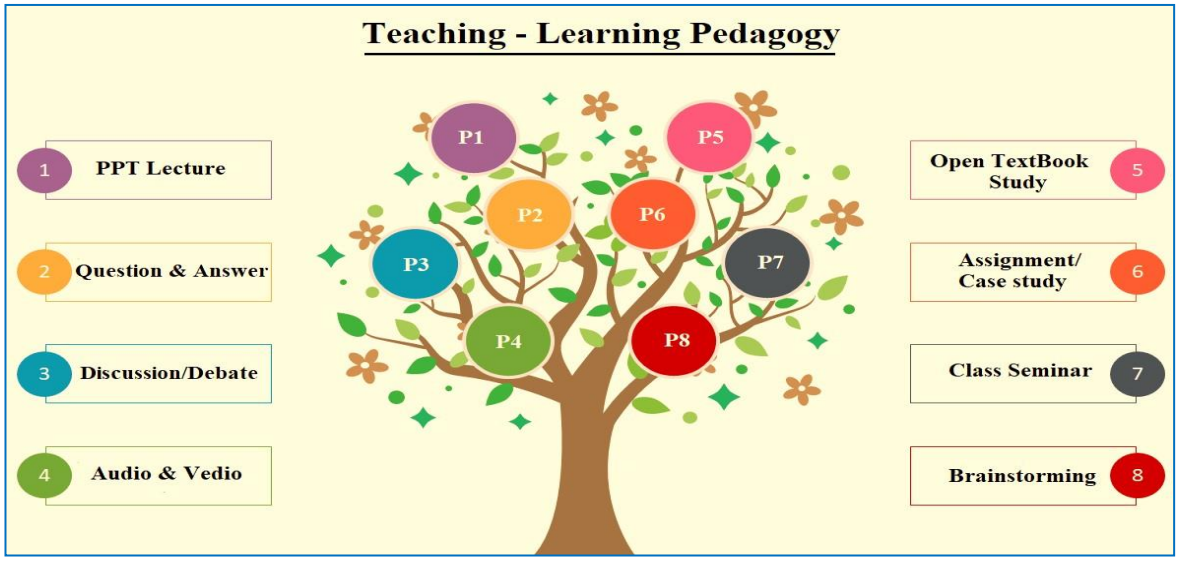
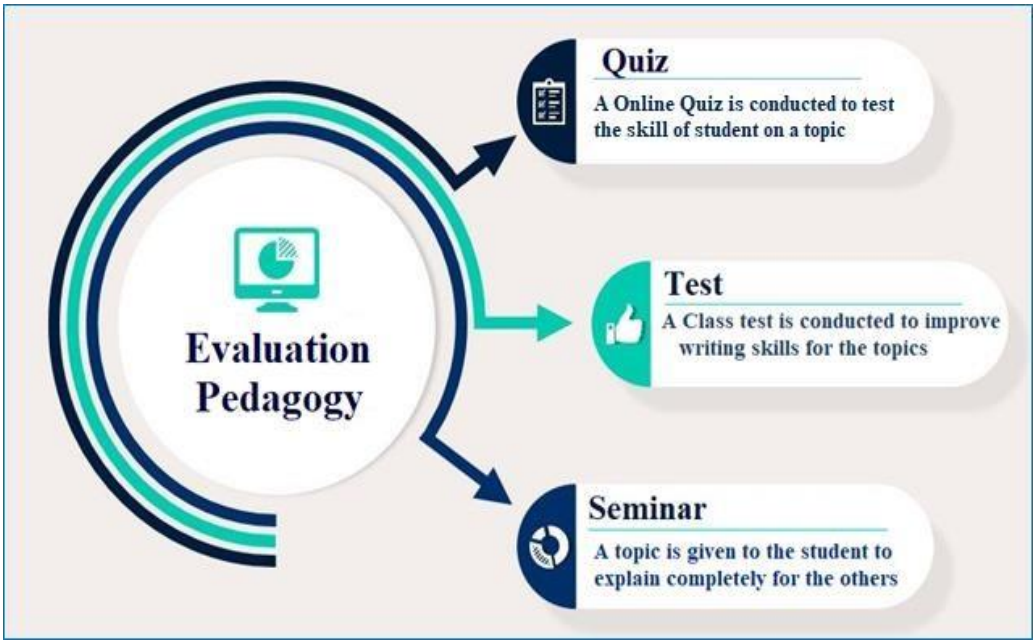
DEPARTMENT OF COMPUTERSCIENCE
Teaching Plan – 2022-2023





