Semester : II

Name of the Course : Object Oriented Programming Using C++

Course Code : SC2021

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

Objectives:

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

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**

Modules

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

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Principles of OOP and Control Structures**					
	1.	Procedure and Object Oriented programming Paradigm	1	To distinguish the difference between procedure and object oriented programming	Lecture, Discussion	Evaluation through: short test
	2.	Basic Concepts and Benefits of OOP	2	To understand the OOPs concept and its uses	Lecture with PPT	
	3.	Definition of C++, Simple C++ Program, Structure of C++	1	To understand an overview	Lecture,	

		program		of a C program	Discussion	
	4.	Tokens, Keywords, Identifiers and Constants & Basic Data Types, Operators in C++, Scope Resolution Operator	2	To understand the basic program elements	Lecture, Discussion	Multiple choice questions
	6.	Manipulators, Memory management operators	2	To recall the format used to display data	Lecture, Discussion	
	7.	Control Structures	1	To analyze the various programming constructs and implement it to perform specific task	Lecture with PPT Illustration, Discussion	Formative Assessment
II	**Functions in C++, Classes & Objects, Constructors and Destructors, Operator Overloading**					
	1.	Main Function & Function Prototyping	1	To be able to define function and write programs using function prototyping	Lecture, Discussion	Short test
	2.	Call by Reference, Return by Reference, Inline functions, Default Arguments	3	To develop programs by passing address as arguments,	Lecture with PPT Illustration	

				passing default values as arguments To recall that developing programs using inline function will save memory space and time		Multiple choice questions
	3.	Function Overloading, Friend Functions, Virtual Functions	3	To write programs with same function names to perform many tasks To develop programs to handle some specific tasks related to class objects	Lecture with PPT Illustration	Formative Assessment t
	4.	Specifying a Class	1	To be able to create programs using class	Lecture with PPT Illustration	
	5.	Defining Member Function & Private Member Functions, Static Data Members	2	To recall the member functions and data members	Lecture	

	6.	Arrays of Objects	1	To develop programs using arrays of objects	Lecture, Discussion	
	7	Constructors, Multiple Constructors in a Class	1	To distinguish the difference between constructors and multiple constructors	Lecture with PPT Illustration	Multiple choice questions Quiz Evaluation through: short test
	8	Destructors, Overloading Unary Operators	1	To be able to destroy constructor. To develop programs using unary operators	Lecture, Illustration	
	9	Overloading Binary Operators	1	To develop programs using binary operators	Lecture, Illustration	
III	**Inheritance, Pointers and I/O Operations**					
		Single Inheritance, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Hybrid Inheritance	3	To analyze the different types of inheritance and the difference between them	Lecture with PPT Illustration	Short test Formative Assessment

		Abstract Classes , Member Classes: Nesting of Classes	1	To define abstract and member classes	Lecture with Illustration	
		Pointers to Objects, This Pointer	2	To define pointer and can create programs using pointers	Lecture with Illustration	
		C++ Streams, C++ Stream Classes	1	To define stream and stream classes	Lecture with PPT Illustration	
IV	**Pointers, Managing Console I/O Operations & Working with Files**					
	1.	Classes for File Stream Operations, Opening and Closing a File, Detecting end-of-file, File Modes	3	To understand file, able to open and close a file, able to use end of file condition in a program	Lecture with PPT Illustration	Evaluation through: short test
	2.	Formatted Console I/O Operations, Managing output with Manipulators	3	To understand the format for displaying the output	Lecture with PPT Illustration	
	4.	Classes for File Stream Operations, Opening and Closing a File, Detecting end-of-file, File Modes	3	To understand file, able to open and close a file, able to use	Lecture with PPT Illustration	

				end of file condition in a program		Multiple choice questions
	5.	File Pointers and their Manipulators, Sequential Input and Output Operations	3	To understand the functions designed for handling a single character To be able to write and read blocks of data	Lecture with Illustration	Formative Assessment
V	**Exception HandlingTemplate Manipulating strings**					
	1	Exception handling	1	Methods to handle errors	Lecture and Demonstration	Evaluation through: short test
	3.	Updating a File, Error handling during File Operations	2	To be able to display, modify, add or delete contents of a file	Lecture with PPT Illustration	
	4.	Command-line Arguments	1	To develop programs by supplying the arguments to the main function	Lecture with PPT Illustration	
	5.	Class Templates, Class Templates with Multiple Parameters, Function Templates,	3	To understand class and functions	Lecture with PPT Illustration	

		Function Templates with Multiple Parameters		template To differentiate the difference between them	Videos	Multiple choice questions
		Manipulating strings	2	To handle the strings in the programmes	Demonstration	Formative Assessment

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

Semester : II

Name of the Course :Computer Organization and Architecture

Course Code : SA2021

No. of Hours / Week	Credit	Total 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.

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	understand the theory and architect 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 and representation and operations with their representation	PSO-4	AP
CO - 5	exemplify in a better way the I/O and memory organization	PSO-2	U

Modules

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

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment / Evaluation
I	**Basic of Computer**					
	1.	Basic of Computer, Von Neumann Architecture	2	To understand basics of computer.	Lecture	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	Generation of Computer, Classification of Computers, Instruction Execution.**Register Transfer and Micro operations:** Register Transfer	4	To understandabout generation and registers of computer	Lecture	
	3.	Bus and Memory Transfers, Three-State Bus Buffers, Memory Transfer	3	To understand different types of transfers	Lecture	
	4.	Micro-Operations, Arithmetic Micro-Operations	3	To know about operations	Lecture with PPT Illustration	
	5.	Logic Micro-Operations,	2	To understand about operations	Lecture with PPT	
	6.	Shift Micro-Operations	2	To be able to know about shift operations	Lecture with PPT Illustration	
II	**Stack Organization:**					
	1.	Register Stack, Memory Stack, Reverse Polish Notation	5	To understand about stack	Lecture with PPT Illustration	Short test Quiz
	2.	**Instruction Formats**:	2	To	Lecture,	

