Semester **I**

Name of the Course : Programming Concepts in C

Course Code **: SC2011**

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

Objectives:

1. To familiarize the students with basic concepts of computer programming and developer tools.
2. To develop the skill of programming by learning the basic structure and methods.

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

Modules

Total contact hours: 60 (Incl. lectures, assignments and test)

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Introduction to C programming**					
	1.	History of C & Importance of C	1	To understand how C language comes into	Lecture with PPT	Evaluation through: short test

				existence and the reasons for learning C		Multiple choice questions Formative Assessment
	2.	Basic Structure of C Programs	1	To understand an overview of a C program	Lecture with PPT Illustration	
	3.	Character Set, Tokens, Keywords, Identifiers and Constants	3	To understand the basic program elements of C	Lecture	
	4.	Data Types andVariables, Declaration of variables & Assigning values to variables	3	To understand the various data types in C To be able to declare and assign values to variables in program	Lecture with PPT Illustration	
	5.	Operators	2	To identify the various built-in operators	Lecture with PPT	
	6.	Expressions	2	To be able to evaluate the expressions	Lecture with PPT Illustration	
II	**Decision Making, Branching and Loop Statements**					
	1.	Formatted Input,	5	To understand	Lecture with PPT	Short test

		Formatted Output		the format for giving input in the program To understand the format for displaying the output	Illustration	Quiz Formative Assessment
	2.	Decision Making Using ‘if’ Statement	2	To develop programs using decision making statements	Lecture, Illustration	
	3.	Switch statement, goto Statement	2	To analyze the various programming constructs and implement it to perform specific task	Lecture, Illustration	
	4.	while, do statement, for statement	3	To develop programs using loop structures	Lecture, Illustration	
	5.	Jumps in loops	2	To distinguish the difference between break, continue, exit instructions	Lecture with PPT Illustration	

III	**User-Defined Functions**					
	1.	Definition, Need and Function Calls, Function Declaration	2	To be able to differentiate calling function and called function . To understand the reasons for using functions in a program	Lecture	Short test Assignment on category of functions
	2.	No Arguments and No Return Values Arguments But No Return Values	2	To acquire the skills to identify whether a function has arguments or not, whether it return values or not	Lecture with PPT Illustration Discussion	Formative Assessment
	3.	Arguments with Return Values No Argument But Returns a Value	2	To acquire the skills to identify whether a function has arguments or not, whether it return values or not	Lecture with PPT Illustration Discussion	
	4.	Recursion	1	To develop programs using recursion concept	Lecture with PPT Illustration	

	5.	Passing Arrays to Functions	1	To create programs by passing array values inside a function	Lecture	
IV	**Arrays, structure and Union**					
	1.	One-Dimensional array	2	To declare array variables and able to write programs using array concept	Lecture, Illustration	Short test Formative Assessment
	2.	Two-Dimensional arrays	1	To declare array variables and able to write programs using array concept	Lecture, Illustration	
	3.	Bit-wise Operations	1	To be able to know the bit-wise operations	Lecture	
	4.	Structure	1	To be able to understand structure	Lecture	
	5.	Union	2	To understand the Union that are supported by C library	Lecture with PPT Illustration	

V	**Pointers and Files**					
	1.	Pointer declaration Passing array to functions	2	To be able to define pointer and how to pass the arguments from array to functions	Lecture, Illustration, Discussion	Short test
	2.	Operation in pointers	1	To be able to use the pointers by using its operations	Lecture with PPT Illustration	Formative Assessment
	3.	Array of pointers	1	To analyze how arrays are passed to the pointer	Lecture, Discussion	
	4.	File concept	2	To be able to define, declare, the file concept with its process of creation and closing a file	Lecture, Discussion	

Course Instructor: Sr.Jothi Antony **HOD:** Sr.Jothi Antony

Semester I

Name of the Course : Digital Principles and Applications

Course Code : SA2011

No. of Hours / Week	Credit	Total Hours	Marks
4	3	60	100

Objectives:

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

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

Modules

Total contact hours: 60 (Incl. lectures, assignments and test)

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	Number Systems and Codes					
	1.	Number System	2	To know about Number System	Lecture	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	Base Conversion	2	To understand about Base Conversion	Lecture	
	3.	Binary Codes	2	To explain Binary Codes	Lecture, PPT	
	4.	Code Conversion	1	To understand Code Conversion	Lecture	
	5.	Logic Gates, Truth Tables	2	To know about Logic Gates	Lecture,PPT	
	6.	Universal Gates	1	To explore Universal Gates	Lecture	
II	Boolean Algebra					
	1.	Laws and Theorems	3	To recall Laws and Theorems	Lecture, PPT	Short test Quiz Formative Assessment
	2.	SOP, POS Methods	1	To understand SOP, POS Methods	Lecture	
	3.	Simplification of Boolean Functions	2	To be able to do Boolean Functions	Lecture, Discussion	
	4.	Using Theorems, K-Map,	1	To be able to use K-Map	Lecture,Discussion	