Course: B.SC	Year:I	Semester:I
Subject	**PROBLEM SOLVING IN C**	
Units	1.1 General Fundamentals 1.2 Introduction of Algorithms and ProgrammimgLanguages 2.1 Introduction to C 2.2 Decision Control and looping Statements 3.1 Arrays 4.1 Functions 4.2 Structure Union and Enumerated Data types 5.1 Pointers 5.2 Files	
Duration	**60hours**	
LearningObjectives	• To understand the evolution and functionality of a Digital Computer. • Apply logical skills to analyze a given problem. • Develop an algorithm for solving a given problem. • Understand 'C' language constructs like iterative statements, Array processing , Pointers etc. • Apply 'C' language constructs to the algorithm to write a 'C' language program	

Units	U1	U2	U3	U4	U5
Hours Split:Total: 60	10	12	14	10	14
Internal valuation:40marks	8	8	8	8	8

Resource Material:

StudyMaterial(Handouts):

1. https://www.mcemotihari.ac.in/wpcontent/uploads/2019/11/file_5dc2a6c80c260.pd
2. https://onlinecourses.nptel.ac.in/noc20_cs06/preview

Reference Books:

1. E Balagurusamy – Programming in ANSIC – Tata McGraw-Hill publications.
2. Brain W Kernighan and Dennis M Ritchie - The 'C' Programming language" - Pearson publications.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publications.
4. YashavantKanetkar - Let Us 'C' – BPB Publications.

YouTube Links:

https://youtu.be/8PopR3x-VMY

Power Point Presentations:

https://www.slideshare.net/gauravjuneja11/c-language-ppt

QuestionBank:

https://www.acsce.edu.in/acsce/wp-content/uploads/2020/03/Module-wise-Question-Bank-CPS.pdf

I. Academic-Pedagogical-Evaluation:Unit-wisePedagogy

UNIT	DESCRIPTION	PEDAGOGY	INTERNAL EVALUATION
I	Introduction to GeneralFundamentals:Introductiontocomputers:Blockdiagramofacomputer,characteristics and limitations of computers, applications of computers, types of computers,computer generations. Introduction to Algorithms and Programming Languages: Algorithm – Key features ofAlgorithms,FlowCharts,ProgrammingLanguages– GenerationsofProgrammingLanguages – Structured Programming Language- Design and Implementation of Correct,Efficientand Maintainable Programs.	P1,P2,P3	PQ,P6,PT
II	**Introduction to C**: Introduction – Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments –Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples. **Decision Control and Looping Statements**: Introduction to Decision Control Statements– Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement	P1,P2,P3,P5	P6,PT
III	Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – StoringValuesinArray– OperationsonArrays– onedimensional,twodimensionalandmultidimensionalarrays ,characterhandlingand strings.	P1,P2,P3,P5	PQ,PT
IV	Functions:Introduction–usingfunctions– Functiondeclaration/prototype–Functiondefinition – function call – return statement – Passing parameters – Scope of variables –StorageClasses – Recursive functions. Structure, Union, and Enumerated Data Types: Introduction – Nested Structures – Arraysof Structures – Structures andFunctions– Union – Arrays of UnionsVariables–UnionsinsideStructures – Enumerated Data Types.	P1,P2,P4	PQ,P6,PT
V	**Pointers**:Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers - Passing Arguments to Functions using Pointer – Pointer and Arrays – Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers Files: Introduction to Files – Using Files in C – Reading Data from Files – Writing Data to Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Argument	PQ,P6,PT,**P8**	PQ,PT