		Three- Address Instructions, Two – Address Instructions,		understand about instructions	Illustration	Formative Assessment
	3.	One - Address Instructions, Zero - Address Instructions,	2	To understand about instructions	Lecture, Illustration	
	4.	RISC Instructions, Addressing Modes.	3	To describe addressing modes	Lecture	
	5.	RISC & CISC and their characteristics.	4	To describe RISC &CISC	Lecture with PPT Illustration	
III	**Arithmetic Operations**					
	1.	Addition And Subtraction With Signed-Magnitude,	3	To know about addition and subtraction	Lecture	Short test Formative Assessment
	2.	Multiplication Algorithm, Booth Multiplication Algorithm,	2	To understand about booth multiplicatio n	Lecture, demonstrat ion	
	3.	Array Multiplier, Division Algorithm	3	To understand about division algorithm	Lecture	
	4.	Hardware Algorithm, Divide Overflow,	3	To understand about divide overflow	Lecture	
	5.	Floating-Point Arithmetic Operations.	2	To understand floating point operations	Lecture with PPT Illustration	
IV	**Memory Organization**					
	1.	Modes Of Transfer, **DMA**-DMA Controller, DMA Transfer,	2	To understand about DMA	Lecture	Short test

	2.	**Input-Output Processor(IOP),** CPU-IOP Communication.	2	To acquire the skillsdefine IOP	Lecture with PPT Illustration Discussion	Assignment on category of functions Formative Assessment
	3.	**Memory Organization:** Memory Hierarchy, Main Memory.	2	To understand about memory	Lecture	
	4.	RAM and ROM Chips,	2	To understand about RAM and ROM	Lecture	
	5.	Memory Address Map, Memory Connection to CPU, Auxiliary Memory, Cache Memory.	4	To understand about memory	Lecture	
V	**Multiprocessors**					
	1.	Control memory – Address sequencing – Design of Control unit	2	To be able to define Structure System analysis	Lecture	Short test Formative Assessment
	2.	Pipelining - Arithmetic Pipeline, Instruction Pipeline	4	To understand HIPO - SSADM	Lecture with PPT Illustration	
	3.	**Multiprocessors:** Characteristics of Multiprocessors,	3	To analyze how to manage project	Lecture, Discussion	
	4.	**Interconnection Structure:** Time-Shared Common Bus, Multi-Port Memory, Crossbar Switch, Multistage Switching Network, Hypercube Interconnection.	6	To be able to review the project	Lecture, Discussion	

Course Instructor: V R BithiahBlessie **HOD:** Sr. Jothi Antony

Semester : II

Name of the Course : Desktop Publishing Using Scribus

Course Code : SNM202

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

Objectives:

1. To provide information about open source philosophy surrounding scribus and understand what scribus can help you do.
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 desktop publishing.

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 stylized documents	PSO – 2	U
CO -4	apply major design and marketing concepts to real world projects	PSO - 4	AP

Modules

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

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Scribus Basics**					

	1.	Welcome to Scribus, Download and Installation: GhostScript, Scribus 1.4.5, Installation of Scribus on Windows.	1	To be able to install software needed to work with Scribus.	Lecture with PPT Demonstration	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	Before you open Scribus - An introductory tour of the Scribus Workspace	2	To understand the environment of Scribus	Lecture with PPT Demonstration	
	3.	Introduction to Frames: Insert Sample Text, Working with Image Frames, Creating Inline Characters, Saving a Document, Zoom in on your Documents.	1	To be able to create text frames, image frames and save a document in Scribus.	Lecture with PPT Demonstration	
	4.	Navigating your Documents: The Page List, Page Arrows, Document Outline, Switchingbetween Documents, Adding and Deleting Pages, Arranging Pages.	1	To be able to move from one document to another document, add, delete and arrange pages in Scribus	Lecture with PPT Demonstration	
II	**Getting to know the Workspace**					
	1.	The Scribus Workspace: The Menu Bar, The File Menu: Preferences,	2	To be able to change the default settings	Lecture with PPT	Short test

		Preferences: The General Tab, The Document Tab, The Fonts Tab, The Guides Tab, Grab Radius, The Typography Tab, The Tools Tab, The Scrapbook.		in Scribus		Quiz Formative Assessment Assignment on Edit, Page, Item menu and menu bar
	2.	The Edit Menu, The Page Menu, The Insert Menu, The Item Menu	1	To be able to modify, insert frames and shapes, add pages, Items to lock and duplicate in Scribus.	Lecture, Demonstration, Illustration	
	3.	The Toolbar, The Properties Palette	2	To be able to work with objects through property palettes in Scribus.	Lecture with PPT	
III	**Text Frames and Font Management**					
	1.	Using Frames, Editing Your Text Frames, The Story Editor	2	To be able to create frames in Scribus and edit text using Story Editor	Lecture with PPT Demonstration	Short test Formative Assessment Assignment
	2.	The Text Tab, Text Wrapping: Flowing Text Around a Quote, Text Alignment	2	To be able to create flowing text around an object and change text alignment	Lecture with PPT Illustration Demonstration	

	3.	Kerning and Tracking, Manipulating the Baseline Grid, Adding a Text Frame Background	2	To be able to adjust the space of text, position your text and add a background color to a text frame.	Lecture with PPT Demonstration	Quiz
	4.	Creating Text over a Semi-Transparent Background	1	To be able to place text on a semi-transparent background	Lecture with PPT, Illustration	
	5.	Creating Text on a Path	1	To be able to place text over a line or shape	Lecture with PPT	
	6.	Paragraph Alignment and Formatting, Fonts in Scribus	1	To be able to align, format the text and apply various fonts to text in Scribus	Lecture with PPT Demonstration	
IV	**Working with Graphics, Working with Colors**					
	1.	Working with Graphics: Working with Graphics Files	1	To be able to create image files and load images in Scribus	Lecture with PPT Demonstration	Short test
	2.	Collecting for Output, Missing Files	1	To be able to transfer files to another computer and locate missing files	Lecture with PPT Discussion	
	3.	Working with Image Effects,	1	To be able to apply various	Lecture	Formative Assessment