	5.	Prime, Implicant Method	3	To understand Prime, Implicant Method	Lecture,PPT	Multiple Choice Questions
	6.	Binary Addition, Subtraction,Various Representations of Binary Numbers	3	To understand Various Representations of Binary Numbers	Lecture	
III	Combinational Logic					
	1.	Multiplexers,Demultiplexers	2	To understand Multiplexers,Demultiplexers	Lecture, PPT	Short test
	2.	Decoders, Encoders	3	To know about Decoders, Encoders	Lecture, PPT	Formative Assessment
	3.	Code Converters	2	To be able to know Code Converters	Lecture	Multiple Choice Questions
	4.	Parity Generators and Checkers.	2	To be able to understand Parity Generators and Checkers.	Lecture, PPT	Assignment on various layouts
IV	Sequential Logic					
	1.	RS, JK, Flip-Flops	3	To be able to know RS, JK, Flip-Flops	Lecture, PPT	Short test
	2.	D and T Flip Flop	2	To know about D and T Flip Flop	Lecture with PPT Discussion	

	3.	Master-Slave Flip-Flops	1	To discuss about Master-Slave Flip-Flops	Lecture	Formative Assessment
	4.	Registers, Shift Registers	2	To introduce Shift Registers	Lecture	
	5.	Types of Shift Registers.	2	To understand Types of Shift Registers.	Lecture	Quiz
V	Counters					
	1.	Asynchronous and Synchronous Counters	1	To understand Asynchronous and Synchronous Counters	Lecture, Discussion	Short test
	2.	Ripple, Mod, Up-Down Counters,Ring Counters	2	To know about Counters	Lecture	
	3.	Memory, Basic Terms and Ideas,Types of ROMs	1	To be able to understand Memory	Lecture, Discussion	Formative Assessment
	4.	Types of RAMs .	1	To recall RAM	Lecture,Discussion	Multiple Choice Questions

Course Instructor: M.Nithila **HOD:** Sr. Jothi Antony

Semester I

Name of the Course : Internet and Web Designing with HTML

Course Code : SNM201

No. of Hours / Week	Credit	Total Hours	Marks
2	2	30	100

Objectives:

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

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

Modules

Total contact hours: 30 (Incl. lectures, assignments and test)

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Introduction to Internet and E-mail**					
	1.	Internet, World Wide Web, Web Browsers	1	To understand about Internet, WWW and Web Browsers	Lecture with PPT	Evaluation through: short test
	2.	E-mail, Creating an	1	To know	Lecture,	

		E-mail id, Sending and Receiving mails		about e-mail To be able to create emails To be able to Send and Receive Mails	Illustration by examples	Multiple choice questions Formative Assessment
	3.	Attaching a File, Functions of e-mail, Advantages and Disadvantages of e-mail.	1	To be able to Attach a File To be able to recall the functions of e-mail, advantages and disadvantages of e-mail.	Lecture, Illustration by examples	
II	**Introduction to HTML, Head and Body Section, Designing the Body Section**					
	1.	Designing a Home Page, Anchor Tag	1	To be able to design a home page. To be able to create hot text using anchor tag in HTML	Lecture with PPT	Short test Quiz Formative Assessment
	2.	Colorful Web Page	1	To be able to create a colorful web page using bgcolor, background and text attributes.	Lecture with PPT Demonstration	

	3.	Aligning the Headings, Horizontal Rule	1	To be able to display information using heading tags. To be able to align headings, draw line and create paragraph	Lecture with PPT Demonstration	
	4.	Image and Pictures	2	To be able to insert image, align and apply border for it in web page.	Lecture with PPT Demonstration	
III	**Ordered and Unordered lists, Table Handling**					
	1.	List, Unordered lists	1	To be able to apply bullets, and headings for a list of items in a web page.	Lecture with PPT Demonstration	Short test Formative Assessment
	2.	Ordered Lists, Nested Lists	1	To be able to apply numbered bullets in a web page. To be able to create nested list	Lecture with PPT Demonstration	
	3.	Tables, Table Creation in HTML	1	To be able to create tables in web page.	Lecture with PPT Demonstration	

	4.	Cells Spanning Multiple Rows/ Columns, Coloring Cells	1	To be able to apply width for a table, span rows and columns. To be able to apply color for an entire table, entire row and individual cell	Lecture with PPT Demonstration	
IV	**DHTML and Style Sheets, Frames**					
	1.	Defining Styles	1	To be able to define styles in CSS.	Lecture with PPT Demonstration	Short test Assignment Quiz Formative Assessment
	2.	Linking a Style Sheet to an HTML Document, Inline Styles	1	To be able to link style sheet to HTML document. To be able to create inline styles in HTML document using CSS.	Lecture with PPT Demonstration	
	3.	Internal Style Sheets, External Style Sheets	2	To be able to create internal and external style sheets in HTML document using CSS	Lecture with PPT Demonstration	

