DEPARTMENT OF COMPUTER SCIENCE

Programme Outcomes (POs)

POs	Upon completion of B.Sc. Computer Science programme, the graduates will be ableto:
PO - 1	utilize scientific knowledge to pursue higher studies in the relevant field.
PO - 2	create innovative ideas to enhance entrepreneurial skills for economic independence.
PO – 3	face challenging competitive examinations that offer rewarding careers.
PO – 4	reflect upon green initiatives and take responsible steps to build a sustainable environment.
PO – 5	handle ethical issues with social responsibility.
PO – 6	communicate effectively and collaborate successfully with peers to become competent professionals.

Programme Specific Outcomes (PSOs)

PSOs	Upon completion of the B.Sc. Degree Programme, the graduateswill be able to:
PSO – 1	acquire the domain knowledge with critical thinking to serve the technical society as software engineer, data analyst and designing professional.
PSO - 2	enrich the managerial skills through team building and social responsibility.
PSO – 3	enhance the communication skills with lifelong learning.
PSO - 4	apply modern techniques to sustain the ever-changing era with values.

Semester I

Major Core I: Programming Concepts in C

Sub. Code: SC2011

No. of hours per week	No. of credits	Total no. ofhours	Total marks
4	**4**	**60**	**100**

Objectives:

1. To develop programming skills using the fundamentals and basics of C language
2. To develop programs using the basic elements like control statements, Arrays and Strings

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	recall the basic structure and key elements.	**PSO - 3**	**R**

CO - 2	understand the fundamentals of C programming	**PSO - 1**	**U**
CO - 3	analyze the various programming constructs and implement it to perform specific task.	**PSO - 4**	**AN,AP**
CO - 4	design and develop modular programming skills	**PSO - 1**	**C**

Semester I

Major Practical I: C Programming

Sub. Code: SC20P1

No. of hours per week	No. of credits	Total no. of hours	Total marks
4	**2**	**60**	**100**

Objectives:

1. It aims to train the student to the basic concepts of the C-programming language
2. To improve the programming skills through C language

Learning Outcome

LO	Upon completion of this course the students will be able to :	PSO addressed	CL
LO- 1	understand and solve simple physical problems	**PSO - 1**	**U**
LO- 2	solve mathematical equations using C programs	**PSO - 1**	**AP**
LO- 3	understanding a concept of functional hierarchical code organization	**PSO - 4**	**U**
LO- 4	write simple C programs to define the key concepts	**PSO - 3**	**R**
LO -5	develop simple C programs	**PSO - 1**	**C**

Semester I

Allied I: Digital Principles and Applications

Course Code: SA2011

Hours / Week	Credits	Total Hours	Marks
4	**3**	**60**	**100**

Objectives:

1. It aims to train the student to the basic concepts of Digital ComputerFundamentals
2. To impart the in-depth knowledge of logic gates, Boolean algebra, combinationalcircuits and sequential circuits

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	recall and understand the basic architecture of a computer system	**PSO – 1**	**R, U**
CO - 2	understand the concepts of memory and storage systems.	**PSO – 1**	**U**
CO - 3	classify the various input and output devices.	**PSO – 1**	**AN**
CO -4	analyze the basic logic gates and interpret Boolean algebra and simplify simple Boolean functions by using basic Boolean properties	**PSO – 2**	**AN, AP**
CO - 5	perform conversion among different number systems and find complements of various numbers.	**PSO – 4**	**AP**
CO - 6	design various sequential and combinational circuits	**PSO – 4**	**C**

Semester I

Add on Course: Professional English for Physical Sciences

Course Code: APS201

Hours / Week	Credits	Total Hours	Marks
2	**2**	**30**	**100**

Objectives:

1. To develop the language skills of students by offering adequate practice in professional contexts.
2. To enhance the lexical, grammatical and socio-linguistic and communicative competence of first year physical sciences students
3. To focus on developing students' knowledge of domain specific registers and the required language skills.
4. To develop strategic competence that will help in efficient communication
5. To sharpen students' critical thinking skills and make students culturally aware of the target situation.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Recognise their own ability to improve their own competence in using the language	**PSO – 1**	**U**
CO -2	Use language for speaking with confidence in an intelligible and acceptable manner	**PSO – 4**	**AN**
CO -3	Understand the importance of reading for life	**PSO - 4**	**U**
CO -4	Read independently unfamiliar texts with comprehension	**PSO – 2**	**R**
CO -5	Understand the importance of writing in academic life	**PSO – 2**	**U**
CO -6	Write simple sentences without committing error of spelling or grammar	**PSO – 2**	**C**