		Image Formats		effects to images and to understand various image formats	with PPT Discussion	
	4.	Working with Colors: Choosing Colors: The Color Wheel, Applying Colors	2	To be able to select right colors for your documents and apply various color schemes	Lecture with PPT Demonstration	
	5.	Gradients	1	To be able to create a smooth color transition and blend one or more colors	Lecture with PPT	
V	**Exporting and Printing your Documents, Automating Scribus**					
	1.	Copy Editing and Proofreading, Print	1	To be able to check your documents for accuracy, style, punctuation and grammar and to be able to see what your layout will look like before it is printed	Lecture with PPT, Illustration, Discussion	Short test Formative Assessment
	2.	Exporting to EPS or SVG	1	To be able to export files in different formats	Lecture with PPT Illustration	
	3.	Printing from within Scribus	1	To be able to print a	Lecture,	

				document from within Scribus	PPT, Discussion	
	4.	A word on layers	1	To be able to understand the concept of layers in Scribus	Lecture, Discussion	
	5.	Automating Scribus: Styles, Master Pages	1	To be able to apply various styles to a document and be able to reproduce and edit pages in a document	Lecture with PPT, Illustration	

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

Semester: IV

Name of the Course: Web Programming Subject Code: SC1741 Teaching Plan

Unit	Module	Topics	Lecture	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**ASP.Net 3.5 Essentials and Web Forms: Standard Control**					
	1.	New Features in ASP.Net 3.5	1	To understand the features in	Lecture with PPT	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	The ASP.Net Life Cycle and Overview of Visual Studio 2008	2	To understand the life cycle of Asp.Net and overview of visual studio 2008	Lecture with PPT	
	3.	Exploring a sample ASP.Net and Creating a sample ASP.Net Website.	1	To be able to create a website in Asp.Net	Illustration	
	4.	The Label Control , The Button Control and	2	To be able to create a website using label, textbox and button controls.	Lecture, Demonstration, Illustration	
	5.	The Hidden Field Control and File Upload Control	1	To be able to create a website using File upload and hidden field control.	Lecture, Demonstration, Illustration	
	6.	The Image Control and The Image Map Control	1	To be able to display an image using image control. To be able to create hotspot using imagemap control.	Lecture, Demonstration, Illustration	

	7	The ListBox Control and The Drop-Down List Control	1	To be able to display a website with listbox and drop-down list control	Lecture, Demonstration, Illustration	
	8	The Checkbox Control and The Radio Button	1	To be able to display a website with checkbox and radio button control.	Lecture, Demonstration, Illustration	
	9	User Controls and Custom Controls	1	To understand about user and custom control.	Lecture, Demonstration, Illustration	
	10	Working with User Control and Working with Custom Controls	2	To be able to display a website with user and custom controls.	Lecture, PPT, Illustration	
II	**Navigation Control and Validation Control**					
	1.	The TreeView Control , Creating the TreeView Control and	4	To be able to create a hierarchical tree using TreeView Control.	Lecture with PPT Illustration	Short test Quiz Formative Assessment
	2.	Using the Menu Class, The Menu Control, Creating Static Menus and Creating Dynamic Menus.	3	To be able to create a hierarchical tree using menu Control. To be able to create static menu and dynamic menu in	Lecture, Illustration	
	3.	Introduction for validation Control , The Required Field Validation Control and The	2	To analyze the various validation control. To be able to create programs using	Lecture, Illustration Discussion	
	4.	The Compare Validator Control	3	To analyze the various validation	Lecture,	

		The Custom Validator Control and The		To be able to create programs using validation controls.	Illustration Discussion	
III	**Working with Database Controls and Login Controls**					
	1.	The Grid View Control and The Data List Control	1	To be able to define grid view and data list control. To be able to display contents in grid view and data list control.	Lecture, PPT, Illustration	Short test Formative Assessment
	2.	The Details View Control, The Form View Control, The List View Control and The Repeater Control	3	To be able to define details view, list view and form view control. To be able to display contents in these controls.	Lecture, Illustration	
	3.	The Sql Data Source Control	1	To be able to create a database in SQL Server and link it with grid view, data list, details view etc., controls and display contents.	Lecture, PPT, Illustration	
	4.	The Access Data Source Control and The Object Data Source Control, Xml Data Source Control	3	To be able to create a database in SQL Server, MS Access, XML and link it with grid view, data list, details view etc., controls and display	Lecture, PPT, Illustration Discussion	
	5.	The Login Control, The Login View Control , The Login Status Control, The Login Name	4	To be able to implement authentication and authorization of users logging on to a website.	Lecture, PPT, Illustration	
IV	**Introducing C# 2008 and Namespace, Classes, Objects, Structs**					
	1.	Need of C# , C#	2	To be able to say the use of C#, preprocessor	Lecture	Short test

		Directives, New Features of 2008 and Creating A Simple C# 2008 Console		directives used in C#. To be able to write a program in C#.		Assignment on data types, variables
	2.	Identifiers And Keywords, Data Types	2	To be able to define identifiers, keywords and data types	Lecture with PPT Discussion	Formative Assessment
	3.	Variables and Constants, Expressions and Operators	2	To be able to define variables, constants, Operators used in C#.	Lecture with PPT Discussion	
	4.	Namespaces, Classes and Objects, Constructors and Destructors	2	To be able to define namespace, class and objects. To develop programs using constructors and	Lecture with PPT Illustration	
	5.	Static Classes and Static Class Members, Properties, Indexers	4	To be able to define static class, static class members, indexers and structs.	Lecture	
V	**Object Oriented Programming, Pointers, Delegates and Events , Flow Control and Exceptional Handling**					
	1.	Encapsulation,	3	To be able to define encapsulation and inheritance. To be able to write programs using inheritance concept	Lecture, Illustration, Discussion	Short test
	2.	Polymorphism, Abstraction and Interfaces	3	To be able to define polymorphism, abstraction and interfaces.	Lecture with PPT Illustration	Formative Assessment
	3.	Control Flow statements	3	To analyze the various programming constructs and implement it to perform specific task	Lecture, PPT, Discussion	
	4.	Exceptional handling	2	To be able to define exception handling and write program using it.	Lecture, Discussion	

