



**DnyanopasakShikshanMandal's**

**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher:** Surnar S.B.

**Department:**Computer Science

**Program:** BCS FY

**Subject:** Computer Science

**Course Code:** BCS-101

**Paper Title:** Basic of Computer Science

Unit Number	Unit Name	Topics	Unit-wise Outcome
1	Introduction to Computer and History	1.1 Definition of Computer 1.2 Basic Computer Organization 1.3 Characteristics of Computer 1.4 Generations of Computer 1.5 Types of Computer:- Microcomputer, Minicomputer, Mainframe Computer, Workstations, Client and Server	All information for computer and types of computer
2	Computer Peripherals & Memory	2.1 Input Devices :- Keyboard, Mouse, Trackball, Joystick, Light pen 2.2 Output Devices :- Monitor, Printer, Projector, Biometric Devices 2.3 Computer Memory :- RAM, ROM, Cache Memor	Input and output device all information and computer memory study
3	Storage Devices and Operating System	3.1 Compact Disk, Digital Versatile Disk 3.2 Hard Disk Drive 3.3 USB Flash Drive 3.4 Memory Card 3.5 Definition of operating System 3.6 Types of Operating System 3.7 Disk Operating System	All storage devices information and types of operating system study

		3.8 Windows Operating System 3.9 Linux Operating System	
4	Introduction to Computer Network & Internet	4.1 Definition of Network 4.2 Types of Network :- LAN,MAN,WAN 4.3 Data Transmission Modes 4.4 OSI Model 4.5 E-Mail 4.6 File Transfer Protocol 4.7 Web Browser 4.8 Types of Web Browser	Network ,Types of network,webbrowser,OSI Model , data transmission study

**Specify Course Outcome:**Through this paper Student should learn basic principles of computer. The paper is designed to aim at imparting basic level of Computer.

**Specify Program Outcome:**To learn Basic Function of Devices like I/O, HDD etc. To Understand the Fundamental of Software and Hardware. Understand the Concept of Operating System and Network.

**Signature of Teacher**



**Dnyanopasak Shikshan Mandal's**  
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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Siddqui Uzma

**Department:** Computer Science

**Program:** BCS FY

**Subject:** Computer Science

**Course Code:** BCS-102

**Paper Title:** Introduction to Programming  
Language Using C (Part 1)

Unit Number	Unit Name	Topics	Unit-wise Outcome
Unit 1	Programming languages	Machine language Assembly language High level languages Compilers and Interpreters	Language study
Unit 2	Introduction to Programming in C	History, Application Areas Algorithms, Flowcharts Structure of a C program C Tokens and Statement Unformatted I/O Statement	C overview
Unit 3	Controlling Statement	Decision Making Statement  If Statement If- else Statement Nested if –else Statement Else if Ladder Statement Switch Statement.  Loop Statement For Loop While Loop Do-while Loop Nested for Loop Break, goto and Continue	Statements overview  Study of If Statement If- else Statement Nested if –else Statement Else if Ladder Statement Switch Statement.  loops,else,while, While Loop Do-while Loop Nested for Loop Break, goto and Continue
Unit 4	Array and Structure	Arrays Array declaration, initialization One dimensional Array Two dimensional Array Passing arrays to functions	Array overview

**Specify Course Outcome:** It is general purpose and procedure oriented programming language. In which we are able to develop OS and MAC operating system, application software and programming languages. Programming Language are also used to build students logic for programming

**Specify Program Outcome:** understanding structure of programming languages, structure of c program.  
Understanding different keyword for making program.  
Analyzing programs using operators and control statement.  
To describe an array.  
Student are able to develop application software.

**Signature of Teacher**



**Dnyanopasak Shikshan Mandal's**  
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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Taur M.A.

**Department:** Computer Science

**Program:** BSc (CS) FY / BCA FY

**Subject:** Computer Science

**Course Code:** BCA-102

**Paper Title:** Office Automation

Unit Number	Unit Name	Topics	Unit-wise Outcome
Unit 1	Introduction to MS-Word.	Word 2010 Basics: - Opening screen of MS-word, Home menu- font tab, Paragraph tab, Styles tab, Editing options in MS-Word ,Insert menu- table tool ,Header and Footer tool , Mail-merge, Custom dictionary , Printing in MS-Word ,Creating Index in MS-Word.	<b>student will be able to understand the computer software, hardware, made available to simplify and automate a variety of office operations such as data processing, data manipulating and data presentation with various application those are presents in Microsoft office tools packages</b>
Unit 2	Working with MS-Excel.	Introduction to MS-Excel Formatting cells, Formatting columns, Row height , Merging ,Splitting columns and connecting the worksheets, Working with Formulas and Functions ,Creating charts ,Goal seek, Data validation,Conditional Formatting.	<b>student will be able to understand the computer software, hardware, made available to simplify and automate a variety of office operations such as data processing, data manipulating and data presentation with various application those are presents in Microsoft office tools packages</b>