Semester I

Skill Enhancement Course (SEC): Meditation andExercise

Course Code: SEC201

No. of Hours per Week	Credits	Total No. of Hours	Marks
2	**2**	**30**	**100**

Objectives

1. To promote good - health and emotional stability among students.
2. To increase relaxation of body and mind.
3. To equip the students with traditional understanding of yogasanas and meditation.
4. To prevent stress-related health problems.

Semester I

NME: Internet and Web Designing with HTML

Course Code: SNM201

No. of Hours per Week	Credits	Total No. of Hours	Marks
2	**2**	**30**	**100**

Objectives:

1. To enable the students to specify design rules in constructing web pages andsites.
2. To enable the students to learn the basic working scheme of the Internet and World Wide Web.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO Addressed	CL
CO - 1	analyze a web page and identify its elements and attributes.	**PSO-1**	**AN**
CO - 2	design web pages using DHTML and Cascading Style Sheets.	**PSO-2**	**C**
CO - 3	design and construct web sites.	**PSO-4**	**C**
CO – 4	create e-mail ID and browse in internet.	**PSO-4**	**AP, C**

Semester I & II
Foundation Course I - Values for Life
Course Code: FCV201

No. of Hours per Week	Credits	Total No. of Hours	Marks
1	**1**	**15**	**100**

Objectives:

1. To inculcate the importance of values among the students.

2. To instill personal, family, social and religious values among the learners.

3. To equip them as responsible human beings.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO Addressed	CL
CO - 1	understand the human values, its importance and components.	**PSO-1**	**U**
CO - 2	applythe values learnt in real life situation	**PSO-2**	**AP**
CO - 3	comprehend the different personal values and its components	**PSO-4**	**U**
CO - 4	realize the personal values and to practice them	**PSO-4**	**AP**
CO - 5	understand the family values	**PSO-4**	**U**

Semester II

Major Core II: Object Oriented Programming Using C++

Sub. Code: SC2021

No. of Hours per Week	Credits	Total No. of Hours	Marks
4	4	60	100

Objectives:

1. To study the OOPconcepts
2. To impart basic knowledge of Programming Skills in C++language.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO Addressed	CL
CO – 1	understand Object Oriented Programming and Procedure Oriented Language and data types in C++.	PSO - 1	U
CO – 2	list out the tokens, keywords, identifiers used in C++ programming language	PSO – 1	R
CO – 3	to program using C++ features such as composition of objects, operator overloading, inheritance, polymorphism etc.	PSO – 4	AP
CO – 4	build knowledge about important concepts like functions, classes and constructors.	PSO – 1	U
CO – 5	to build C++ classes using appropriate encapsulation and design.	PSO – 2	C
CO – 6	evaluate the process of data file manipulations using C++	PSO – 1	E
CO – 7	apply virtual and pure virtual function and complex programming situations	PSO - 4	AP

Semester II

Major Practical II: C++ Programming

Sub. Code: SC20P2

No. of hours per week	No. of credits	Total no. of hours	Total marks
4	2	60	100

Objectives:

1. To develop skill to make use of arrays and pointers in C++ programs.
2. To build knowledge about important concepts like functions, classes and constructors.