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

Semester: IV

Name of the Course: RDBMS with Oracle

Course Code: SC1742

Teaching Plan

Unit	Module	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Introduction to the Relational Model, SQL, Database Design and the E-R Model**					
	1.	Database, System Applications, View of Data	3	To understand about database	Lecture	Evaluation through: short test
	2.	Database Languages, Relational Databases	2	To understand the Relational	Lecture	Multiple choice questions
	3.	Structure of Relational Database, Database Schema, Keys, Schema	3	To understand Database Schema	Lecture	
	4.	Set Operations, Aggregate Functions	2	To know about **SQL**	Lecture	Formative Assessment
	5.	The Entity5 Relationship Model, Constraints, EntityC Relationship	4	To generate an idea about Database Design	Lecture	
	6.	First Normalization Form, Second Normalization Form,	3	To understand about the	Lecture	
II	**The Basic Parts of Speech in SQL, Getting Text Information and Changing It**					
	1.	Creating the Newspaper Table, Select, from, where, and order by, Logic and Value	3	To understand about The Basic Parts of Speech in SQL	Lecture using online resources	Short test Quiz
	2.	Data types	2	To understand about Data types	Lecture	Formative Assessment
	3.	Define String, Notation, Concatenation	3	To understand about the String , Notation ,Concatenation	Lecture	
	4.	Cut and Paste Strings	1	To understand	Lecture	

				about Cut and Paste Strings	using online resources	
	5.	Order by and where with String Functions	1	To gain knowledge about Order by and where with String Functions	Lecture	
III	**Playing The Numbers, Dates: Then, Now, and the Difference:**					
	1.	The Three Classes of Number Functions,	2	To know about Number Functions	Lecture, Illustration	Short test
	2.	Single, Value Functions, Group, Value	2	To be able to create Group Value Functions	Lecture, Illustration	Formative Assessment
	3.	Finding Rows with MAX or MIN, Precedence and Parentheses.	2	To be able to Finding Rows with MAX or MIN	Lecture and ppt illustrations	
	4.	Date Arithmetic, ROUND and TRUNC in Date Calculations, TO_DATE and TO_CHAR Formatting, Dates in where Clauses, Using the EXTRACT	4	To be able to know about EXTRACT Function	Lecture	
	5.	The Use of Group by and Having, Views of Groups	2	To understand about Grouping	Lecture with PPT	
IV	**Dependent Queries, Changing Data, Creating, Dropping, and Altering Tables and Views, PL/SQL**					
	1.	Advanced Subqueries	2	To understand Advanced	Lecture	Short test
	2.	Outer Joins, NATURAL and INNER Joins, UNION,	2	To understand	Lecture	Assignment on category of

	3.	Insert, Update, Merge, and Delete, Insert, Rollback, Commit, and Autocommit, Multitable Inserts, Delete,	3	To understand about Multitable Inserts	Lecture	Formative Assessment
	4.	Creating a Table, Dropping Tables, Altering Tables, Creating a View, Creating a Table from a Table, Creating an Index, Organized Table, Using	2	To develop Creating, Dropping, and Altering Tables and Views	Lecture with PPT Illustration	
	5.	PL / SQL Overview, Declarations Section, Executable Commands Section, Exception	2	To create idea of PL / SQL Overview	Lecture	
V	**Triggers, Procedures, Functions, and Packages**					
	1.	Required System, Privileges, Required Table Privileges, Types of Triggers	3	To introduce about Required System Privileges	Lecture,	Short test
	2.	Trigger Syntax, Enabling and Disabling Triggers, Replacing Triggers, Dropping Triggers	2	To be able to Create a Trigger	Lecture with PPT Illustration	Formative Assessment
	3.	Required System Privileges, Required Table Privileges	2	To be able to Format a Procedures, Functions,	Lecture, Discussion	
	4.	Procedures VS Functions, Procedures VS Packages, Create Procedure Syntax, Create Function Syntax, Create Package Syntax	2	To be able to define procedures	Lecture,	
	5	Viewing Source Code for Procedural Objects,	4	To be able to define Views	Lecture	Formative Assessment

		Compiling Procedures, Functions, and Packages, Replacing Procedures, Functions, and Packages, Dropping Procedures				

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

Semester: IV

Name of the Course: System Analysis and Design

Subject Code: SC1743

Teaching Plan

Unit	Section	Topics	Lecture	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Introduction to C programming**					
	1.	Definition of system , Need for system analysis.	2	To understand system	Lecture	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	**Typical Information Systems:** Introduction to typical information	4	To understand about Typical Information	Lecture	
	3.	Customer or Client System – Inventory control system – Accounting system	3	To understand different systems	Lecture	
	4.	**Problem Solving Steps:** The linear cycle.	3	To know about problem solving steps	Lecture with PPT Illustration	
	5.	**Gathering Information:** A frame work for gathering information	2	To understand about the frame work for	Lecture with PPT	
	6.	Search procedures	2	To be able to	Lecture	

				know about different Search procedures	with PPT Illustration	
II	**Starting a Project**					
	1.	**Starting a Project:** Setting the project goal	5	To understand about Setting the project goal	Lecture with PPT Illustration	Short test Quiz Formative Assessment
	2.	Generating the broad alternative solution	2	To develop the broad alternative solution	Lecture, Illustration	
	3.	Economic feasibility	2	To analyze about Economic	Lecture, Illustration	
	4.	**Data Flow Diagram:** Data flow symbols , Describing systems	5	To develop DFD	Lecture	
	5.	**Describing Data:** Conceptual modelling Entity relationship analysis , E_R	6	To describe data	Lecture with PPT Illustration	
III	**Advanced Modelling Methods**					
	1.	Some advanced topics on the entity relationship model , Alternative	3	To know about Alternative modelling methods	Lecture	Short test Formative Assessment
	2.	Documentation	2	To understand about documentation	Lecture, demonstrati on	
	3.	Project dictionary entries, Using the	3	To be able to use different Project	Lecture	
	4.	**Designing a New System:** Problem solving	2	To be able to Design a New System	Lecture	
	5.	Problem solving with structured system techniques -	3	To understand Designing the new logical model	Lecture with PPT Illustration	
IV	**Relational Analysis**					

