SEMESTER- IV			
Allied - Practical– IV	**Web designing Lab**		
Course Code: 21UCSAR4	**Hrs / week :2**	**Hrs / Semester: 30**	**Credits :1**

1. Create a web page of your College.

2. Create a web page to display your marks in the following table format.

Reg No.	Name	SEMESTER I							
		Language		English		C		HTML	
		Int	Ext	Int	Ext	Int	Ext	Int	Ext

3. Write an HTML code to display a list of five cars in a frame,Link each one to a brief description in second frame. The left frame should display the list and the right frame should display the paragraph about the frame.

4.Write HTML program to create E-Mail registration form.

5. Design a Web page using CSS which includes the following:
   i. Use Different fonts and styles
   ii. Set the background image
   iii. Define styles for links as A: link, A: visited , A: active and A: hover

6. Write a Java Script to prepare EB Bill.

7. Write a Java Script to design a simple calculator to perform sum, product, difference and quotient operations.

8. Write a JavaScript to validate the following fields:
   i. Name (should contain alphabet and the length should not be less than 6 characters)
   ii. Password (should not be less than 6 characters length)
   iii. Email id (must follow the pattern)
   iv. Mobile No (should contain 10 digits)

	SEMESTER- III		
Core – III	Java Programming		
Course Code: 21UCSC31	Hrs / week : 4	Hrs / Semester: 60	Credits : 4

Objectives:

- To understand the basic concepts and fundamentals of platform independent Object Oriented Language.
- To demonstrate skills in writing programs using exception handling techniques and Multithreading
- To understand streams and efficient user interface design techniques.
- To understand the concept Applets, AWT and Database.

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			
Core – III	**Java Programming**		
Course Code: 21UCSC31	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Unit I:
The History and Evolution of Java: Creation of java - Operators – Control statements – Class , Methods , Inheritance
Packages and Interfaces: Packages - Access Protection – Importing Packages- Interfaces.
Self Learning: Data Types, Variables and Arrays.
Unit II:
Exception Handling: Exception-Handling Fundamentals-Exception Types-Uncaught Exceptions-Using try and catch- Multiple catch clauses-Nested try Statements-throw-throws-finally-Java's Built-in Exceptions.
I/O Basics-Reading Console Input-Writing Console Output-The PrintWriter Class-Reading and Writing Files
Multithreaded Programming:
Java Thread Model-Main Thread-Creating a Thread-Creating Multiple Threads- Using is Alive() and join ()-Thread Priorities-Synchronization - Interthread Communication-Suspending, Resuming, and Stopping Threads.
Unit III:
The Applet Class: Applet Basics -Applet Architecture - Applet Skeleton - Simple Applet Display Methods - Requesting Repainting - HTML APPLET tag - Passing Parameters to Applet.
Event Handling: Event Handling Mechanisms - Delegation Event Model - Event Classes(The Action Event, Item Event, Key Event , Mouse Event) - Sources of Events - Event Listener Interfaces(Action Listener ,Item Listener, Key Listener, Mouse Listener).
Introducing the AWT: AWT Classes-Window fundamentals -working with Frame Windows -Working with Graphics **Self Learning:** Adapter Classes
Unit IV:
Using AWT Controls:
Controls Fundamentals -Labels-Using Buttons-Applying Check Boxes-Check Box Group-Choice Controls-Using a Text Field-Using a Textarea-Understanding Layout Managers-[Flow Layout Only]-Menu Bars and Menus.
Unit V:
JDBC: JDBC – JDBC versus ODBC – Types of JDBC drivers – Connection – Statement –PreparedStatement.- Fields of ResultSet – Methods of ResultSet – Executing a query - ResultSetMetaData – DatabaseMetaData. **Self-Learning:** Basic data types in JDBC

Text Books:
1. Herbert Schildt. *The Complete Reference Java^{TM}* . New Delhi:Tata Mc Graw Hill.
   8^{th}Edition 2011. Chapters: 1, 9, 10, 11,21,22,23,24,29,30,31(Unit I,II,III,IV)
2. S. Horstmenn and Gary Cornell, *Core Java2 Volume II Advanced Features.* The Sun
   Microsystems press Java Series. 2002. Chapter: 4.(Unit V)
Books for Reference:

1.Steven Holzner.*Java 2 Programming Black Book*. New Delhi: Dream Tech Press.2005.