	4.	Frameset Definition, Frame Definition	2	To be able to define frame and frameset so that the webpage can be divided into multiple sections	Lecture with PPT Demonstration	
V	**Forms**					
	1.	Action Attributes, Method Attributes, Enctype Attribute	1	To be able to recall action, method and enctype attributes.	Lecture with PPT Demonstration	Short test Formative Assessment
	2.	Drop Down List	3	To be able to create HTML forms and add controls in it.	Lecture with PPT Demonstration	

Course Instructor: J. Anto Hepzie Bai **HOD:** Sr. Jothi Antony

Semester III

Name of the Course : Programming in Java

Course Code : SC2131

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

Objectives:

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

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**

Modules

Total contact hours: 60 (Incl. lectures, assignments and test)

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment / Evaluation
I	Genesis of Java					
	1.	Creation of Java , why java is important to internet , An overview of Java Object Oriented Programming	1	To know about Java and OOPs concept	Lecture	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	Data types ,Variables	1	To understand about data types and variables	Lecture	
	3.	Type conversion and casting	1	To explain type conversion	Lecture, PPT	
	4.	Automatic type promotion in Expressions	1	To understand expressions	Lecture	
	5.	Strings,one dimensional arrays	1	To know about strings and 1D array	Lecture, PPT	

	6.	Multidimensional Arrays	1	To explore multidimensional arrays	Lecture	
	7.	Operators and Control statements	1	To create and execute various programs using operators and control variables	Lecture, Demonstration	
II	Class Fundamentals					
	1.	Declaring objects, Assigning object Reference variables	1	To create and start an activity in Reference variables	Lecture, Demonstration	Short test Quiz Formative Assessment Multiple Choice Questions
	2.	IntroducingMethods, Constructors , Garbage collection,Finalize () Method	1	To understand Methods	Lecture	
	3.	Overloading Methods	2	To be able to design program using Overloading	Lecture, Discussion	
	4.	Inheritance Basics & Types	1	To be able to use Inheritance	Lecture, Demonstration Discussion	
	5.	Method overriding	2	To understand the working of Overriding	Lecture, PPT	
	6.	Dynamic Method Dispatch, Using Abstract class	1	To understand Abstract class	Lecture	
	7.	Using final with inheritance.	1	To know about Final with Inheritance	Lecture, Demonstration	

III	Packages & Interface					
	1.	Packages and Interface	1	To understand Packages and Interfaces	Lecture, Demonstration	Short test Formative Assessment Multiple Choice Questions Assignment on various layouts
	2.	Exception Handling	2	To know about Exceptions	Lecture, Demonstration	
	3.	Creating your own Exception subclasses.	2	To be able to create Exception subclasses	Lecture, Demonstration	
	4.	Java Thread Model	1	To be able to understand Thread model	Lecture, PPT	
	5.	Main Thread	2	To be able to understand Main Thread	Lecture, Demonstration	
	6.	Creating a Thread	1	To be able to create a Thread	Lecture	
	7.	Creating Multiple Threads	2	To create Multiple Threads	Lecture, Demonstration	
	8.	Using is Alive () and join ()	1	To know about isAlive() and join() Methods	Lecture, Demonstration	

	9.	Thread Priorities	1	To understand Thread Priorities	Lecture, Demonstration	
IV	I/O & Applets					
	1.	I/O Basics Reading console Input,writing console output ,The Applet class,Applet Architecture	1	To be able to work with I/O and Applet class	Lecture, Demonstration	Short test Formative Assessment Quiz
	2.	Applet Skeleton,Applet Display method, Requesting Repainting	2	To be able to design an Applet	Lecture with PPT Discussion	
	3.	HTML APPLET tag, Passing Parameters to Applet	2	To discuss about passing parameters to Applet	Lecture	
	4.	Audio Clip Interface, Event Handling Mechanisms	2	To introduce various event handling mechanisms	Lecture	
	5.	Delegation Event Model	1	To understand Delegation event model	Lecture	
	6.	Event classes , Sources of Events	1	To be able to use Event classes	Lecture, Discussion	
	7.	Event Listener Interface	1	To create a java program using Event Listener Interface	Lecture, Demonstration	
V	AWT Classes					
	1.	Window fundamentals,working with Frame Windows	2	To create Frame	Lecture, Discussion	Short test
	2.	Working with Graphic	2	To implement various AWT	Lecture	

		Using AWT controls, Control fundamentals		controls		Formative Assessment Multiple Choice Questions
	3.	Labels,using Buttons,Applying check Boxes, Check Box group	2	To be able to use Labels,Buttons,Check box	Lecture, Discussion	
	4.	Choice controls,Using a Text field ,Using a Text Area	2	To design Menu bBars and Menus	Lecture, Discussion	

Course Instructor:M.Nithila **HOD:** J. Anto Hepzie Bai

Semester III

Name of the Course : Data Structures and Algorithms.