	1.	Introduction – Structured system analysis	2	To understand Structured system analysis	Lecture	Short test
	2.	**Database Design:** Conversion to logical record structure	2	To acquire the skills to design DB	Lecture with PPT Illustration Discussion	Assignment on category of functions
	3.	Completing the database specification – Conversion to a set of files – Conversion to DBMS structure.	2	To acquire the skills to convert the files to DBMS Structure	Lecture	Formative Assessment
	4.	**Program Design**: Steps in program design – Structure	2	To develop programs	Lecture	
	5.	Conversion from DFD to structured char	1	To be able to Convert from DFD to structured char	Lecture	
V	**Practical Design Methodologies**					
	1.	Structure System analysis	2	To be able to define Structure	Lecture,	Short test
	2.	HIPO – SSADM.	4	To understand HIPO – SSADM	Lecture with PPT Illustration	Formative Assessment
	3.	Project Management: Choosing project management entities , Organizing project management entities, Tools used in project	4	To analyze how to manage	Lecture, Discussion	
	4.	Reviewing project progress - Project reviews and walkthroughs.	2	To be able to review the project	Lecture, Discussion	

Course Instructor: P.Jasmine Lizy

HOD: Sr. Jothi Antony

Department of Computer Science

Semester: VI

Name of the Course: Mobile Computing

Subject Code: SC1764

No. of hours per week	No. of credits	Total no. of hours	Total marks
5	**5**	**75**	**100**

Objectives:

1. To develop system and application level software for small, battery powered terminals equipped with the wireless network connection.
2. To develop the professional ethics in computing and able to implement the logic and techniques in information technology.

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 Bluetooth, RFID, WiMAX	**PSO - 1**	**U**
CO -3	acquire and apply the knowledge of GSM and GPRS	**PSO – 4**	**U, AP**
CO -4	understand the process of CDMA,3G,Wireless LAN	**PSO – 4**	**U**
CO -5	describe and implementing the security techniques	**PSO – 9**	**AP**

Modules

Total contact hours: 75 (Incl. lectures, assignments and test)

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Introduction**:, **Mobile Computing Architecture, Mobile Computing Through Telephony**					
	1.	Mobile Computing	2	To learn the basic structure of mobile computing	Lecture with PPT	Evaluation through: short test

	2.	Dialogue Control , Networks	2	To recall the types of networks	Lecture with PPT	Multiple choice questions
	3.	Architecture of Mobile Computing , Three Tier Architecture	2	To illustrate the structure of mobile computing and learn all the tiers.	Lecture, PPT	Formative Assessment
	4.	Mobile Computing through Internet.	1	Able to learn how mobile computing work through internet	Lecture, PPT	
	5.	Evolution of Telephony	2	To recall the evolution of telephony systems.	Lecture, PPT	
	6.	Multiple Access Procedures	2	To study how to access the mobile computing	PPT, Demonstration	
	7.	Mobile Computing through Telephone	1	Able to learn how mobile computing work through telephone		
II	**Emerging Technologies, Global System for Mobile Communications[GSM]:**					
	1.	Introduction, Bluetooth	2	To explain the different types of files and recall about Bluetooth technology	Lecture with PPT	Short test Quiz Formative Assessment
	2.	Radio Frequency Identification [RFID]	2	Able to know the RFID and all the frequencies	Lecture, PPT, Demonstartion	
	3.	Wireless Broadband [WIMAX]	1	To learn how the world move towards wireless technology	Lecture, Discussion, PPT	

				and know all the categories.		
	4.	Internet Protocol Version 6[IPV6]	2	Able to study the IPV6 protocol and connections	Lecture, Demonstration Discussion	
	5.	GSM Architecture	2	Able to recall the GSM methods and study the hierarchy of the architecture	Lecture, PPT	
	6.	GSM Entities	2	To study all the GSM entities	Lecture, PPT	
	7.	Call Routing in GSM, PLMN Interfaces	2	To recall the GSM routing and study the interfaces how work with the GSM	Lecture, Demonstration Discussion	
	8.	GSM Addresses and Identifiers, Network Aspects in GSM, GSM Frequency Allocation.	2	To learn all types of addresses and identifiers with the help of GSM networks and know the call frequency.	Lecture, PPT	
III	**Short Message Service , General Packet Radio Services [GPRS]**					
	1.	Computing Over SMS , Short Message Service	2	To recall the SMS structure and know how SMS will transfer one station to another station	Lecture, PPT, Demonstration	Short test Formative Assessment
	2.	GPRS and the Packet	3	Able to know	Lecture,	