Course: B.SC	Year:I	Semester:II
Subject	**Data Structures Using C**	
Units	1. Introduction to Data Structures and Principles of Programming and Analysis of Algorithms 2. Arrays and Linked lists 3. Stack and Queues 4. Binary trees 5. Searching and Sorting and Graphs	
Duration	**60hours**	
LearningObjectives	1.Provide the knowledge of basic data structures and their implements 2.Understand the importance of data structures in context of writing efficient programs 3.Develop skills to apply appropriate data structures in problem solving 4.Know strength and weakness of different data stuctures	

Units	U1	U2	U3	U4	U5
Hours Split:Total: 60	10	12	14	10	14
Internal valuation:40marks	8	8	8	8	8

Resource Material:	**StudyMaterial(Handouts):** **https://www.cet.edu.in/noticefiles/280_DS%20Complete.pdf** **https://www.pdfdrive.com/data-structures-in-c-books.html** **Reference Books:** 1. "Data Structures Using C" Balagurusamy E. TMH 2. "Data Structures through C", YashavantKanetkar, BPB Publications **YouTube Links:** **https://www.youtube.com/watch?v=MtVZAXepMPM** **https://www.youtube.com/watch?v=11i8bRojtYk** **Power Point Presentations:** **https://www.slideshare.net/adisesha12/data-structures-using-c-59540025** **QuestionBank:** **http://gn.dronacharya.info/CSE2Dept/Downloads/Questionpapers/3rd_sem/Data-Structure-Question-Bank.pdf**

I. Academic-Pedagogical-Evaluation:Unit-wisePedagogy

UNIT	DESCRIPTION	PEDAGOGY	INTERNAL EVALUATION
I	Introduction to Data Structures: Introduction to the Theory of Data Structures, Data Representation, Abstract Data Types, Data Types, Primitive Data Types, Data Structure and Structured Type, Atomic Type, Difference between Abstract Data Types, Data Types, and Data Structures, Refinement Stages Principles of Programming and Analysis of Algorithms: Software Engineering, Program Design, Algorithms, Different Approaches to Designing an Algorithm, Complexity, Big „O" Notation, Algorithm Analysis, Structured Approach to Programming, Recursion, Tips and Techniques for Writing Programs in „C"	P1,P3,P2,P6	PQ,PT
II	Arrays: Introduction to Linear and Non-Linear Data Structures, One- Dimensional Arrays, Array Operations, Two- Dimensional arrays, Multidimensional Arrays, Pointers and Arrays, an Overview of Pointers Linked Lists: Introduction to Lists and Linked Lists, Dynamic Memory Allocation, Basic Linked List Operations, Doubly Linked List, Circular Linked List, Atomic Linked List, Linked List in Arrays, Linked List versus Arrays	P1,P5,P3,P2	P6,PT,PQ
III	Stacks: Introduction to Stacks, Stack as an Abstract Data Type, Representation of Stacks through Arrays, Representation of Stacks through Linked Lists, Applications of Stacks, Stacks and Recursion Queues: Introduction, Queue as an Abstract data Type, Representation of Queues, Circular Queues, Double Ended Queues- Deques, Priority Queues, Application of Queues	P1,P3,P5,P7	P6,PT

IV	Binary Trees: Introduction to Non- Linear Data Structures, Introduction Binary Trees, Types of Trees, Basic Definition of Binary Trees, Properties of Binary Trees, Representation of Binary Trees, Operations on a Binary Search Tree, Binary Tree Traversal, Counting Number of Binary Trees, Applications of Binary Tree	P1,P2,P5,P6	PQ, PT
V	Searching and sorting: Sorting – An Introduction, Bubble Sort, Insertion Sort, Merge Sort, Searching – An Introduction, Linear or Sequential Search, Binary Search, Indexed Sequential Search Graphs: Introduction to Graphs, Terms Associated with Graphs, Sequential Representation of Graphs, Linked Representation of Graphs, Traversal of Graphs, Spanning Trees, Shortest Path, Application of Graphs.	PQ,P7,PT,**P8**	PQ,P6,PT

Course: B.SC	Year:II	Semester:III
Subject	**Data Base Management System**	
Units	1. Overview of Database Management System 2. Entity-Relationship Model 3. Relational Model 4. Structured Query Language 5. PL/SQL	
Duration	**60hours**	
LearningObjectives	1. GainknowledgeofDatabaseandDBMS. 2. UnderstandthefundamentalconceptsofDBMSwithspecialemphasisonrelationaldatamodel. 3. Demonstrateanunderstandingofnormalizationtheoryandapplysuchknowledgetothenormalization ofadatabase 4. ModeldatabaseusingERDiagramsanddesigndatabaseschemasbasedonthemodel. 5. Createasmall databaseusingSQL. 6. Store,Retrievedataindatabase.	