Learning Outcome

LO	Upon completion of this course the students will be able to :	PSO addressed	CL
LO- 1	understand and solve simple physical problems	**PSO – 1**	**U**
LO- 2	solve mathematical equations using C++ programs	**PSO – 2**	**AP**
LO- 3	write simple C++ programs to define the key concepts	**PSO - 2**	**R**
LO -4	develop simple C++ programs	**PSO – 1**	**C**

Semester II

Allied II: Computer Organization and Architecture

Course Code: SA2021

No. of Hours per Week	Credits	Total No. of Hours	Marks
4	**3**	**60**	**100**

Objectives

1. To understand the concept of computer architecture
2. To understand the working of a central processing unit & architecture of a computer.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	understand the theory and architecture of central processing unit	**PSO – 1**	**U**
CO -2	use appropriate tools to design verify and test the CPU architecture.	**PSO – 2**	**Ap**
CO -3	learn the concepts of parallel processing, pipelining and interprocessor communication.	**PSO - 3**	**U**
CO -4	define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.	**PSO – 4**	**Ap**
CO -5	exemplify in a better way the I/O and memory organization	**PSO –2**	**U**

Semester II

Add on Course: Professional English for Physical Sciences

Course Code: APS202

Hours / Week	Credits	Total Hours	Marks
2	2	30	100

Objectives:

1. Develop their competence in the use of English with particular reference to the workplace situation.
2. Enhance the creativity of the students, which will enable them to think of innovative ways to solve issues in the workplace.
3. Develop their competence and competitiveness and thereby improve their employability skills.
4. Help students with a research bent of mind develop their skills in writing reports and research proposals.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Attend interviews with boldness and confidence.	PSO – 1	AP
CO -2	Adapt easily into the workplace context, having become communicatively competent.	PSO – 4	AP
CO -3	Apply to the Research & Development organisations/ sections in companies and offices with winning proposals.	PSO - 4	AP

Semester II

NME: Desktop Publishing using Scribus

Course Code: SNM202

No. of Hours per Week	Credits	Total No. of Hours	Marks
2	2	30	100

Objectives:

1. To provide information about open source philosophy surrounding scribus and understand what scribus can help youdo.
2. To learn how the different aspects of scribus's interface can be used to develop all of the different document needs that we might have for desktoppublishing.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO Addressed	CL
CO - 1	use critical thinking skills to independently design and create magazines, newsletter, brouchers etc.	**PSO-1**	**C**
CO - 2	understand the importance of lifelong, student driven learning	**PSO-2**	**U**
CO - 3	know the fundamentals of DTP and easily produce stylised documents	**PSO-2**	**U**
CO - 4	apply major design and marketing concepts to real world projects	**PSO-4**	**AP**

Semester II

Skill Enhancement Course (SEC): Computer Literacy

Course Code: SEC202

No. of Hours per Week	Credits	Total No. of Hours	Marks
2	**2**	**30**	**100**

Objective

To enable students to understand the basic working of ms office which includes ms word, exceland powerpoint.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Demonstrate basic knowledge navigating the Word Ribbon Interface.	PSO – 1	AP
CO -2	Demonstrate the basic mechanics of creating Word documents for office use.	PSO - 1	AP
CO -3	Demonstrate introductory formatting techniques and presentation styles.	PSO – 1	AP
CO -4	Demonstrate working knowledge of producing a mail merge.	PSO - 1	AP
CO -5	Create and design a spreadsheet for general office use.	PSO -1	C
CO -6	Demonstrate the use of basic functions and formulas.	PSO - 1	AP

CO -7	Demonstrate the basic mechanics of creating a PowerPoint presentation.	PSO - 3	AP
CO -8	Demonstrate working knowledge of using clip art to enhance ideas and information in a Powerpoint presentation.	PSO - 3	C

Semester II

Service Learning Programme (SLP): Community Engagement Course

Course Code: SLP201

No. of Hours per Week	Credits	Total No. of Hours	Marks
-	2	30	100

Objectives:

1. To develop an appreciation of rural culture, life-style and wisdom amongst students
2. To learn about the status of various agricultural and rural development programmes
3. To understand causes for rural distress and poverty and explore solutions for the same
4. To apply classroom knowledge of courses to field realities and thereby improve quality of learning.