		Data Network		how split the datas into packet and how the data will transfer.	Demonstration	
	3.	GPRS Network Architecture	2	Able to study GPRS architecture and study the techniques.	Lecture, Demonstration	
	4.	Data Services in GPRS	2	To know how to work with GPRS Services	Lecture, PPT	
	5.	Applications for GPRS	2	To recall all the applications which will work with GPRS.	Lecture, PPT	
	6.	Limitations of GPRS	2	Able to remove the meaning of metacharacter and recall the importance of 3 standard files available to every command.	Lecture, PPT	
IV	**CDMA and 3G , Wireless LAN**					
	1.	Introduction, Spread-Spectrum Technology	2	Able to recall the Technology about Spread-Spectrum	Lecture	Short test
	2.	Wireless Data , Third Generation Networks	3	Able to view all the wireless data and study the 3G technologies.	Lecture with PPT Discussion	Assignment on data types, variables
	3.	Wireless LAN Advantages	3	Able to know all the advantages of wireless	Lecture with PPT	Formative Assessment

				technologies.		
	4.	Wireless LAN Architecture	2	Able to study the Architecture of Wireless Local Area Network.	Lecture with PPT	
	5.	Mobility in Wireless LAN	2	To explain the concept of LAN mobility in Wireless	Lecture	
	6.	Mobile Ad hoc Networks and Sensor Networks, Wireless LAN Security.	3	To study the networks and sensor networks and the Local Area Network Security mechanism.	Lecture with PPT Discussion	
V	**Security Issues in Mobile Computing**					
	1.	Introduction , Information Security	3	Able to know how to secure our information form hackers and stury the security mechanisms.	Lecture, Discussion	Short test Formative Assessment
	2.	Security Techniques and Algorithm	2	To recall all the security techniques and algorithms.	Lecture with PPT	
	3.	Trust , Security Models	2	Able to study the Trust mechanism and security models.	Lecture, PPT, Discussion	
	4.	Security Framework for Mobile Environment.	3	To achieve the security for our mobile environment	Lecture, Discussion	

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

Teaching Plan for the Academic Year 2019-2020

Semester: VI

Name of the Course: Android Application Development

Subject Code: SC1761

No. of hours per week	No. of credits	Total no. of hours	Total 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.

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 - 2**	**U**
CO -2	Apply the fundamental paradigms and technologies to develop mobile applications	**PSO - 5**	**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 – 10**	**C**
CO -5	Implement various methods in Android to create mobile applications for communication network	**PSO – 9**	**AP**

Modules

Total contact hours: 75 (Incl. lectures, assignments and test)

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Fundamentals of Java for Android Application Development**					
	1.	Introduction to Java, Developing a simple Java program, Interfaces, Inheritance	2	To recall about Java and various Java programs	Lecture	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	Introducing Java Dalvik Virtual Machine	2	To understand about Dalvik Virtual Machine	Lecture	
	3.	Introducing Android, Discussing about Android applications	2	To explain Android architecture and features of Android	Lecture, PPT	
	4.	The Manifest file	1	To understand the core file of Android application development	Lecture	
	5.	Downloading and Installing Android	2	To set the environment to develop Android applications	Lecture, PPT	
	6.	Exploring the Development Environment	1	To explore the various tools used for Android Application Development	Lecture	
	7.	Developing and executing the first	2	To create and execute various programs in	Lecture, Demonstration	

		Android Application		Android		
II	Using Activities, Fragments and Intents in Android					
	1.	Working with activities, Creating an Activity, Starting an Activity	3	To create and start an activity in Android	Lecture, Demonstration	Short test Quiz Formative Assessment Multiple Choice Questions
	2.	Managing the lifecycle of an Activity	1	To understand the stages with which an activity goes through	Lecture	
	3.	Applying themes and styles to an Activity	2	To be able to design the look and format of a view or window	Lecture, Discussion	
	4.	Hiding the title of the Activity	1	To be able to Hide the Title of an Android application	Lecture, Demonstration Discussion	
	5.	Using Intents, Exploring Intent Objects, Exploring Iintent Filters	3	To understand the working of intents in Android and to create Intent Objects and Filters	Lecture, PPT	
	6.	Fragments	3	To understand the lifecycle of a fragment and to implement fragments statically and dynamically in Android	Lecture	

	7.	Using Intent object to invoke built-in application	2	To call built-in applications such as contacts, messaging and phone calls	Lecture, Demonstration	
III	**Working with the User Interface using Views and View Groups**					
	1.	Working with View Groups	2	To understand the grouping of one or more views in Android	Lecture, Demonstration	Short test Formative Assessment Multiple Choice Questions Assignment on various layouts
	2.	The LinearLayout Layout	3	To create and define the LinearLayout Layout	Lecture, Demonstration	
	3.	The RelativeLayout	2	To be able to work with the Relative Layout Layout	Lecture, Demonstration	
	4.	The FrameLayout	2	To be able to understand how to position the views using FrameLayout	Lecture, PPT	
	5.	Working with Views	2	To be able to create different views in Android	Lecture, Demonstration	
	6.	Binding data with the AdapterView class	2	To be able to bind the stored data and display the data in a	Lecture	

				specific manner		
	7.	Designing the AutoTextComplete View	2	To create and understand the AutoText Complete View	Lecture, Demonstration	
	8.	Implementing the Screen Orientation	1	To be able to switch to various screen orientations such as portrait and lansdcape modes	Lecture, Demonstration	
	9.	Creating Menus	2	To add different types of menus to your applications	Lecture, Demonstration	
IV	**Handling Pictures and Menus with Views**					
	1.	Working with Image Views	3	To be able to work with applications in GalleryView, GridView and ImageSwitcher View	Lecture, Demonstration	Short test Formative Assessment Quiz
	2.	Designing Context Menu for Image View	2	To be able to design a Context Menu for an ImageView	Lecture with PPT Discussion	
	3.	Notifying the User	3	To discuss the various notification techniques used such as Toast, Status Bar and Dialog notification	Lecture	

	4.	Storing data persistently, Introducing data storage options	3	Introduce various data storage options in Android	Lecture	
	5.	Using Internal Storage, Using External Storage	2	To write data to files and read data from an existing file,To be able to explore the various methods used for data storage	Lecture	
	6.	Using SQLite Database	1	To be able to use the SQLite database to create applications	Lecture, Discussion	
	7.	Building an Application to send Email	1	Able to create an Android Application for sending Email	Lecture, Demonstration	
V	**Working with Graphics and Animation**					
	1.	Working with Graphics, Using the Drawable object, Using ShapeDrawable object	3	To create graphics directly to the Canvas, To draw various shapes and images and 2-D Graphics	Lecture, Discussion	Short test Formative Assessment Multiple Choice Questions
	2.	Working with Animations	2	To implement various Animation Systems	Lecture	
	3.	Audio, Video and	2	To be able to play Audio	Lecture,	