Units	U1	U2	U3	U4	U5
Hours Split:Total: 60	10	12	14	10	14
Internal valuation:40marks	8	8	8	8	8

Resource Material:	**StudyMaterial(Handouts):** https://sircrrengg.ac.in/images/CSEMATERIALS/R19_DBMS_MATERIAL.pdf **Reference Books:** 1. DatabaseSystemConceptsbyAbrahamSilberschatz,HenryKorth,andS.Sudarshan,McGraw hill 2. DatabaseManagementSystemsbyRaghuRamakrishnan,McGrawhill 3. Principlesof DatabaseSystems byJ. D. Ullman 4. FundamentalsofDatabaseSystems byR.ElmasriandS.Navathe 5. SQL:TheUltimateBeginnersGuide bySteveTale. **YouTube Links:** https://www.youtube.com/watch?v=c5HAwKX-suM **Power Point Presentations:** https://www.slideshare.net/OECLIBOdishaElectron/database-management-system-ppt **QuestionBank:** https://blog.oureducation.in/sample-paper-for-dbmsdata-base-management-system/

Academic-Pedagogical-Evaluation:Unit-wisePedagogy

UNIT	DESCRIPTION	PEDAGOGY	INTERNAL EVALUATION
I	**Overview of Database Management System:** Introduction, file-based system, Drawbacks of file-Based System ,Data and information, Database, Database management System, Objectives of DBMS, Evaluation of Database management System, Classification of Database Management System, DBMS Approach, advantages of DBMS, Anis/spark Data Model, data models, Components and Interfaces of Database Management System. Database Architecture, Situations where DBMS is not Necessary, DBMS Vendors and Their Products.	P1,P2,P3	PQ,P6,PT
II	**Entity-Relationship Model**: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, **IS A** relationship and attribute inheritance, multiple inheritance, constraints on specialization and generalization, aggregation and composition, entity clusters, connection types, advantages of ER modeling.	P1,P2,P4,P5	P6,PT
III	**Relational Model:** Introduction, CODD Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations, advantages of relational algebra, limitations of relational algebra, relational calculus, tuple relational calculus,domain relational Calculus (DRC). QBE	P1,P2,P3	PQ,PT
IV	**Structured Query Language:** Introduction, History of SQL Standard, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language, Table Modification Commands, Table Truncation, Imposition of Constraints, Join Operation, Set Operation, View, Sub Query, Embedded SQL,	P1,P2,P4,P5	PQ,P6,PT
V	**PL/SQL:** Introduction, Shortcoming in SQL, Structure of PL/SQL, PL/SQL Language Elements, Data Types, Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program, Iterative Control, Cursors, Steps to create a Cursors, Procedure, Function, Packages, Exceptions Handling, Database Triggers, Types of Triggers.	PQ,P6,PT	PQ,PT

Course: B.SC	Year:II	Semester:IV
Subject	**Object Oriented Programming Using Java**	
Units	6. IntroductiontoJava & Naming Conventions and Data Types 7. Strings & IntroductiontoOOPs 8. Polymorphism and ExceptionHandling 9. Streams and Threads 10. Applets and Java Database Connectivity	
Duration	**60hours**	
LearningObjectives	• Understand the concept and underlying principles of Object-Oriented Programming • Understand how object-oriented concepts are incorporated into the Java programming language • Develop problem-solving and programming skills using OOP concept • Understand the benefits of a well structured program • Develop the ability to solve real-world problems through software development in high-level programming language like Java • Develop efficient Java applets and applications using OOP concept	

Units	U1	U2	U3	U4	U5
Hours Split:Total: 60	10	12	14	10	14
Internal valuation:40marks	8	8	8	8	8