Learning Outcomes:

After completing this course, student will be able to

1. Gain an understanding of rural life, culture and social realities
2. Develop a sense of empathy and bonds of mutuality with local community
3. Appreciate significant contributions of local communities to Indian society and economy
4. Learn to value the local knowledge and wisdom of the community
5. Identify opportunities for contributing to community's socio-economic improvements

Semester III

Major Core III: Programming in Java

Course Code: SC2031

Hours / Week	Credits	Total Hours	Marks
5	4	75	100

Objectives:

1. To understand the basic programming constructs of Java Language.
2. To explore the features of Java by coding.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	Define the Concept of OOP and Arrays	**PSO – 1**	**U**
CO - 2	Analyze the Structure of the Java programming Language and Classes	**PSO – 2**	**AN**
CO - 3	Implement various Errors handling technique using Exception Handling to solve complicated problem.	**PSO – 3**	**U**
CO -4	Create Java program to understand the Applet program to display window based Activities.	**PSO – 3**	**C**
CO - 5	Design a java program by using AWT Classes	**PSO – 4**	**C**

Semester III

Major Core IV: Data Structures and Algorithms

Course Code: SC2032

Hours / Week	Credits	Total Hours	Marks
5	**4**	**75**	**100**

Objectives:

1. To introduce the various data structures and their implementations.
2. Study various sorting algorithms

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Summarize different categories of data Structures	**PSO – 1**	**U**
CO -2	Identifydifferent parameters to analyze the performance of an algorithm.	**PSO – 2**	**AP**
CO -3	Explain the significance of dynamic memory management Techniques	**PSO - 3**	**U**
CO -4	Design algorithms to performoperations withLinear and Nonlinear datastructures	**PSO – 4**	**AP**
CO -5	Illustrate various technique to for searching, Sorting and hashing	**PSO –2**	**U**
CO -6	Choose appropriate data structures to solve realworld problems efficiently.	**PSO –4**	**AP**

Semester III

Major Core V: Computer Networks

Course Code: SC2033

Hours / Week	Credits	Total Hours	Marks
5	4	75	100

Objectives:

1. To understand the concept of Computer network
2. To impart knowledge about networking and inter networking devices.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Independently understand basic computer network technology.	**PSO – 1**	**U**
CO -2	Understand and explain Data Communications System and its components.	**PSO – 2**	**U**
CO -3	Identify the different types of network topologies and protocols	**PSO - 3**	**U**
CO -4	Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.	**PSO – 3**	**U**
CO -5	Apply the different types of network devices and their functions within a network	**PSO – 3**	**AP**
CO -6	Familiarity with the basic protocols of computer networks, and how they can be used to assist in network design and implementation.	**PSO –4**	**AP**

Semester III

Major Practical III: Java Programming

Course Code: SC20P3

Hours / Week	Credits	Total Hours	Marks
4	2	60	100

Objectives:

1. To be knowledgeable enough about basic Java language syntax and semantics to be able to successfully read and write Java computer programs.
2. To implement interfaces, inheritance, and polymorphism as programming techniques and apply exceptions handling.

Learning Outcome

LO	Upon completion of this course the students will be able to :	PSO addressed	CL
LO -1	Create a java program to calculate simple mathematical problems.	**PSO – 1**	**C**
LO -2	Create a java program using Error handling technique	**PSO – 2**	**C**
LO -3	Create Applet program to implement window based Activities	**PSO - 3**	**C**

Semester III

Major Practical IV: Data Structures Using C++

Course Code: SC20P4

Hours / Week	Credits	Total Hours	Marks
4	**2**	**60**	**100**

Objectives:

1. To understand importance of data structures in context of writing efficient programs.
2. To develop skills to apply appropriate data structures in problem solving.

Learning Outcome

LO	Upon completion of this course the students will be able to :	PSO addressed	CL
LO -1	Learn the basic types for data structure, implementation and application.	**PSO - 2**	**AP**
LO -2	Know the strength and weakness of different data structures.	**PSO - 1**	**U**
LO -3	Use the appropriate data structure in context of solution of given problem.	**PSO - 3**	**AP**
LO -4	Develop programming skills which require to solve given problem	**PSO - 4**	**C**

Semester III

Allied III: Numerical and Statistical Methods

Course Code: SA2031

Hours / Week	Credits	Total Hours	Marks
5	3	75	100

Objectives:

1. To equip the students with statistical tools and concepts that help in decision making.
2. To apply the knowledge of computing and mathematical methods appropriate to various discipline.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Solve an algebraic and Transcendental Equations using an appropriate numerical methods	**PSO – 1**	**C**
CO -2	Find an error analysis for a given numerical method	**PSO – 4**	**R**
CO -3	Solve a simultaneous equation using an appropriate numerical method	**PSO – 4**	**C**
CO -4	Find inverse of a matrix using Back Substitution method	**PSO – 3**	**R**
CO -5	Find a polynomial using interpolation methods	**PSO – 2**	**R**
CO -6	Determine correlation and rank correlation coefficient between two variables	**PSO – 2**	**E**
CO -7	Find a regression equations using the given data	**PSO – 3**	**R**
CO -8	Acquire problem solving techniques and Baye's Theorem to solve real world problems	**PSO – 4**	**AP**

Semester III & IV

Foundation Course II: Personality Development

Course Code: FCV202

No. of Hours per Week	Credits	Total No. of Hours	Marks
1	1	15	100

Objectives:

1. To practice personal and professional responsibility.
2. To develop and nurture a deep understanding of personal motivation.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO Addressed	CL
CO - 1	identify various dimensions and importance of effective personality	PSO-1	AP
CO - 2	apply the models of positive thinking in real life situations	PSO-2	AP
CO - 3	To overcome shyness and loneliness and cope up with the society.	PSO-4	AN

Semester IV

Major Core VI: UNIX and Shell Programming

CourseCode: SC2041

Hours / Week	Credits	Total Hours	Marks
5	5	75	100

Objectives:

1. To familiarize students with the UNIX environment and shell scripting/programming.
2. To inculculate the knowledge of working process of UNIX operating systems.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	identify set of commands in UNIX	PSO – 1	R
CO -2	describe the features & functions of an operating system.	PSO - 1	U

CO -3	Customize environment settings using a text editor	**PSO – 1**	**U**
CO -4	demonstrate UNIX commands for file handling and process control	**PSO - 1**	**AP**
CO -5	combine several simple commands in order to produce more powerful operations.	**PSO -1**	**AP**
CO -6	utilize system utilities to perform administrative tasks	**PSO - 1**	**AP**
CO -7	analyze the working of the user defined commands and will be able to change the permissions associated with files.	**PSO - 3**	**AN**
CO -8	create and manage simple file processing operations, organize directory structures with appropriate security	**PSO - 3**	**C**
CO -9	create, delete, move and rename files and directories	**PSO – 1**	**C**

Semester IV

Major Core VII: Relational Database Management System

CourseCode: SC2042

Hours / Week	Credits	Total Hours	Marks
5	**5**	**75**	**100**

Objectives:

1. To describe a sound introduction to the discipline of database management systems.
2. To give a good formal foundation on the relational model of data and study the SQL in detail.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Describe basic concepts of data base System and Architecture	**PSO – 1**	**R**
CO -2	Define the logical design of database including E-R Model and Normalization approach	**PSO - 1**	**U**

CO -3	Understand and apply the basic of SQL and Authorization methods	**PSO – 3**	**U**
CO -4	Analyze Normal forms and RDBMS methods	**PSO - 3**	**AN**
CO -5	Apply Timestamp and Transaction management	**PSO -4**	**AP**

Semester IV

Elective I: (a) Software Engineering

CourseCode: SC2043

Hours / Week	Credits	Total Hours	Marks
5	**4**	**75**	**100**

Objectives:

1. To understand the software engineering concepts.
2. Understand the coding, testing and user interface design
3. Design, develop the software projects and software reliability and quality management

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Apply software engineering principles and techniques	**PSO – 1**	**AP**
CO -2	Develop, maintain and evaluate large-scale software systems.	**PSO – 4**	**C**
CO -3	Produce efficient, reliable, robust and cost-effective software solutions.	**PSO - 4**	**C**
CO -4	Ability to work as an effective member or leader of software engineering teams.	**PSO – 2**	**AP**
CO -5	Ability to manage time, processes and resources effectively by prioritising competing demands to achieve personal and team goals	**PSO – 2**	**U**

Semester IV

Major Practical V: Shell Programming

Course Code: SC20P5

Hours / Week	Credits	Total Hours	Marks
4	2	60	100

Objectives:

1. Simulate the file commands
2. Write simple shell programming

Learning Outcome

LO	Upon completion of this course the students will be able to :	PSO addressed	CL
LO -1	Run various UNIX commands on a standard UNIX Operating system	PSO – 1	AP
LO -2	Run C / C++ programs on UNIX.	PSO – 3	AP
LO -3	Do shell programming on UNIX OS	PSO - 4	C
LO -4	Employ decision making and looping construct to write a shell script	PSO – 2	AP

Semester IV

Major Practical VI: SQL and PL/SQL

Course Code: SC20P6

Hours / Week	Credits	Total Hours	Marks
4	2	60	100

Objectives:

1. Study the various DDL, DML commands.
2. Write queries in SQL to retrieve any type of information from a data base.

Learning Outcome

LO	Upon completion of this course the students will be able to :	PSO addressed	CL
LO -1	Understand the logical structure of the RDBMS	PSO – 1	U
LO -2	Understand How the data will be stored and retrieved	PSO – 4	U

LO -3	Understand the PL/SQL to do such things as modify your business rule.	**PSO - 4**	**U**

Semester IV

Allied IV: Discrete Mathematics

Course Code: SA2041

Hours / Week	Credits	Total Hours	Marks
5	**3**	**75**	**100**

Objectives:

1. To understand the logic, functions and reasoning.
2. To learn relations and probability

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Learn the basic concepts of sets, permutations, relations, graphs, trees and finite state machines.	**PSO – 1**	**U**
CO -2	Represent discrete objects and relationships using abstract mathematical structures.	**PSO – 4**	**AN**
CO -3	Apply basic counting techniques to solve combinatorial problems	**PSO - 4**	**AP**
CO -4	Understand the basic principles of sets and operations in sets	**PSO – 2**	**U**
CO -5	Apply counting principles to determine probabilities.	**PSO – 2**	**AP**

Semester V

Major Core VIII: Web Technology: Theory and Practice

Course Code: SC2051

No. of Hours / Week	Credit	Total Hours	Marks
6	**5**	**90**	**100**

Objectives:

1. To study the various HTML tags and design simple web pages

2. To study the scripting language Java Script.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	develop an ability to design and implement static and dynamic web pages.	**PSO – 1**	**C**
CO -2	differentiate web applications using client-side (JavaScript, HTML, XML) and server-side technologies (ASP.NET, ADO.NET).	**PSO –1**	**AN**
CO -3	define the fundamental ideas and standards underlying Web Service Technology	**PSO – 1**	**U**
CO -4	apply the knowledge of the internet and related internet concepts that are vital in understanding web application development and analyze the insights of internet programming to implement complete application over the web.	**PSO –3**	**AP**

Semester V

Major Core IX: Mobile Computing and its Applications

Sub. Code: SC2052

No. of Hours per Week	Credit	Total No. of Hours	Marks
5	**5**	**75**	**100**

Objectives:

1. To understand mobile computer systems particularly in the context of wireless network systems.
2. To emphasize how to interface hardware to mobile computing devices.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO -1	Understand the basic concepts and principles in mobile computing.	**PSO – 1**	**U**

CO -2	Describe the concepts of FDMA, TDMA, packet delivery and handover management.	**PSO - 1**	**U**
CO -3	Acquire and apply the knowledge of conventional TCP/IP protocols.	**PSO – 4**	**U, AP**
CO -4	Classify the various data delivery mechanisms and data synchronization.	**PSO – 2**	**AN**
CO -5	Understand and apply various routing algorithms for mobile applications	**PSO – 4**	**U, AP**

Semester V

Elective II: (a) Multimedia Systems

Sub. Code: SC2053

No. of Hours per Week	Credit	Total No. of Hours	Marks
5	**4**	**75**	**100**

Objectives

1. To understand the standards available for different audio, video and text applications
2. To learn various multimedia authoring systems in multimedia production team

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO -1	convey multimedia and design fonts used in texts	**PSO – 3**	**C**
CO -2	create image and produce audio inserted multimedia projects	**PSO –1**	**AP**
CO -3	make animations and video clips	**PSO – 3**	**AP**
CO -4	Understand the requirements for multimedia preparation	**PSO – 1**	**U**
CO - 5	analyze the process of planning, preparing and owning the multimedia	**PSO – 4**	**AN**