2.Joseph O'Neil.*JavaBeans Programming from the GroundUp*. New Delhi : TMGH. 1998

3.KathyWalrath.*The J2EE Tutorial*.New Delhi:Pearson. Education Asia 2003

SEMESTER- IV			
CORE IV	**RDBMS with PHP and MySQL**		
Code: 21UCSC41	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Objectives

- To understand the basic elements of a relational database management system
- To identify the data models for relevant problems
- To design entity relationship and convert entity relationship diagrams into RDBMS and formulate SQL queries on the respect data
- To create dynamic web pages and websites.
- To connect webpages with database.

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			
CORE IV	**RDBMS with PHP and MySQL**		
Code: 21UCSC41	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Unit-I

Data base System Applications, Purpose of Database Systems-Data Models – Entity Relationship Model Constructs: Entities, Attributes & Relationships, Types of entities, Types of Attributes, Types of Relationships, Degree of Relationship: Unary, Binary & Ternary. Cardinality Constraints, Examples

Unit- II

Normalization – Introduction, Non loss decomposition and functional dependencies, First, Second, and third normal forms – dependency preservation, Boyee/Codd normal form. Higher Normal Forms - Introduction, Multi-valued dependencies and Fourth normal form, Join dependencies and Fifth normal form

Unit- III

 Introduction to SQL -Introduction, SQL Environment, Data Definition Commands: Create, Alter, Drop, Truncate. Data Integrity Controls: Primary Key Constraint, Unique Key Constraint, Not Null Constraint, Foreign Key Constraint, Check Constraint. Data Manipulation Commands: Insert, Update, Delete. Data Control Commands: Commit, Rollback. SQL Operators: Arithmetic, Logical, Relational and Special Operators.

Unit-IV

Introduction to PHP- history- features-variables- statements-operators-conditional statements-if-switch-nesting conditions-merging forms with conditional statements-loops-while-do-for – loop iteration with break and continue- Arrays: Creating an array- user defined functions- using files- sessions- cookies

Unit-V

Working MySQL with PHP-database connectivity- usage of MYSQL commands in PHP-processing result sets of queries-formatting query output with Character- Numeric- Date and time –sample database applications.

Text Books:

1. Raghurama Krishnan,*Data base Management Systems*,Johannes Gehrke, TATA McGrawHill 3rd Edition.
2. Vikram Vaswani ,*How to Do Everything with PHP & MySQL,* TATA McGrawHill

Books for Reference:

1. Elmasri Navathe ,*Fundamentals of Database Systems*, Pearson Education.
2. C.J. Date, A.Kannan, S.Swami Nadhan,*An Introduction to Database systems*, Pearson, Eighth Edition
3.Martin Gruber,*Understanding SQL,*Manish Jain for BPB publications
4.Steven Holzner,*The complete Reference*,TATA McGraw-Hill Edition
5.Alexis Leon Mathews,*Database Management Systems*,Leon Vikas

SEMESTER- III			
Core – Practical III	**Java Programming Lab**		
Course Code: 21UCSCR3	**Hrs / week : 3**	**Hrs / Semester: 45**	**Credits : 2**

1. Implement Overloading Constructor and Overloading Method

2. Writing a Program to apply method Overriding concept.

3. Development of Java Packages

4. To create and implement an interface.

5. To create a thread i. Using Thread class   ii. Using runnable interface

6. To create an applet with four Checkboxes with labels and a Text area object.

7. To create a window with a checkbox group with boxes for the colors, Violet, Indigo, Yellow, Orange, Red, Blue and Green. When the button is selected the background color must change accordingly.

8. To demonstrate the use of choice box.

9. To throw the following exception, i. Negative Array Size ii. Array Index out of bounds

10. To illustrate mouse event handling.

11. To create a File menu with options new, save, and close, edit menu with options cut, copy and paste.

SEMESTER- III			
Skill Based Elective	**Microprocessors**		
Course Code: 21UCSS31	**Hrs / week : 2**	**Hrs / Semester: 30**	**Credits : 2**

Objectives:
- To acquire fundamental knowledge on hardware and software concepts of microcomputer and
- microprocessors architecture and design.
- To provide assembly language programming Techniques.

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 Elective1	Microprocessors		
Course Code: 21UCSS31	Hrs / week :2	Hrs / Semester: 30	Credits : 2

Unit I:

Microprocessor, Microcomputers, and Assembly Language:

Microprocessors-Microprocessor Instruction Set and Computer Languages-From Large Computers to Single Chip Micro Controllers.

