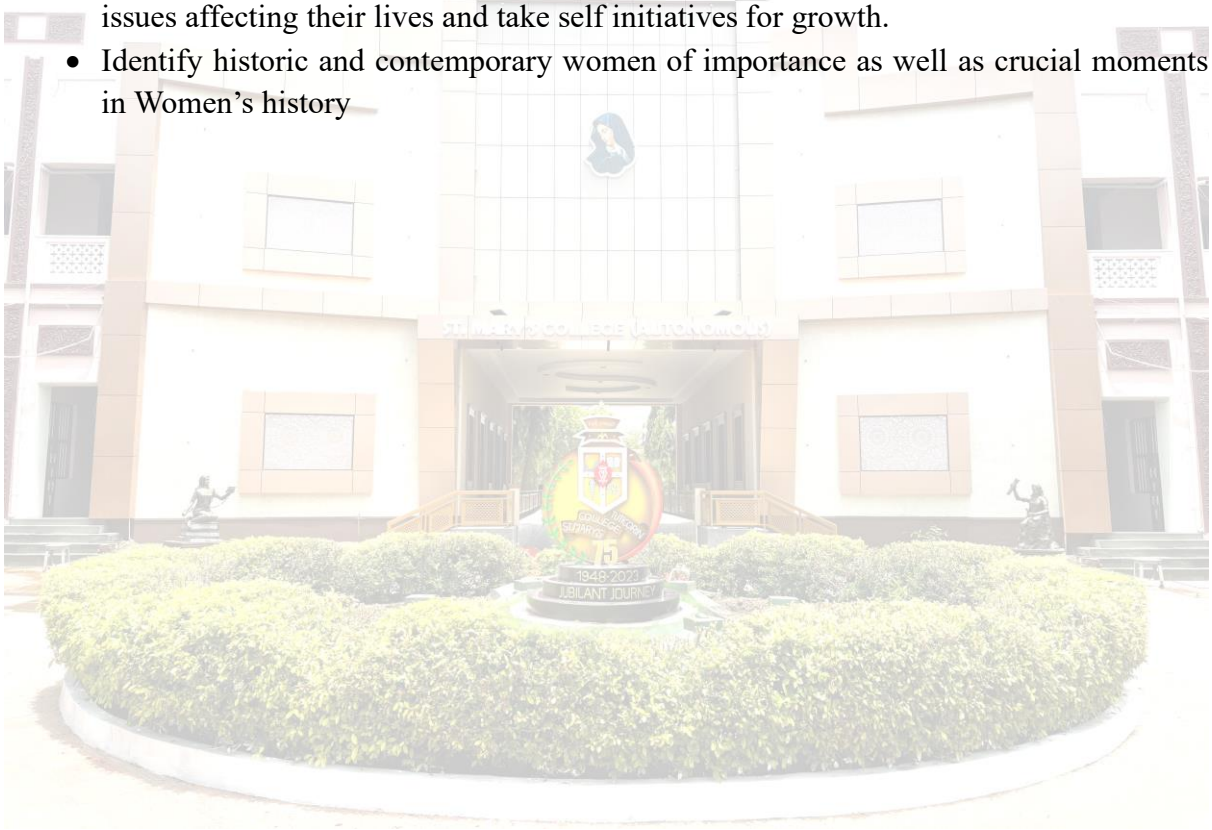
Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	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 acetoaceticester, 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 tetraoxide, Raney nickel, Sodium borohydride	3, 8 4	Re 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, Knovenegal 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 compunds	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**