Semester V

Major Practical VII: Web Technology Lab

Course Code: SC20P7

No. of Hours / Week	Credit	Total Hours	Marks
6	**3**	**90**	**100**

Objectives:

1. Design web pages using various HTML tags.
2. Write simple programs in Java Script

Learning Outcome

LO	Upon completion of this course the students will be able to :	PSO addressed	CL
LO-1	build interactive web page using HTML.	**PSO –1**	**C**
LO-2	construct and manipulate Java Script applications	**PSO - 1**	**C**
LO-3	develop dynamic web pages using client side programming.	**PSO - 1**	**C**
LO-4	identify, formulate and analyze problems as well as identify the computing requirements appropriate to their solutions.	**PSO – 2**	**AN**

Semester V

Ability Enhancement Course: Environmental Studies

Course Code: AEC201

Hours per Week	Credits	Total Hours	Marks
2	**2**	**30**	**100**

Objectives

1. To understandthe ecosystem, biodiversity andtheir conservation
2. To make them identify the impact of pollution , disaster and population

Course outcome

CO	Upon completion of this course the students will be able to:	CL
CO - 1	understand the multidisciplinary nature of environmental studies	U

CO - 2	recall the components of different ecosystems	R
CO - 3	interpret the levels of diversity and its conservation	A
CO - 4	analyze the impact of population, pollution and disasters	An

Semester V

Foundation Course Ill - Human Rights Education (HRE)

Course. Code: FCV203

Objectives

1. Make them to identify issues, problems and violation of human rights.
2. Resolve the problems of human rights in their own life and society.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO -1	explains the historical growth of the idea of human rights.	**PSO – 3**	**U**
CO -2	interpret the problems of human rights and find solution.	**PSO –1**	**A**
CO -3	analyze the importance of women and child rights	**PSO – 3**	**AN**
CO -4	evaluate concepts and ideas of human rights	**PSO – 1**	**E**

Semester VI

Major Core X: Android Programming

Sub. Code: SC2061

No. of Hours per Week	Credit	Total No. of Hours	Marks
5	**5**	**75**	**100**

Objectives:

1. To enable the students to build own Android Apps and to use Android's Communication APIs for SMS, telephony etc.

2. To develop mobile applications with social and ethical responsibilities in a professional working discipline.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO -1	describe the platforms upon which the Android OS will run	**PSO - 1**	**U**
CO -2	apply the fundamental paradigms and technologies to develop mobile applications	**PSO - 2**	**AP**
CO -3	create a simple application that runs under the Android operating system	**PSO - 4**	**C**
CO -4	develop an application that uses multimedia under Android operating system	**PSO - 4**	**C**
CO -5	implement various methods in Android to create mobile applications for communication network	**PSO - 2**	**AP**

Semester VI

Major Core XI: Computer Graphics

Course Code: SC2062

No. of Hours / Week	Credit	Total Hours	Marks
5	**5**	**75**	**100**

Objectives:

1. Understand the basic concepts of Computer Graphics
2. Apply geometric transformations, viewing and clipping on graphical objects
3. Understand visible surface detection techniques and illumination models

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO -1	explain the basics of graphics system	**PSO – 1**	**U**
CO -2	use the digital scan and copy systems accordingly	**PSO –1**	**Ap**
CO -3	analyze two dimensional geometric transformations and view it	**PSO – 4**	**An**

CO -4	apply three dimensional concepts for transformation and viewing	**PSO – 4**	**Ap**
CO - 5	apply various visible surface detection methods	**PSO – 4**	**Ap**

Semester VI

Major Core XII: Operating Systems: Design principles

Sub. Code: SC2063

No. of Hours per Week	Credit	Total No. of Hours	Marks
5	**5**	**75**	**100**

Objectives:

1. To introduce basic concepts and functions of operating systems and understand the concept of process, thread and resource management.
2. To understand various Memory, I/O and File management techniques.