Unit II

Introduction to 8085 Assembly Language Programming:

Instruction Classification – Instruction Format -How to Write, Assemble and Execute a Simple Program8085 Microprocessor Architecture And Memory Interfacing: The 8085 MPU- Memory Interfacing – Interfacing the 8155 memory section.

Unit III:

Introduction to 8085 Instructions:

Data transfer operations-Arithmetic Operations-Logic Operation – Branch Operations – Writing Assembly Language Programs-Debugging a Program

Unit IV:

Programming Techniques With Additional Instructions:

Programming Techniques: Looping, Counting, and Indexing- Additional Data Transfer and 16bit Arithmetic Instruction- Arithmetic Operations Related to Memory-Logic Operations: Rotate, Compare-Dynamic Debugging.

Unit V:

Counters And Time Delays:

Counters and Time Delays-Hexadecimal Counter-Modulo ten Counter-Generating Pulse Waveforms-Debugging Counter and Time Delay Programs.

Stacks And Subroutines:

Stack-Subroutine-Restart, Conditional Call and Return Instruction-Advanced Subroutine Concepts.

Text Book:

1. Ramesh Gaonkar. *Microprocessor Architecture. Programming, And Applications With The 8085*. Bangalore. Shree Hari publications .6th edition. 2020

Books for Reference:

1. P Mathur. *Introduction to Microprocessors*. India:Tata McGraw Hill. Third edition 2018.

2.Walter A.Triebel,AvtarSing.*The 8088 and 8086 microprocessors (programming, interfacing, software, hardware and Applications*. New Delhi:Pearson 2002 .

3.Kumar K. Udaya.*The 8085 Microprocessor* .India:Pearson Education. 1st Edition 2008.

	SEMESTER- III		
Skill Based Elective 2	E- Commerce		
Course Code: 21UCSS32	Hrs / week :2	Hrs / Semester: 30	Credits: 2

Objectives:

- To understand and ascertain the importance E-Commerce
- Acquire knowledge about E-marketing and E-advertising
- To Identify the key security threats in the E-commerce environment.

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			
Skill Based Elective 2	**E-Commerce**		
Course Code: 21UCSS32	**Hrs / week :2**	**Hrs / Semester: 30**	**Credits : 2**

Unit -I
E – Commerce: Meaning, definition, features, functions of E-Commerce, Scope, Benefits and limitations of E-Commerce — E-commerce opportunities and challenges for Industries.

Unit –II
Business Models for E-commerce: The Birth of Portals – E-Business Models – Business-to Consumer (B2C) – Business-to-Business (B2B) – Consumer-to Consumer (C2C) – Consumer to-Business (C2B) – Brokerage Model – Value Chain Model – Advertising Model.

Unit –III
E-marketing – Traditional Marketing Vs. E-Marketing – Impact of E-commerce on markets – Marketing issues in E-Marketing – Online Marketing

Unit –IV
E-advertising – Internet Marketing Trends – E-Branding – Marketing Strategies.
E-Commerce Legal Framework – Rights and Obligations in the World of E-commerce

Unit –V
E-Security: Security for E-commerce – Security Design – Analysing risk – E-Banks and Security
Text book:

P.T. Joseph, SJ, 'E-Commerce - An Indian Perspective', Third edition, PHI Publishing Co. Ltd., Newdelhi

Books for Reference:
1. Kamlesh K. Bajaj and Debjani Nay, 'E-Commerce - The Cutting Edge of Business' - Tata McGraw Hill Publishing Co. Ltd., New Delhi, 2000.
2. Turban, Efraim, and David King, "Electronic Commerce: A Managerial Perspective", 2010, Pearson Education Asia, Delhi.
3. Smantha Shurety, "E–Business with Net Commerce", Addison – Wesley, Singapore.

Websites:
https://forms.iimk.ac.in/libportal/ebook/EB8.pdf
https://backup.pondiuni.edu.in/storage/dde/dde_ug_pg_books/E-%20Commerce.pdf

SEMESTER- IV			
Skill Based Elective 2	**Cyber Security**		
Course Code: 21UCSS42	**Hrs / week :2**	**Hrs / Semester: 30**	**Credits: 2**

Objectives:

- To understand the basic concepts of Cyber Ethics, Virtues and Values
- To design and develop a security architecture for society.
- To learn about how to maintain the Confidentiality, Integrity and Availability of a data

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			
Skill Based Elective 2	Cyber Security		
Course Code: 21UCSS42	Hrs / week :2	Hrs / Semester: 30	Credits: 2

Unit-I:
Cyber Ethics: Ethics in Cyber Society: Core Values and Virtues: Definitions, Specificities of Cyberspace, Dimensions of Cyber Ethics in Cyber Society, Core Values and Virtues, Cyber Ethics by norms, Laws and Relations.