Course Code : SC2132

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

Objectives:

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

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	Identify different 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 perform operations with Linear 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 real world problems efficiently.	**PSO –4**	**AP**

Modules

Total contact hours: 60 (Incl. lectures, assignments and test)

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Algorithms, Arrays,Stacks,Queues.**					
	1.	Introduction: Analyzing algorithms, Arrays: Representation ofArrays.	2	Understand algorithms and arrays.	Lecture with PPT	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	Implementation of Stacks and queues.	2	Able to know about Stacks and Queues	Lecture with PPT	
	3.	Application of Stack	1	To explain Stack	Lecture, PPT	
	4.	Evaluationof Expression - Infix to postfix Conversion -	2	Able to distinguish the difference between Infix and Postfix Expression	Lecture, PPT	

	5.	Multiple stacks and Queues.	2	To illustrates the Multiple stacks and Queues.	Lecture, PPT	
	6.	Sparse Matrices.	1	To explain Sparse Matrices.	PPT, Demonstration	
II	**Linked list.**					
	1.	Singly Linked list - Linked stacks and queues	4	To explain the different types of Linked list	Lecture with PPT	Short test Quiz Formative Assessment
	2.	Polynomialaddition.	2	To explain Polynomialaddition.	Lecture, PPT, Demonstration	
	3.	More on linked Lists.	2	To explain linked Lists.	Lecture, Discussion, PPT	
	4.	Doubly linked List and Dynamic StorageManagement	3	To explain StorageManagement	Lecture, Demonstration Discussion	
III	**Trees and Graphs.**					
	1.	Basic Terminology, Binary Trees	4	To explain Tree terminology and binary trees	Lecture, PPT, Demonstration	Short test Formative Assessment
	2.	Binary Tree representations – BinarytreesTraversal	4	To explain about BinarytreesTraversal and representations	Lecture, Demonstration	

	3.	More on Binary Trees	1	Recall about Binary Trees	Lecture, Demonstration	
	4.	Graphs: Terminology and Representations	2	To explain Graph terminology	Lecture, PPT	
	5.	Traversals,connectedcomponents and spanning Trees, Single Source	3	To explain Traversals, Shortest path problem.	Lecture, PPT	
IV	**Symbol Tables and External sorting**					
	1.	Symbol Tables: Static Tree Tables – Dynamic Tree Tables.	2	Able to explain Symbol Tables	Lecture	Short test
	2.	Hash Tables: Hashing Functions – Overflow Handling.	4	Able to explain Hash Tables	Lecture with PPT Discussion	Assignment on data types, variables
	3.	External sorting: Storage Devices - - Magnetic Tapes-Disk DrivesSorting with Disks: K-way merging	3	Recall about Storage Devices and merge sorting	Lecture with PPT	Formative Assessment
V	**Internal sorting,Files,Index Techniques.**					
	1.	Internal sorting: Insertion sort ,Quick sort ,2 way Merge sort ,Heap sort	3	Understand the basic concepts of Internal sorting	Lecture, Discussion	Short test

	2.	Files, Queries and sequential organizations ,Index Techniques: Cylinder Surface Indexing, Hashed Indexes	5	Understand files and index.	Lecture with PPT	Formative Assessment
	3.	File organization: Sequential organizations, Random organizations, Linked organizations.	4	Able to explain File organization	Lecture, PPT, Discussion	

Course Instructor:V. R. Bithiah Blessie **HOD:**Mrs.J.Anto Hepzie Bai

Semester III

Name of the Course : Numerical and Statistical Methods

Course Code : SA2131

No. of Hours / Week	Credit	Total Hours	Marks
3	**3**	**45**	**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.

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 method	**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 a polynomial using interpolation methods	**PSO – 2**	**R**
CO-5	Finding Arithmetic Mean , Median and Mode for the frequency distribution	**PSO – 3**	**R**
CO -6	Determine correlation and rank correlation coefficient between two variables	**PSO – 2**	**E**
CO -7	Find a regression equation using the given data	**PSO – 4**	**AP**

Modules

Total contact hours: 45 (Including lectures, assignments and tests)

Unit	Section	Topics	Lecture Hours	Learning utcome	Pedagogy	Assessment / Evaluation
I	**Algebraic and Transcendental Equations**					
	1	Introduction to algebraic and transcendental equations	1			Short test on iteration method
	2	Errors in Numerical Computation	1	Find an error analysis for a given numerical method	Lecture with illustration	
	3	Iteration Method- Theorem and Problems 1-3	2	Solve algebraic and Transcendental Equations using iteration method	Lecture with illustration	
	4	Iteration Method- Problem 4-7	1	Solve algebraic	Lecture with	

				and Transcendental Equations using iteration method	illustration	Short test on Bisection Method
	5	Bisection Method- Problem 1-3	1	Solve algebraic and Transcendental Equations using Bisection method	Lecture with illustration	
	6	Bisection Method- Problem 4-7	1	Solve algebraic and Transcendental Equations using Bisection method	Lecture with illustration	
II	**Simultaneous Equations**					
	1	Introduction and Simultaneous Equations	1	Solve a simultaneous equation	Lecture with illustration	Formative assessment test1
	2	Back Substitution Method- Theorem,	2	Solve a simultaneous equationusing Back Substitution Method	Lecture with illustration	
	3	Gauss Elimination Method- Problems 1-5	1	Solve a simultaneous equationusing Gauss Elimination Method	Lecture with illustration	Short test on Gauss Jordan Elimination Method
	4	Gauss Jordan Elimination Method-	2	Solve a	Lecture	