Resource Material:	**StudyMaterial(Handouts):** https://sircrrengg.ac.in/images/CSEMATERIALS/R19_DBMS_MATERIAL.pdf **Reference Books:** 1. CoreJava:AnIntegratedApproach,AuthoredbyDr.R.NageswaraRao&KogentLearningSolutionsInc. 2. E.Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw-HillCompany. 3. JohnR.Hubbard,ProgrammingwithJava,SecondEdition,Schaum'soutlineSeries,TMH. 4. Deitel&Deitel.JavaTM:HowtoProgram,PHI(2007) **YouTube Links:** https://www.youtube.com/watch?v=bSrm9RXwBaI **Power Point Presentations:** https://www.slideshare.net/nileshdalvi01/basics-concepts-of-oops **QuestionBank:** https://www.academia.edu/9901808/CS2311

Academic-Pedagogical-Evaluation:Unit-wisePedagogy

UNIT	DESCRIPTION	PEDAGOGY	INTERNAL EVALUATION
I	Introduction to Java: Features of Java, The Java virtual Machine, Parts of Java Naming Conventions and Data Types: Naming Conventions in Java, Data Types in Java, Literals Operators in Java: Operators, Priority of Operators Control Statements in Java: if... else Statement, do... while Statement, while Loop, for Loop, switch Statement, break Statement, continue Statement, return Statement Input and Output: Accepting Input from the Keyboard, Reading Input with Java.util.Scanner Class, Displaying Output with System.out.printf(), Displaying Formatted Output with String.format() Arrays: Types of Arrays, Three Dimensional Arrays (3D array), arrayname.length, Command Line Arguments	P1,P2,P3,P4	PQ,PT
II	Strings: Creating Strings, String Class Methods, String Comparison, Immutability of StringsIntroductiontoOOPs:ProblemsinProcedureOrientedApproach ,FeaturesofObject-OrientedProgrammingSystem (OOPS) ClassesandObjects:ObjectCreation,Initializing theInstanceVariables,AccessSpecifiers,Constructors MethodsinJava:MethodHeaderorMethodPrototype,MethodB ody,UnderstandingMethods,StaticMethods,StaticBlock,The keyword‘this’,InstanceMethods,PassingPrimitive Data Types to Methods, Passing Objects to Methods, Passing Arrays to Methods,Recursion, FactoryMethods Inheritance:Inheritance,Thekeyword‘super’,TheProtectedSp ecifier,TypesofInheritance	P1,P2,P3P5	P6,PT
III	**Polymorphism:**PolymorphismwithVariables,Polymorphis musingMethods,PolymorphismwithStaticMethods,Polymor phismwithPrivateMethods,PolymorphismwithFinal Methods, finalClass **Type Casting:** Types of Data Types, Casting Primitive Data Types, Casting Referenced DataTypes,TheObject Class **AbstractClasses:**AbstractMethodandAbstractClass **Interfaces:**Interface,MultipleInheritanceusingInterfaces **Packages:**Package,DifferentTypesofPackages,TheJARFiles,Interfa cesinaPackage,Creating Sub Package in a Package, Access Specifiers in Java, Creating API Document**ExceptionHandling:**ErrorsinJavaProgram,Exceptions,thr owsClause,throwClause,Typesof Exceptions, Re – throwing an Exception	P1,P2,P3,P4	PQ,PT,P8

IV	Streams: Stream, Creating a File using FileOutputStream, Reading Data from a File uingFileInputStream, Creating a File using FileWriter, Reading a File using FileReader, Zipping and Unzipping Files, Serialization of Objects, Counting Number of Characters in a File, File Copy, File Class Threads: Single Tasking, Multi Tasking, Uses of Threads, Creating a Thread and Running it, Terminating the Thread, Single Tasking Using a Thread, Multi Tasking Using Threads, Multiple Threads Acting on Single Object, Thread Class Methods, Deadlock of Threads, Thread Communication, Thread Priorities, thread Group, Daemon Threads, Applications of Threads, Thread Life Cycle	P1,P2,P5	PQ,P6,PT
V	Applets: Creating an Applet, Uses of Applets, <APPLET> tag, A Simple Applet, An Applet with Swing Components, Animation in Applets, A Simple Game with an Applet, Applet Parameters Java Database Connectivity: Database Servers, Database Clients, JDBC (Java Database Connectivity), Working with Oracle Database, Working with MySQL Database, Stages in a JDBC Program, Registering the Driver, Connecting to a Database, Preparing SQL Statements, Using jdbc–odbc Bridge Driver to Connect to Oracle Database, Retrieving Data from MySQL Database, Retrieving Data from MS Access Database, Stored Procedures and CallableStatements, Types of Result Sets	P1,P2,P6	PQ,PT,P5