		Playback, Role of Media Playback, Using Media Player		and Video files	Discussion	
	4.	Preparing Audio and Video for Playback, Using Camera for taking Pictures	3	To design an Android application for playing Audio and Video files, To design an Android application for taking pictures using Camera	Lecture, Discussion	

Course Instructor: Pillai Archana Baburajendranath **HOD:** Sr. Jothi

Teaching Plan for the Academic Year 2019-2020

Semester: VI

Name of the Course: **Computer Graphics and Multimedia**

Subject Code: SC1762

No. of hours per week	No. of credits	Total no. of hours	Total marks
5	**5**	**75**	**100**

Objectives:

1. To acquire the knowledge of computer graphics and multimedia.
2. To extend creativity and innovation in various fields of computing technology.

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO -1	Understand fundamental principles of computer graphics	**PSO – 12**	**U**
CO -2	Discuss algorithms for 2D and 3D transformations	**PSO – 9**	**U**
CO -3	Interpret simple problems in the basic representation and handling of multimedia data (images, audio and animation	**PSO - 4**	**AP**
CO -4	Create simple 2D animations, 3D animations	**PSO – 5**	**AP**

Modules

Total contact hours: 75 (Incl. lectures, assignments and test)

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment / Evaluation
I	**Introduction, Graphical Input/output Devices, Raster Scan Video Principles, Random scan Devices**					
	1.	Applications of Computer Graphics, Operations of Computer Graphics	2	Understand fundamental principles of computer graphics.	Lecture with PPT	Evaluation through: short test
	2.	Graphics Packages, Requirements of a Graphical System	2	Able to know about software packages and display adaptor cards	Lecture with PPT	Multiple choice questions
	3.	Graphical User Interfaces.	1	To explain Graphical User Interfaces	Lecture, PPT	Formative Assessment
	4.	Common Input Devices - Graphics Output Devices	2	Able to distinguish the difference between Graphical Input Output Devices	Lecture, PPT	
	5.	Plasma Panel Display , LCD Panels.	2	To illustrates the types of Displays	Lecture, PPT	
	6.	Memory Tube Displays, Plotters Graphics Accelerators and Coprocessors.	3	To explain the uses of Displays and Plitters	PPT, Demonstration	
II	**Scan Conversions, DDA Algorithms, Bresenham's Algorithms, Scan Conversion of Solids, Solid Area Filling Algorithm.**					
	1.	Scan Conversions Methods, Polynomial Method	2	To explain the different types of conversion methods	Lecture with PPT	Short test Quiz
	2.	DDA for Line, DDA for Circle Generation,	4	To explain DDA Algorithms	Lecture, PPT,	Formative Assessment

		Ellipse, Parabola.			Demonstartion	
	3.	Bresenham's Line Drawing Algorithm, Bresenham's Circle Algorithms.	2	To explain Bresenham's Algorithms	Lecture, Discussion, PPT	
	4.	Solid Areas or Polygons **,** Inside Outside Test	2	To explain Polygons, Odd-Even Methods and Winding Number Method	Lecture, Demonstration Discussion	
	5.	Boundary Fill Algorithm - Flood Fill Algorithm - Scan Line Fill Algorithm.	3	Able to explain Filling Algorithms	Lecture, PPT	
III	**2-D Geometrical Transformation**, **Homogenous Coordinate Systems, Other Transformations, 3-D Geometrical Transformation, Other 3D Transformations**					
	1.	Translation , Scaling, Rotation, Transformation of Points and Objects.	4	To explain 2D Transformation.	Lecture, PPT, Demonstration	Short test Formative Assessment
	2.	Scaling about a Reference Point, Rotation about an Arbitrary Point.	2	To explain about reference point and arbitrary point	Lecture, Demonstration	
	3.	2DReflection , 2DShearing	2	Recall about reflection and shearing	Lecture, Demonstration	

	4.	3D Translation, 3DScaling, 3D Rotation	3	Recall abut Transformation.	Lecture, PPT	
	5.	3DReflection ,3D Shearing	2	To recall about Reflection and Shearing	Lecture, PPT	
IV	**2-D Viewing and Clipping, 3-D Viewing and Clipping.**					
	1.	Windows and Viewports, Viewing Transformations	2	Able to explain windows and viewports	Lecture	Short test
	2.	Cohen Sutherland Clipping Algorithm in 2D ,Midpoint Subdivision Method, Concepts of Parametric Clipping, Liang-Barsky Clipping Algorithm in 2D	4	Able to explain clipping lines algorithms	Lecture with PPT Discussion	Assignment on data types, variables Formative Assessment
	3.	Polygon Clipping, Clipping against Concave Windows.	2	Recall about Clipping algorithms	Lecture with PPT	
	4.	Clipping of Lines in 3D ,Cohen Sutherland Clipping Algorithm in 3D, Liang-Barky 3D Clipping Algorithm.	3	Recall about Viewing and Clipping	Lecture with PPT	
V	**Multimedia Basics, Graphics Image File Format, Animation and Flash Overview**					

	1.	Concepts of Multimedia , MIDI , Image Compression Standards,Video Compression and Encoding , Virtual Reality**.**	7	Understand the basic concepts of Multimedia.	Lecture, Discussion	Short test Formative Assessment
	2.	BMP – GIF – JPEG – TIFF – MIX - PNG	1	Understand image file formats	Lecture with PPT	
	3.	Flash Basics ,Flash Work Environment, Using Layers, Creating Animation.	5	Able to create animation	Lecture, PPT, Discussion	

Course Instructor: V.R. Bithiah Blessie **HOD:** Sr. Jothi

Teaching Plan for the Academic Year 2019-2020

Semester: VI

Name of the Course: UNIX and Shell Programming

Subject Code: SC1763

No. of hours per week	No. of credits	Total no. of hours	Total marks
5	**5**	**75**	**100**