		Problem 1-3		simultaneous equation using Gauss Jordan Elimination Method	with illustration	
	5	Gauss Jordan Elimination Method- Problem 4, 5	1	Solve a simultaneous equation using Gauss Jordan Elimination Method	Lecture with illustration	
III	**Interpolation**					
	1	Introduction Newton's forward Interpolation formulae- Theorem	1	Deriving Newton's forward Interpolation formula	Lecture with illustration	Short test on Newton's forward & backward interpolation
	2	Newton's forward Interpolation formulae- Problem 1-4	2	Find a polynomial using Newton's forward Interpolation formula	Lecture with illustration	
	3	Newton's backward Interpolation formulae- Theorem and Problem 1-3	2	Find a polynomial using Newton's backward Interpolation formula	Lecture with illustration	

	4	Lagrange's Interpolation formulae- Theorem and Problem 1-5	2	Find a polynomial using Lagrange's Interpolation formula	Lecture with illustration	Short test on Lagrange's Interpolation formulae
IV	**Measures of Central tendency**					
	1	Measures of Central tendency Arithmetic Mean	3	Calculating Arithmetic Mean for the frequency distribution	Lecture with illustration	Short test on Mean and Median
	2	Median	2	Finding Arithmetic Median for the frequency distribution	Lecture with illustration	
	3	Mode	2	Finding Mode for the frequency distribution	Lecture with illustration	Short test on Mode
V	**Correlation and Regression**					
|	1	Introduction and Correlation – Theorem	1			Short test on correlation
	2	Correlation – Problems1-7	1	Determine correlation coefficient between two variables	Lecture with illustration	
	3	Rank Correlation- Theorem and Problems 1-5	2	Determine rank correlation coefficient between two variables	Lecture with illustration	

	4	Regression- Theorem 1-4	1	Find a regression equation using the given data	Lecture with illustration	Formative assessment test2
	5.	Regression- Theorem 5-7	1	Find a regression equations using the given data	Lecture with illustration	
	6	Regression- Problem 1-7	1	Find a regression equations using the given data	Lecture with illustration	

Course Instructor: Dr.G.J.JovitVinish Melma **HOD:** J. Anto Hepzie Bai

Teaching Plan (2019-2020)

Semester -V

Name of the Course: Web Technology

Subject Code: SC1751

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

Objectives:

1. To enable the students to understand the basic concepts and architecture involved in web technology, scripting languages and mark-up languages.
2. To implement the professional ethics to design web pages.

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 – 4**	**C**
CO -2	differentiate web applications using client-side (JavaScript, HTML, XML) and server-side technologies (ASP.NET, ADO.NET).	**PSO –7**	**AP**
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 –11**	**AP**

Unit	Module	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Introduction to Web Technologies and HTML**					
	1.	History of the Web, Understanding Web System Architecture, Understanding 3-tier Web Architecture	2	To recall the history of web, 3-tier web architecture	Lecture with PPT	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	Web Browsers, Introducing HTML Document Structure, Creating Heading on a Webpage	3	To recall the different types of browsers, structure of HTML document. To be able to create heading on a web page	Lecture with PPT	
	3.	Working with Links, Creating a Paragraph, Working with Images	3	To be able to create link, paragraph and images in web page	Illustration by examples	
	4.	Working with Tables	2	To be able to create tables in web page.	Lecture, Illustration by examples	
	5.	Working with Frames	2	To be able to create frames in web page.	Lecture, Illustration by examples	
	6.	Introducing to Forms and HTML Controls	3	To be able to create HTML forms and add controls in it.	Lecture, Demonstration, Illustration by examples	
	7	Introducing Cascading Style Sheets	2	To be able to create cascading styles in a web page in	Lecture, Illustration b y examples	

				4 ways.		
II	**Introduction to JavaScript**					
	1.	Introducing JavaScript, Handling Events	3	To be able to create application using JavaScript. To define the benefits of JavaScript. To handle events in JavaScript.	Lecture with PPT	Short test Quiz Formative Assessment
	2.	Using Variables in JavaScript, Using Array in JavaScript, Creating Objects in JavaScript	4	To be able to create objects in JavaScript. To use variables and array in JavaScript.	Lecture with PPT	
	3.	Using Operators	3	To recall the different types of operators in JavaScript.	Lecture, Group Discussion	
	4.	Working with Control Flow Statements, Working with Functions	4	To be able to create own function in the Script. To Analyze different types of control flow statements.	Lecture, Illustration by examples, Discussion	
III	**Introducing PHP, Working with Variables, Controlling Program Flow and Working with Functions, Arrays, Files, Directories**					
	1.	Version of PHP, Features of PHP, Creating a PHP Script, Running a	3	To define the versions, features in PHP. To be able to create,	Lecture, PPT,	Short test Formative Assessment