Course: B.SC	Year:II	Semester:IV
Subject	**OPERATING SYSTEMS**	
Units	1. Introduction to Operating System 2. Threads and Process scheduling 3. Process Management 4. Memory Management 5. File and I/O Management, OS security and introduction to Android operating system	
Duration	**60hours**	
LearningObjectives	1. To learn how Operating System is important for Computer System 2. To learn secondary memory management 3. To know virtual memory concepts 4. To make aware of different types of operating systems and devices	

Units	U1	U2	U3	U4	U5
Hours Split:Total: 60	10	12	14	10	14
Internal valuation:40marks	8	8	8	8	8

Resource Material:	**StudyMaterial(Handouts):** **https://www.svecw.edu.in/Docs%5CCSEOSLNotes2013.pdf** **https://byjus.com/govt-exams/operating-system-introduction/https://www.geeksforgeeks.org/operating-systems/** **Reference Books:** 1. Operating System Principles by Abraham Silberschatz, Peter Baer Galvin and Greg Gagne (7thEdition) Wiley India Edition. 2. Operating Systems: Internals and Design Principles by Stallings (Pearson) 3. Operating Systems by J. Archer Harris (Author), Jyoti Singh (Author) (TMH) 4. W.Stalling, Operating Systems, Addison Wesley Longman **YouTube Links:** **https://www.youtube.com/watch?v=RozoeWzT7IMhttps://www.youtube.com/watch?v=2i2N_Qo_FyM** **Power Point Presentations:** **https://cag.gov.in/uploads/media/OS-20210426203801.ppt** **https://www.os-book.com/OS9/slide-dir/index.htmlhttps://www.svecw.edu.in/Docs%5CCSEOSLNotes2013.pdf** **QuestionBank:** **https://scitechgen.com/operating-systems-question-bank/https://engg.mit.asia/admin/assets/images/QuestionBank/TE_QuestionBank_OperatingSystem.pdf**

UNIT	DESCRIPTION	PEDAGOGY	INTERNAL EVALUATION
I	**Introduction to Operating system:** What is Operating System? History and Evolution of OS, Basic OS functions, Resource Abstraction, Types of Operating Systems– Multiprogramming Systems, Batch Systems, Time Sharing Systems; Operating Systems for Personal Computers, Workstations and Hand-held Devices, Process Control & Real time Systems.	P1,PQ,P5,P7	P6,PT,PQ
II	**Threads and Process scheduling**: Processor and User Modes, Kernels, System Calls and System Programs, System View of the Process and Resources, Process Abstraction, Process Hierarchy, Threads, Threading Issues, Thread Libraries; Process Scheduling, Non-Preemptive and Preemptive Scheduling Algorithms.	P1,P3,P5,P7	PQ,PT

III	**Process Management**: Deadlock, Deadlock Characterization, Necessary and Sufficient Conditions for Deadlock, Deadlock Handling Approaches: Deadlock Prevention, Deadlock Avoidance and Deadlock Detection and Recovery. Concurrent and Dependent Processes, Critical Section, Semaphores, Methods for Inter- process Communication; Process Synchronization, Classical Process Synchronization Problems: Producer-Consumer, Reader-Writer.	P1,P5,P3,P2	PQ,P6,PT
IV	**Memory Management**: Physical and Virtual Address Space; Memory Allocation Strategies– Fixed and -Variable Partitions, Paging, Segmentation, Virtual Memory	PQ,PT,P8,P7	P6,PT
V	**File and I/O Management, OS security** : Directory Structure, File Operations, File Allocation Methods, Device Management, Pipes, Buffer, Shared Memory, Security Policy Mechanism, Protection, Authentication and Internal Access Authorization **Introduction to Android Operating System**: Android Development Framework, Android Application Architecture, Android Process Management and File System, Small Application Development using Android Development Framework.	P1,P2,P5,P6	PQ, PT