Unit-II:
Artificial Intelligence Ethics: "AI for Good". Cyber Ethics as Business Ethics. Cyber Law and Cyber Ethics: Importance of Cyber Law, The Significance of Cyber Ethics, and Cyber Crime is Unethical and Illegal, The need for Cyber Regulation.

Unit-III:
Ethics in the Information Society, Technologies Need Standards, Rules and Regulations, Technology
Ethics, Legal Ethics, the Nine P's of Ethics in Information Society.

Unit-IV:
Cyber Crime: Cybercrime offences, Computer Related Offences, Content Related offences, Government Efforts in Cyber security, Cyber security in the Academic world. Critical Thinking of Citizens: Ethics in Digital Age, Acting Responsibly in the Digital World, Three Dilemmas: Ethical Intelligence in Practice.

Unit-V:
Cyber Bullying: Introduction – Cyber Bullying, Peoples in Cyber Bullying, Signs of Cyber Bullying, Suicidal Tendencies, Role of Children and Duty of parents, Limiting Access of Technology, Child Bullying. Child Protection Online: Prevention through Education for Digital Literacy and Safety.

Text Book:
1. ChristophStuckelberger, PavanDuggal. *Cyber Ethics 4.0, Serving Humanity with Values*.
 Globethics.net Global series no 17, 2018.

Books for Reference:
1. Diane Bailey.*Cyber Citizenship and Cyber Safety: Cyber Ethics*.USA:The Rosen Publishing group 2008.
2. Kizza, Joseph Migga, Ethical and Social Issues in the Information Age, 5th edition, Springer, 2015.
3. Bynum, Terrel Ward &Rogerson, Simon, eds: *Computer Ethics & Professional Responsibility: Introductory Text & Readings*. Blackwell 2004.

	SEMESTER IV	
Self Study (optional)	**Web Technology**	
Course Code: 21UCSSS2		**Credits :2**

Objectives:

- Understand the principles of creating an effective Web page.
- Learn the language of the web:HTML and CSS
- Develop basic programming skills using javaScript.
- Be able to embed social media content into webpages

Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	understand Internet standard and Internet protocols	1	Un
CO-2	demonstrate JavaScript	6	Ap
CO-3	develop dynamic web pages using JavaScript (client side programming).	5	Ap
CO-4	design interactive web pages using DHTML	5	Ap
CO-5	discuss how XML DTDs differ from XML schemas	1	An
CO-6	design a simple website	6	Ap

SEMESTER IV	
Self Study (optional)	**Web Technology**
Course Code: 21UCSSS2	**Credits :2**

Unit I:
Introduction What is Internet? History of Internet, Internet Services and Accessibility, Uses of Internet, Protocols, Web Concepts, Internet Standards

Unit II:
Internet protocols Introduction, Internet Protocols, Host Names, Internet Applications and Application Protocols

Unit III:
Javascript Introduction, Language Elements, Objects of Javascript, Other Objects, Arrays

Unit IV:
Dynamic HTML(DHTML) Introduction, Cascading Style Sheets (CSS), DHTML Document Object Model and Collections, Event Handling, Filters and Transactions, Data Binding

Unit V:
Extensible Mark-Up Language (XML) Introduction, HTML vs XML, Syntax of the XML Document, XML Attributes, XML Validation, XML DTD, The Building Blocks of XML Documents, DTD Elements, DTD Attributes, DTD Entities, DTD Validation, XSL, XSL Transformation, XML Namespaces, XML Schema

Text Book:
1. N.P.Gopalan, J.Akilandeseswari*, Web Technology – A Developer's Perspective*, PHI,2007

Books for Reference:
1.   Achyut S Godbole, AtulKahate, *Web Technologies - TCP / IP To Internet Application Architectures*, Tata McGraw - Hill Education,2008.
2.   Vipin Kumar, *Web Technologies,* A.B. Publication publisher, 2008
3.   Jeffry C. Jakson, *Web Technologies by Computer Science Perspective*,pearson publication, 2005