Course Outcome

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO -1	Understand the basic concepts of an Operating System and the various system calls	**PSO – 1**	**U**
CO -2	Classify the various processes and threads use for interprocess communication	**PSO – 2**	**AN**
CO -3	Describe the various scheduling & memory management techniques and the page replacement techniques used for memory management	**PSO - 4**	**U**
CO -4	Understand the mutual exclusion deadlock detection and recovery for operating systems	**PSO – 1**	**U**
CO -5	Apply the concepts of input/output and file/directory implementation	**PSO – 4**	**AP**

Semester VI

Elective III: (a) PHP Programming

Course Code: SC2064

No. of Hours / Week	Credit	Total Hours	Marks
5	4	75	100

Objectives:

1. To learn and use open source database management system MySQL
2. To create dynamic web pages and websites.
3. To connect web pages with database.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	analyze PHP scripts and determine their behavior.	**PSO – 2**	**AN**
CO -2	design web pages with the ability to retrieve and present data from a MySQL database.	**PSO –1**	**C**
CO -3	create PHP programs that use various PHP library functions, and that manipulate files and directories.	**PSO – 1**	**C**
CO -4	construct PHP scripts to create dynamic web content.	**PSO –1**	**C**

Semester VI

Major Practical VIII: Android Programming Lab

Sub. Code: SC20P8

No. of Hours per Week	Credit	Total No. of Hours	Marks
4	2	60	100

Objectives:

1. To implement various methods in Android to create mobile applications for communication network.
2. To create a simple application that runs under the Android Operating System.

Learning Outcome

LO	Upon completion of this course the students will be able to:	PSO addressed	CL
LO -1	Create application workings with the Activities and Intents	**PSO – 1**	**AP**
LO -2	Create application workings with the User Interface using Views	**PSO – 4**	**AP**
LO -3	Create application workings with Graphics	**PSO – 1**	**AP**
LO -4	Create application workings with Pictures and Menus	**PSO – 4**	**AP**

Semester VI

Major Practical IX: Computer Graphics Lab

Sub. Code: SC20P9

No. of Hours per Week	Credit	Total No. of Hours	Marks
4	**2**	**60**	**100**

Objectives:

1. To acquaint with the basic principles of 2D and 3D computer.
2. To create simple 2D animations.

Learning Outcome

LO	Upon completion of this course the students will be able to:	PSO addressed	CL
LO-1	Draw lines, circles and different shapes using Graphics	**PSO –1**	**C**
LO-2	Create simple animations applying graphics	**PSO - 4**	**C**
LO-3	design tiled and cascaded display	**PSO - 1**	**C**
LO-4	apply two dimensional transformations	**PSO – 4**	**Ap**

Semester VI

Skill Enhancement Course(SEC): Photoshop CS6

Sub. Code:SSK206

No. of Hours per Week	Credit	Total No. of Hours	Marks
2	**2**	**30**	**100**

Objectives:

1. Toenable students to create images for web design, logos, graphics, layouts, image touch-ups and colour enhancement.
2. To develop the skills for manipulating the images creatively.

Course Outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Understandretouch and repair a scanned photograph.	**PSO –1**	**AP**
CO -2	Create abilities to use Photoshop that are employable and rewarding.	**PSO – 3**	**C**
CO -3	Understand how to do basic photo repairs and color enhancements techniques.	**PSO –1**	**AP**
CO -4	Define and apply the basic functions of pixel selection, painting and editing tools	**PSO - 4**	**R**
CO -5	Understand file compression, Import and export files and save files in different formats	**PSO –1**	**AN**
CO -6	Utilize retouching features to make pictures perfect	**PSO - 1**	**C**

Semester VI

Foundation Course IV- Gender Equity Studies

Course Code: FCV204

No. of Hours per Week	Credit	Total No. of Hours	Marks
1	**1**	**15**	**100**

Objectives

1. To understand the historical background and trace the position of women down the ages.
2. To make the students aware of the legitimate rights and laws that aid women to marchtowards emancipation and empowerment.

Course outcome

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	develop a critical judgment regarding the views of religions,epics and literary imagination about women	**PSO –4**	**U**
CO -2	analyze the socio-cultural and religious practices that subjugatewomen	**PSO – 4**	**AN**
CO -3	probe deep into the root cause of marginalization of women	**PSO –4**	**U**
CO -4	understand the implementation of feministic concepts inpractical life	**PSO - 3**	**U**
CO -5	examine how women are exploited as commercial commoditiesin advertisements and media	**PSO –4**	**AN**