		PHP Script, Handling Errors in a PHP Script and Escape Characters		run and handle errors in PHP Script.		
	2.	Using Variables, Using Constants, Exploring data types in PHP and Exploring Operators in PHP	3	To use variables, constants, data types & operators in PHP.	Lecture, Group Discussion	
	3.	Conditional Statements, Looping Statements	4	To Analyze different types of control flow statements.	Lecture, PPT, Group Discussion	
	4.	User-defined Functions in PHP, Built in Functions in PHP, Introducing Arrays, Types of Arrays	3	To be able to create functions in PHP. To be able to create an array in PHP. To analyze the different types of arrays in PHP.	Lecture, PPT, Illustration by examples	
	5.	Working with Files, Working with Directories	3	To recall the functions that can be used to perform on a file and directories.	Lecture, PPT, Illustration by examples	
IV	**Working with Forms and Database and Exploring Cookies, Session and PHP Security**					
	1.	Introduction to Web Forms, Working with <form>tag and Form	2	To be able to create forms in Web and define the	Lecture with PPT	Short test

		Elements, Processing a Web Form		attributes of <form> tag.		Assignment Quiz
	2.	Validating a Form, Introducing Databases, Using PHP and MySql	3	To be able to validate a form. To establish connection with the Mysql database server in PHP.	Lecture with PPT, Illustration by examples	Formative Assessment
	3.	Working with Cookies, Working with Session	3	To define cookies and its attributes. To be able to define session.	Lecture with PPT	
	4.	Protecting Data, Configuring PHP Security	3	To define how to protect data from unauthorized users. To recall the various PHP configuration directives to configure PHP security.	Lecture with PPT	
V	**Introducing to XML**					
	1.	Definition of XML, XML Versus HTML, Electronic Data Interchange (EDI)	4	To define XML, difference between XML and HTML, EDI	Lecture with PPT, Discussion	Short test
	2.	XML Terminology	2	To recall the related terms about XML.	Lecture with PPT	Formative Assessment
	3.	Introduction to DTD,	4	To define	Lecture	

		Document Type Declaration, Elements Type Declaration		DTD, different types of DTD.	with PPT, Group Discussion	
	4.	Attribute Declaration and Limitation of DTD, Introduction to Schema	3	To be able to declare attributes in XML. To be able to define limitations of DTD, Schema.	Lecture, Discussion	
	5.	Complex Types, Extensible Style Sheet Language Transformations	4	To define extensible style sheet language transformations.		

Course Instructor: J. Anto Hepzie Bai **HOD:** Sr. Jothi Antony

Name of the Course: Operating Systems

Subject Code: SC1752

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

Objectives:

1. To focus on the different operating systems and the back processing involved in it.
2. To inculcate the knowledge of working process of various operating systems.

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	analyze the structure of OS and basic architectural components involved in OS design	**PSO – 12**	**AN**
CO -2	analyze the applications to run in parallel either using process or thread models of different OS	**PSO – 6**	**AN**
CO -3	describe the various device and resource management techniques for timesharing and distributed systems	**PSO - 9**	**U**

CO -4	understand the mutual exclusion ,deadlock detection of distributed operating system	**PSO – 7**	**U**
CO -5	apply the mechanisms adopted for file sharing in distributed applications	**PSO – 4**	**AP**

Unit	Module	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Computer System Overview**					
	1.	Basic Elements	2	To be able to operate identify the basic elements	Lecture, Discussion	Multiple choice questions, Quiz, Assignments through MOODLE Evaluation through: short test Formative Assessment
	2.	Processor Registers , Instruction Execution, Interrupts	4	To understand the Registers	Lecture , PPT	
	3.	The Memory Hierarchy , Cache Memory	4	To know the memory hierarchy and cache memory	Lecture, Discussion	
	4.	I/O Communication Techniques.	2	To understand the basic concept of all the I/O techniques	Lecture, PPT Discussion	
	6.	Operating System Objectives and Functions	4	To analyze all the OS functions	Lecture with PPT Illustration,	
	7.	The Evolution of Operating Systems	3	To develop and evaluate the various types of operating system	Lecture, Discussion	
II	**Process Description and Control, Threads, SMP, and Micro kernels**					
	1.	Process	2	To analyze various form factors of operating system	Lecture, Discussion	Quiz Short test
	2.	Process States	2	To be able to know the	Lecture, PPT	Formative

				states of operating system process	Discussion	Assessment
	3.	Process Description	2	To elaborate the OS processor	Lecture with PPT Illustration	
	4.	Process Control	2	To learn about input output process control	Lecture , PPT	
	5.	Processes and Threads .	2	To be able to identify the threads in process	Lecture	
	6.	Principles of Concurrency, Semaphores	3	To find out the principles of OS	Lecture, Discussion	
	7.	Principles of Deadlock	2	To be able to debug the errors in Operating System	Lecture, Discussion	
	8.	Deadlock Prevention, Deadlock Avoidance, Deadlock Detection.	3	To learn how to prevent and detect the problem in OS		
III	**Memory Management, Virtual Memory**					
	1.	Memory Management Requirements	2	To be able to manage all the requirements in the memory	Lecture with PPT Illustration	Short test Formative Assessment Multiple choice questions, Quiz, Assignments through MOODLE
	2.	Memory Partitioning	2	To be able to identify the different types of memory	Lecture, Illustration	
	3.	Paging	2	To elaborate the paging method	Lecture, Illustration	