Course:B.SC	Year:III	Semester:V
Subject	**6A.WebInterfaceDesigning Technologies**	
Units	1. **HTML** 2. **HTMLforms** 3. **HTMLAPI'S** 4. **CSS** 5. **Client side Validation** 6. **Word press** **7. Working with themes**	
Duration	**60hours**	
LearningObjectives	1. Createabasic website with thehelpof HTMLand CSS. 2. Acquirethe skill of installingword press and variousplugins ofWordpress. 3. Createastatic website with thehelpofWordpress. 4. Createaninterfacefor adynamicwebsite. 5. Applyvarious themesfortheirwebsites usingWordpress.	

Units	U1	U2	U3	U4	U5
HoursSplit:Total: 60	12	14	12	10	12
Internal valuation:40marks	8	8	8	8	8

ResourceMaterial:	**StudyMaterial(Handouts):** http://www.w3schools.com **Reference Books:** 1. ChrisBates,WebProgrammingBuildingInternetApplications,SecondEdition,Wiley(2007) 2. PaulS.WangSandaS.Katila,anIntroductiontoWebDesignplusProgramming,Thomson (2007). 3. Head FirstHTMLandCSS,ElisabethRobson,EricFreeman,O'ReillyMediaInc. **YouTube Links:** https://youtu.be/wXUhTZpF_HQ **Power Point Presentations:** https://slideplayer.com/slide/3121381/ **QuestionBank:** https://youtu.be/Iar_cR3zT8g

UNIT	DESCRIPTION	PEDAGOGY	INTERNAL EVALUATION
I	**HTML:**Introduction to web designing, difference between web applications and desktopapplications,introductiontoHTML,HTMLstructure,elements,attributes,headings,paragraphs, styles, colours,HTML formatting, Quotations, Comments, images, tables, lists,blocksandclasses,HTMLCSS,HTMLframes,filepaths,layout,symbols,HTMLresponsive.	P1,P2,P3	PQ,P6,PT
II	**HTMLforms**:HTMLformelements,inputtypes,inputattributes,HTML5,HTMLgraphics,HTMLmedia –video, audio,plugINS,you tube. **HTMLAPI'S:**Geolocation,Drag/drop,localstorage,HTMLSSE. **CSS:** CSS home, introduction, syntax, colours, background, borders, margins, padding,height/width, text, fonts, icons, tables, lists, position, over flow, float, CSS combinators,pseudo class, pseudo elements, opacity, tool tips, image gallery, CSS forms, CSS counters,CSSresponsive.	P1,P2,P3,P5	P6,PT

III	**Client side Validation:** Introduction to JavaScript - What is DHTML, JavaScript, basics,variables,stringmanipulations,mathematicalfunctions,statements,operators,arrays,functions.ObjectsinJavaScript-DataandobjectsinJavaScript,regularexpressions,exception handling. DHTML with JavaScript- Data validation, opening a new window,messagesandconfirmations,thestatusbar,differentframes,rolloverbuttons,movingimages.	P1,P2,P3,P5	PQ,PT
IV	**Word press:**Introduction to word press, servers like wamp, bitnami e.tc, installing andconfiguring word press, understanding admin panel, working with posts and pages, usingeditor, text formatting with shortcuts, working with media-Adding, editing, deletingmediaelements,workingwithwidgets, menus.	P1,P2,P4	PQ,P6,PT
V	Working with themes-parent and child themes, using featured images, configuring settings,user and user roles and profiles, adding external links, extending word press with plug-ins.Customizing the site,changing theappearance of site using css , protecting word presswebsitefrom hackers.	PQ,P6,PT,**P8**	PQ,PT