Objectives:

1. To familiarize students with the UNIX environment.
2. To learn the fundamentals of shell scripting/programming.

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**

Modules

Total contact hours: 75 (Incl. lectures, assignments and test)

Unit	Section	Topics	Lecture hours	Learning Outcome	Pedagogy	Assessment/ Evaluation
I	**Getting Started, The UNIX Architecture and Command Usage and General Purpose Utilities**					
	1.	The Operating System, The UNIX Operating System	2	To recall functions of OS and UNIX OS	Lecture with PPT	Evaluation through: short test Multiple choice questions Formative Assessment
	2.	A Brief Session	2	Able to login, work with commands and exit from UNIX.	Lecture with PPT	
	3.	The UNIX Architecture, Features of UNIX	2	To explain UNIX architecture and features of UNIX	Lecture, PPT	
	4.	Locating Command, Internal and External Commands	1	Able to distinguish the difference between internal and external commands	Lecture, PPT	
	5.	Command Structure, Flexibility of Command Usage, Man Browsing the Manual Pages On-line	2	To illustrates the types of arguments that can be used in a command. Able to say the flexibility in the usage of commands	Lecture, PPT	
	6.	cal, date, echo, printf, bc, script, passwd, who, uname, tty, stty	3	To explain the uses, syntax & work with these commands.	PPT, Demonstration	
II	**The File System, Handling Ordinary Files and Basic File Attributes**					
	1.	The File, File Name,	2	To explain the different	Lecture with PPT	Short test

		The HOME Variable		types of files and recall about home directory.		Quiz Formative Assessment
	2.	pwd, cd, mkdir, rmdir, Absolute and Relative Pathnames	2	To recall the tools that handle directories. Compare absolute and relative pathnames.	Lecture, PPT, Demonstart ion	
	3.	ls: Listing Directory Content, The UNIX File System	2	To recognize the option used to list directory contents in ls command. Able to recall the structure of UNIX file system.	Lecture, Discussion, PPT	
	4.	cat, cp, rm, mv, more, lp, file, wc, od, cmp, comm., diff, gzip, gunzip, zip and unzip	3	Able to list out the uses and syntax for file-handling commands.	Lecture, Demonstrat ion Discussion	
	5.	ls -l: Listing File Attributes, File Ownership, File Permissions	2	Able to recall the options to list file attributes. Able to explain file ownership & file permissions.	Lecture, PPT	
	6.	chmod, Directory Permissions, Changing File Ownership.	2	Able to change file permissions, directory permissions and file ownership.	Lecture, PPT	
III	**The VI Editor and The Shell**					

	1.	vi Basics	1	To recall the three modes in which vi operates for sharing the workload.	Lecture, PPT, Demonstration	Short test Formative Assessment
	2.	Input Mode - Entering and Replacing Text, Saving Text and Quitting	3	Able to use the input mode to insert, replace and save text in vi editor.	Lecture, Demonstration	
	3.	The ex Mode, Navigation, Editing Text	2	Able to save your work, move around the vi editor, delete, copy and move text using operators.	Lecture, Demonstration	
	4.	Undoing Last Editing Instructions, Repeating the Last command, Searching for a Pattern, Substitution — Search and Replace	2	Able to undo the last editing action, search for a pattern, perform string substitution.	Lecture, PPT	
	5.	Shell Offerings, Pattern Matching	2	To recall shell's interpretive cycle, importance of metacharacters and their use in wild-cards for matching multiple filenames.	Lecture, PPT	
	6.	Escaping and Quoting, Redirection	2	Able to remove the meaning of metacharacter and recall the importance	Lecture, PPT	

				of 3 standard files available to every command.		
	7.	Pipes, tee, Command Substitution, Shell Variables	2	To recall how shell manipulates the default source and destination of 3 standard files streams to implement pipelines, uses of shell variables.	Lecture, PPT	
IV	**The Process, Customizing the Environment and More File Attributes**					
	1.	ps: Process Status, Mechanism of Process Creation, Running Jobs in Background	2	Able to view process attributes, run a job in background with & and nohub command.	Lecture	Short test Assignment on data types, variables Formative Assessment
	2.	nice: Job Execution with Low Priority, Killing Processes with Signals, at and batch: Execute Later, cron: Running Jobs Periodically	3	Able to reduce the priority of a job, kill command to terminate processes, schedule jobs to run periodically.	Lecture with PPT Discussion	
	3.	Environment Variables, The Common Environment Variables, Aliases	3	Able to differentiate the difference between local and environmental variables. To use aliases to call	Lecture with PPT	

				commands with short names.		
	4.	Command History, In-line Command Editing	2	Able to recall, edit and run previously executed commands.	Lecture with PPT	
	5.	File Systems and Inodes, The Directory, umask: Default File and Directory Permissions, find: Locating Files	3	To explain the concept of file system, Use of inode to store file attributes. Able to change the default file and directory permissions.	Lecture	
V	**Simple Filters, Filters Using Regular Expressions and Essential Shell Programming**					
	1.	The Sample Database, pr, head, tail, cut, paste, sort, grep	3	Able to format text i.e., to give margins, spacing, pick up lines from the beginning and ending, join two files laterally, searching for a pattern.	Lecture, Discussion	Short test Formative Assessment
	2.	Shell Scripts, read: Making Scripts Interactive, Using Command Line Arguments, exit and Exit Status of Command	2	To recall shell script and to execute it. Able to make shell scripts interactive and to make use of exit statement in terminating a script.	Lecture with PPT	

	3.	The Logical Operators && and || --Conditional Execution	2	Able to perform elementary decision making wit && and || operators.	Lecture, PPT, Discussion	
	4.	The if Conditional, The case Conditional, while: Looping, for: Looping with a List, Debugging Shell Scripts with set –x	3	To analyze the various programming constructs and implement it to perform specific task	Lecture, Discussion	

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