	4.	Segmentation	2	To separate all the operating system process	Lecture with PPT Illustration	
	5.	Operating System Software	2	To define the Operating System Software	Lecture with Illustration	
IV	**Uniprocessor, Scheduling, Multiprocessor and Real Time Scheduling**					
	1.	Types of Scheduling	2	To understand the types of scheduling	Lecture with Illustration	Short test Formative Assessment
	2.	Multiprocessor Scheduling	2	To be able to identify the scheduling in the multiprocessor	Lecture with PPT Illustration	
	4.	Real Time Scheduling	2	To understand the format for memory and scheduling	Lecture with PPT Illustration	
	5.	I/O Devices, Organization of the I/O Function	2	To distinguish the difference between I/O devices and I/O function	Lecture with PPT Illustration	
	6.	Operating System Design Issues, I/O Buffering, Disk Scheduling.	4	To be able to identify all issues	Lecture	
V	**File Management, Computer Security Threats**					
	1.	Overview , File	3	To	Lecture	Short test

		Organization and Access		understand file organization and access all the file	with PPT Illustration	Formative Assessment
	2.	File Directories , File Sharing , Record Blocking	3	To know the sharing process of all files	Lecture with Illustration	Quiz Short test
	3.	Secondary Storage Management	2	To get access from secondary storage memory	Lecture with PPT Illustration	
	4.	Computer Security Concepts	2	To secure all files with the help of computer security	Lecture with PPT Illustration	
	5.	Threats, Attacks, and Assets	3	To be able to know how to prevent our system from all types of attacks and threats	Lecture with PPT Illustration Videos	
	6.	Intruders , Viruses, Worms, and Bots	3	To be able to know how to prevent the system from virus	Lecture with PPT Illustration Videos	

Course Instructor: V. Abisha **HOD:** Sr. Jothi Antony

Name of the Course : Data Communication and Computer Networks

Subject Code : SC1753

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

Objectives:

1. To focus the students on the various technologies and terminologies used in transmitting data through computer networks.
2. To build the skill of networking technology for effective communication.

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 – 12**	**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 –9**	**AP**

Unit	Module	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ evaluation
I	**Introduction: Data Communications**					
	1.	Data Communications and Networks	2	To understand basic elements of data communication and networks	Lecture, Discussion	Multiple choice questions, Quiz Evaluation through: short test
	2.	Protocols and Standards	3	To understand the Protocols and Standards	Lecture , PPT	
	3.	Network Models**:** Layers in the OSI Model	2	To know about the basic	Lecture,	

				Network Models	Discussion	
	4.	TCP/IP Protocol Suite.	2	To know about TCP/IP Protocol Suite.	Lecture, PPT Discussion	Formative Assessment
	6.	Addressing	4	To understand addressing	Lecture with PPT Illustration,	
II	**Multiplexing, Transmission Media Switching:**					
	1.	Frequency-Division Multiplexing	2	To analyze Frequency-Division Multiplexing	Lecture, Discussion	Quiz Short test Formative Assessment, Assignments through MOODLE
	2.	Statistical Time-Division Multiplexing	2	To be understand Statistical Time-Division Multiplexing	Lecture, PPT Discussion	
	3.	Guided Media	2	To understand the Guided Media	Lecture with PPT Illustration	
	4.	Unguided Media: Wireless	2	To learn about Unguided Media	Lecture	
	5.	Circuit-Switched Networks – Datagram Networks .	4	To understand about the switches and their different types	Lecture	
	6.	Datagram Networks	3	To understand Datagram Networks	Lecture, Discussion	
	7.	Structure of a Switch.	2	To be able to understand the Structure of a Switch.	Lecture, Discussion	
III	**Using Telephone and Cable Networks for Data Transmission**					
	1.	Dial-up Modems	2	To understand	Lecture with PPT	Short test