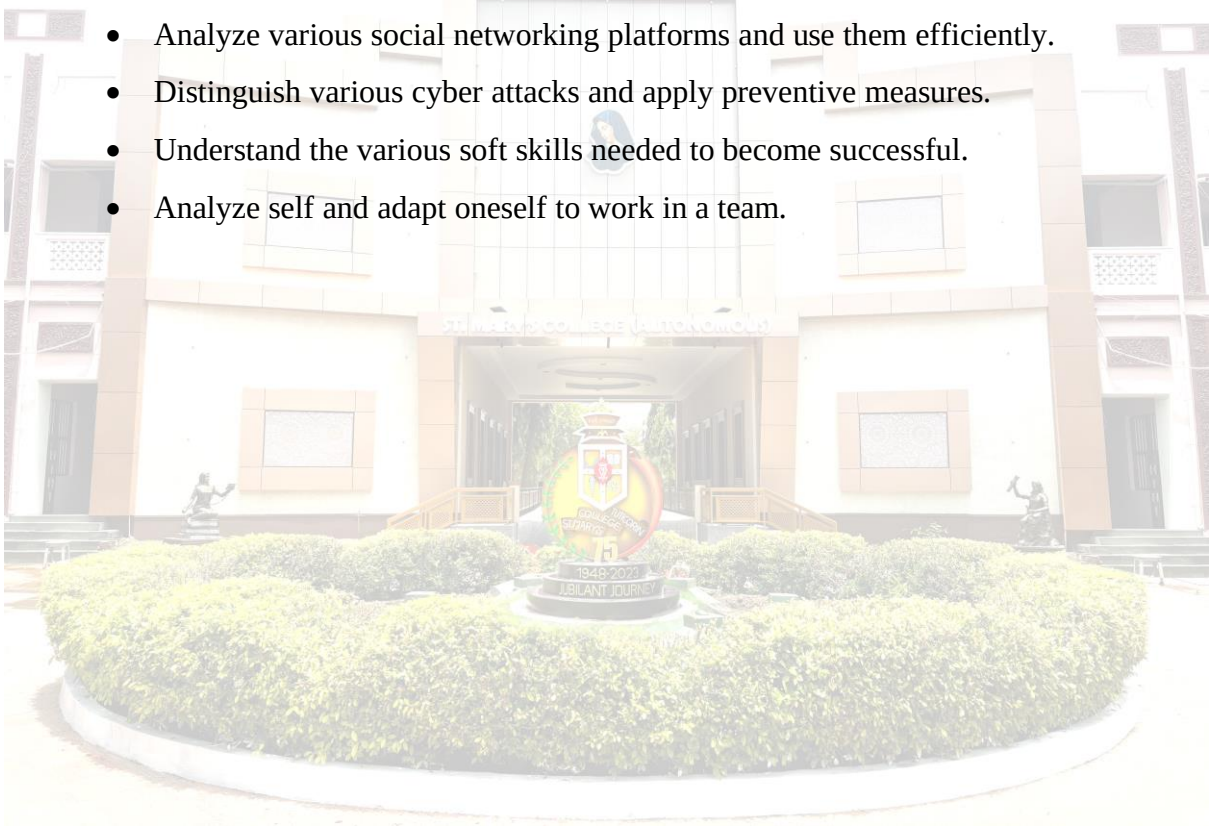
Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
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 Classify the structure of DNA and RNA	1, 3 5	Re 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 α, β 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 :

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
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 Publication2014

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

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

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

Course Outcomes

CO No.	Upon completion of this course, students will be able to	PSOs addressed	CL
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 ofa gasand 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 partiallymiscible 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**