Course:B.SC	Year:III	Semester:V
Subject	7A.WebApplications DevelopmentusingPHP&MYSQL	
Units	**1.** The Building blocks of PHP **2.** Working with Arrays **3.** Working with Forms **4.** Working with Files and Directories Working with Images **5.** Interacting with MySQL using PHP	
Duration	**60hours**	
LearningObjectives	1. Writesimpleprograms inPHP. 2. Understand how to use regular expressions, handle exceptions, and validate data usingPHP. 3. ApplyIn-Builtfunctions andCreate Userdefined functionsinPHPprogramming. 4. WritePHPscriptsto handleHTMLforms. 5. Writeprogramstocreatedynamicandinteractivewebbasedapplicationsusing PHPand MYSQL. 6. KnowhowtousePHPwithaMySQLdatabaseandcanwritedatabasedrivenwebpages.	

Units	U1	U2	U3	U4	U5
HoursSplit:Total: 60	14	12	10	14	10
Internal valuation:40marks	8	8	8	8	8

Resource Material:	**StudyMaterial(Handouts):** http://www.w3schools.com/PHP **Reference Books:** 1. JulieC.Meloni,SAMSTeachyourselfPHPMySQLandApache,PearsonEducation(2007). 2. StevenHolzner,PHP: TheCompleteReference,McGraw-Hill 3. RobinNixon,LearningPHP,MySQL,JavaScript,CSS&HTML5,ThirdEditionO'reilly,2014 4. XueBaiMichaelEkedahl,ThewebwarriorguidetoWebProgramming,Thomson(2006). 5. Webresources: e. http://www.codecademy.com/tracks/php f. http://www.w3schools.com/PHP g. http://www.tutorialpoint.com 6. Otherwebsourcessuggestedbytheteacherconcernedandthecollegelibrarianincludingreading material. **YouTube Links:** https://www.youtube.com/live/s-iza7kAXME?feature=share **Power Point Presentations:** https://www.slideshare.net/karmaeshop_prism/php-mysql-ppt **QuestionBank:** https://simpletocompute.files.wordpress.com/2021/07/php-important-questions.pdf

UNIT	DESCRIPTION	PEDAGOGY	INTERNAL EVALUATION
I	The Building blocks of PHP: Variables, Data Types, Operators and Expressions, Constants.Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output.Working with Functions: What is function?, Calling functions, Defining Functions, Returningthe values from User-Defined Functions, Variable Scope, Saving state between Function callswiththestatic statement, moreabout arguments.	P1,P2,P3	PQ,P6,PT
II	Working with Arrays: What are Arrays? Creating Arrays, Some Array-Related Functions.Working with Objects: Creating Objects, Object Instance Working with Strings, Dates andTime: Formatting strings with PHP, Investigating Strings with PHP, Manipulating StringswithPHP, UsingDate and TimeFunctions in PHP.	P1,P2,P3,P5	P6,PT
III	Working with Forms: Creating Forms, Accessing Form Input with User defined Arrays,Combining HTML andPHP code on a single Page, Using Hidden Fields to save state,Redirecting the user, Sending Mail on Form Submission, and Working with File Uploads.Working with Cookies and User Sessions: Introducing Cookies, Setting a Cookie with PHP,Session Function Overview, Starting a Session, Working with session variables, passingsessionIDsintheQueryString,DestroyingSessionsandUnsetting Variables,UsingSessionsin an Environment with Registered Users.	P1,P2,P3,P5	PQ,PT
IV	Working with Files and Directories: Including Files with inclue(), Validating Files, Creatingand Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files,Writing or Appending to a File, Working with Directories, Open Pipes to and from ProcessUsingpopen(),RunningCommandswithexec(),RunningCommandswithsystem()orpassthru(). Working with Images: Understanding the Image-Creation Process, Necessary Modificationsto PHP, Drawing a New Image, Getting Fancy with Pie Charts, Modifying Existing Images,ImageCreation from UserInput.	P1,P2,P4	PQ,P6,PT
V	Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, Connecting toMySQL with PHP, Working with MySQL Data. Creating an Online Address Book: PlanningandCreatingDatabaseTables,CreatingMenu,CreatingRecord AdditionMechanism,ViewingRecords,CreatingtheRecordDeletionMechanism,AddingSub-entitiestoaRecord	PQ,P6,PT,**P8**	PQ,PT