				the dial-up modems	Illustration	Formative Assessment Multiple choice questions, Quiz, Assignments through MOODLE
	2.	Cable TV Networks , Cable TV for Data Transfer	2	To be able to analyze about the Cable TV for Data Transfer	Lecture, Illustration	
	3.	Error Detection and correction: Introduction , Block Coding	2	To elaborate the Error Detection and correction method	Lecture, Illustration	
	4.	Data Link Control: Protocols, HDLC , Point-to-Point Protocol	4	To understand the Data Link Control Protocols,	Lecture with PPT Illustration	
	5.	Multiple Access: Channelization	2	To define the channelization	Lecture with Illustration	
IV	**Wired LANs**					
	1.	Ethernet: Fast Ethernet - Gigabit Ethernet	2	To understand the types of Ethernet	Lecture with Illustration	Short test Formative Assessment
	2.	Wireless LANs: Bluetooth.	2	To understand about Bluetooth	Lecture with PPT Illustration	
	4.	Connecting LANs, Backbone Networks, and Virtual LANs: Connecting Devices.	5	Connecting LANs, Backbone Networks, and Virtual LANs: Connecting Devices.	Lecture with PPT Illustration	
	5.	Wireless WANs: Cellular Telephone and Satellite Networks: Cellular Telephony - Satellite Network.	4	To learn about the Cellular Telephone and Satellite Networks	Lecture with PPT Illustration	
	6.	Network Layer: Logical	3	To understand		

		Addressing: IPv4 Addresses ,IPv6 Addresses		the Network Layer and Logical Addressing		
	7.	Network Layer: Address Mapping, Error Reporting, and Multicasting: Address Mapping.	3	To be able to identify Network Layer: Address Mapping, Error Reporting, and Multicasting: Address Mapping.	Lecture	
V	**Process-to Process Delivery, Domain Name System, Cryptography:**					
	1.	UDP, TCP, and SCTP**:** User Datagram Protocol (UDP) , TCP	2	To understand the UDP and TCP	Lecture with PPT Illustration	Short test Formative Assessment
	2.	Name Space ,Domain Name Space , DNS in the Internet.	2	To know about the DNS	Lecture with Illustration	Quiz
	3.	Remote Logging, Electronic Mail, and File Transfer: Remote Logging - Electronic Mail	2	To know about remote logging	Lecture with PPT Illustration	Short test
	4.	File Transfer Protocol (FTP	2	To know about FTP	Lecture with PPT Illustration	
	5.	**S**ymmetric-Key Cryptography , Asymmetric Key Cryptography: RSA	3	To know about cryptography types	Lecture with PPT Illustration	
	6.	**Network Security:** Digital Signature	3	To be able to know how to secure our network	Lecture with PPT Illustration	

Course Instructor: P. Jasmine Lizy **HOD:** Sr. Jothi Antony

Name of the Course : Photoshop (SBC)

Subject Code : SSK175

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

Objectives:

1. To enable 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.

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

Unit	Module	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment / Evaluation
I	**Starting Photoshop CS2**					
	1.	Getting Started with Photoshop CS2, Opening an Existing File and The Photoshop Program Window	1	To understand the concept of Photoshop	Lecture	Short test
	2.	Guidelines for Working with Toolbox and Screen Modes	2	To be aware of the guidelines	Lecture with PPT	
	3.	Creating a New File , Saving Files , Removing Files and Closing File	1	To understand the necessary features	Illustration with PPT	Formative Assessment Quiz
II	**Working with Images**					
	1.	Vector and Bitmap Images, Opening Recently used Files , Image Size , Image Resolution and Editing Images	1	To analyze the various features of images	Lecture	Multiple choice questions
	2.	Opening Files Created in Illustrator or Freehand and Color Modes	2	To learn more color modes	Lecture with PPT	Evaluation through: short test
	3.	Setting a Current Foreground and Background Colors and File Formats	2	To recall the various formats	Illustration with PPT	Formative Assessment
III	**Making Selections**					
	1.	Making Selection, The Grow and Similar Commands and Moving a Portion of an Image	1	To learn different resizing of the image	Lecture	Multiple choice questions
	2.	Editing Selections and Copying a Selection into another Image	1	To understand the features of selection	Lecture with PPT	
	3.	Filling a Selection.	1	To get the knowledge of filling	Illustration with PPT	Evaluation through: short test
	4.	Transforming Selections	2	To be able to operate the transformations	PPT	Formative Assessment

IV	**Painting, Drawing and Retouching Tools and Layers**					
	1.	The painting Tools	2	To know the painting tools	Lecture	Multiple choice questions Evaluation through: short test Formative Assessment
	2.	The Drawing Tools	3	To work with the drawing tools	Lecture with PPT	
	3.	The Retouching Tools	2	To get to know the retouching tools	Illustration with PPT	
	4.	Layers Palette and Working with Layers	2	To be aware of the layers and palette	Illustration	
V	**Filters**					
	1.	The Filter Menu and Filter Gallery	1	To get to know the menu and gallery	Lecture	Multiple choice questions Evaluation through: short test Formative Assessment
	2.	Extract Filter and Liquefy Filter	2	To recognize different filters	Lecture with PPT	
	3.	Vanishing Point Filter and Artistic Filters	2	To know more about filters	Illustration with PPT	
	4.	Blur Filters and Brush Stroke Filters	2	To distinguish the difference filters	Illustration	

Course Instructor: Sr. Jothi Antony **HOD:** Sr. Jothi Antony