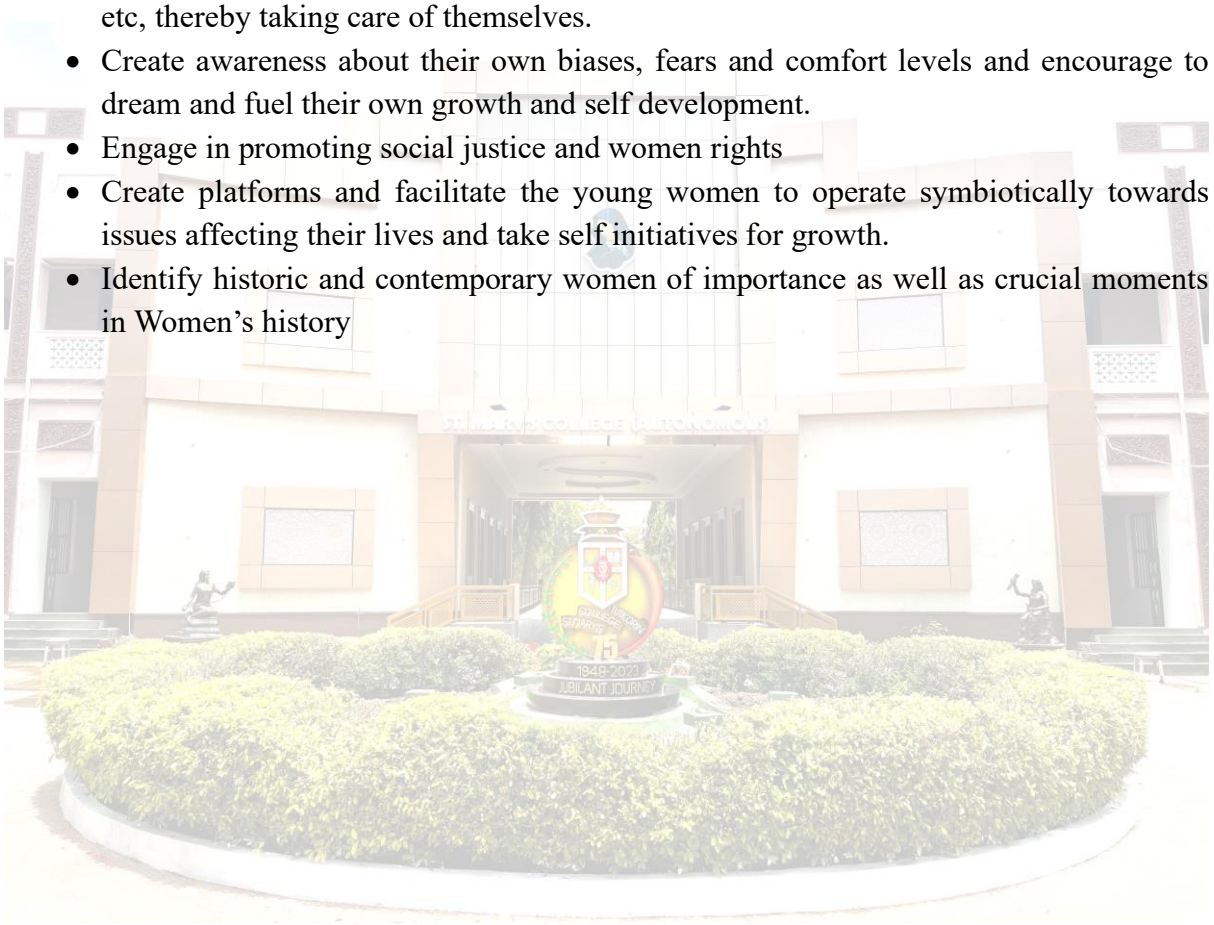
Course Outcome

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 – 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 1º, 2º & 3º amines by reactions and criticize the effect of substituent on the basicity of aromaticamines.	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 organometalli ccompounds, 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 Friesrearrangement.	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

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 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, Knovenegal 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**

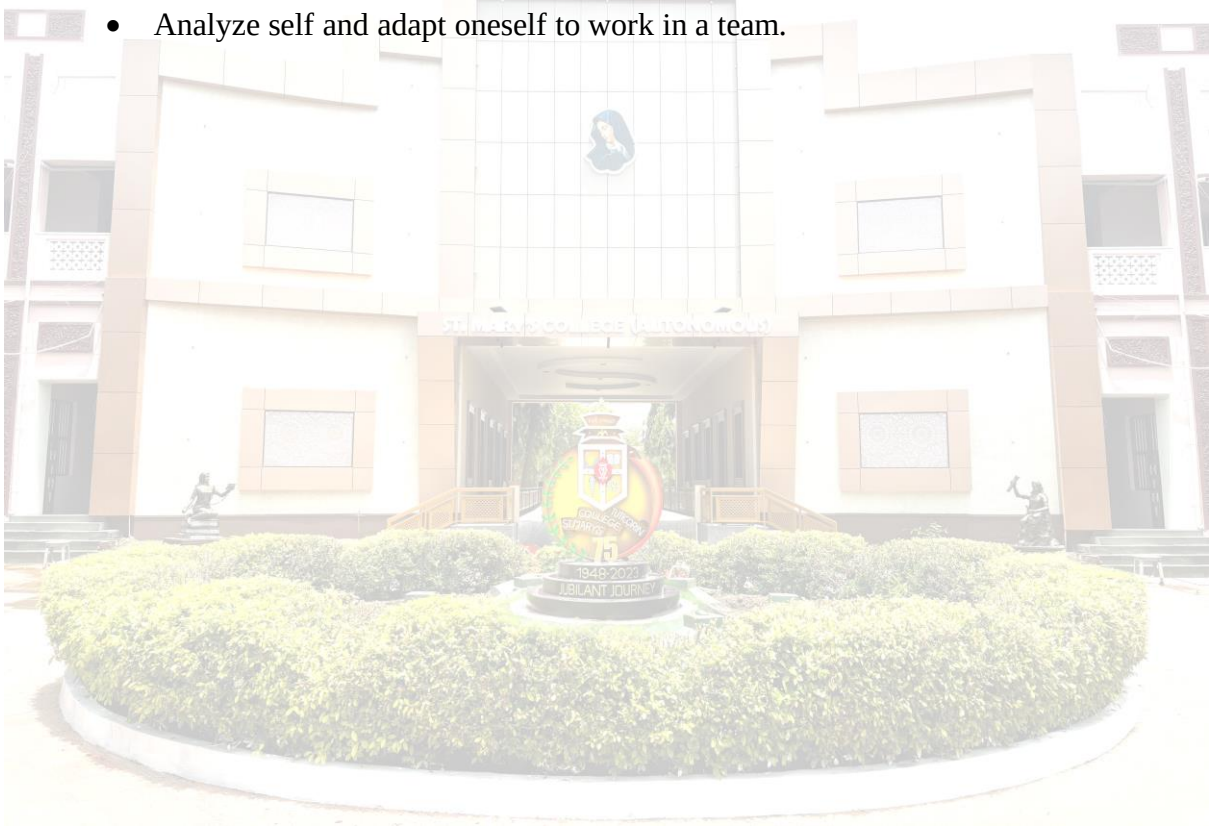
Course Outcome

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

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 α, β 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:

CO No.	Upon completion of this course, students should be able to	PSO addressed	CL
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**		
Course Code :21UCHE62	**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	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

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