Unit 3	Working with Microsoft power point.	<p>Opening Screen of MS PowerPoint</p> <p>Creating a new presentation based on template , Design template and blank presentation, Slide Transition,Custom Animation effects,Slide show ,Adding audio and video on slides.</p>	<p><b>student will be able to understand the computer software, hardware, made available to simplify and automate a variety of office operations such as data processing, data manipulating and data presentation with various application those are presents in Microsoft office tools packages</b></p>
Unit 4	Introduction to MS-Access.	<p>Opening screen of MS-Access ,Advantages and disadvantages of MS-Access , Performing Queries ,Generating the report ,Creating the database in Access ,Creating forms and adding new records in MS-Access.</p>	<p><b>student will be able to understand the computer software, hardware, made available to simplify and automate a variety of office operations such as data processing, data manipulating and data presentation with various application those are presents in Microsoft office tools packages</b></p>

**Specify Course Outcome: After completion of this course student will be able to understand the computer software, hardware, made available to simplify and automate a variety of office operations such as data processing, data manipulating and data presentation with various application those are presents in Microsoft office tools packages.**

**Specify Program Outcome:**

**Signature of Teacher**



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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Taur M.A.

**Department:** Computer Science

**Program:** BCA FY

**Subject:** Computer Science

**Course Code:** BCA-107

**Paper Title: Lab-Course : Office Automation**

Sr. Number	Title of program	Program-wise Outcome
1	Study of Word Opening screen	
2	Study of EXCEL Opening screen	
3	Study of PowerPoint Opening screen	
4	Study of Access Opening screen	
5	Study of Find and Replace Dialog Box in Microsoft Word	
6	Study of Page Setup Dialog Box	
7	Study of Table Formatting	
8	Study of Custom Dictionary & Go to Dialog Box	
9	Study of mail merge	
10	Study of creating charts.	

11	Study of border and shading dialog box	
12	Study of paragraph dialog box	
13	Working of Formulas in Excel	
14	Creating Presentation in Power Point	
15	Creating database file in Access	

**Specify Course Outcome:**

**Specify Program Outcome:**

**Signature of Teacher**





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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher: Agarmore J.R.**

**Department: Comp. Sci**

**Program: BCS FY**

**Subject:**

**Course Code: BCS.105.B**

**Paper Title: Communication Skills-I**

<b>Unit Number</b>	<b>Unit Name</b>	<b>Topics</b>	<b>Unit-wise Outcome</b>
1	Basic English grammar	Noun,verb,adjective,adverb	Proper use of basic English grammar for communication
2	Transformation of sentences	Simple to compound,compound to complex	Understand working of sentences in general communication
3	Writing skills	Essay writing,e-mail writing,resume	Understands the things for professional purpose.
4	Group discussion	Group discussion, seminar conference, meeting, interview	Useful for personality development.

- **Specify Course Outcome:** Students will be able to understand and apply knowledge of human communication and language processes as they occur across various contexts. Use technology to communicate effectively in various settings and contexts. Demonstrate appropriate and professional ethical behavior.

**Specify Program Outcome:**

**Signature of Teacher**



**Dnyanopasak Shikshan Mandal's**

**College of Arts, Commerce and Science, Parbhani**

*Pro-forma for program and course outcomes (2.6.1)*

**Name of Teacher: Shaikh Khaja Jamil Mohiuddin**

**Department: Computer Science**

**Program: BCS FY**

**Subject: COMPUTER SCIENCE**

**Course Code: BCS - 201**

**Paper Title: OPERATING SYSTEM**

<b>Unit Number</b>	<b>Unit Name</b>	<b>Topics</b>	<b>Unit-wise Outcome</b>
<b>UNIT – I</b>	<b>Introduction</b>	What Operating System Do – 1) User View 2) System View 3) Defining OS, Computer System Organization, What Operating System Do – 1) User View 2) System View 3) Defining OS, Computer System Organization, Extended Machine Concept, Operating System Structure, An Operating System Resource Manager	<b>To introduce basic concepts and functions of modern operating systems.</b>
<b>UNIT – II</b>	<b>System Structure</b>	Operating System Services, User Operating System Interface 1) Command Interpreter 2) GUI, System Boot,  System Calls, Types of System Calls 1) Process Control 2) File Management 3) Device Management 4) Information Maintenance 5) Communication 6) Protection	<b>To understand about OS services and system calls.</b>
<b>UNIT – III</b>	<b>Processor Management</b>	Process Concept 1) The Process 2) Process States 3) Process Control Block  Process Scheduling 1) Scheduling Queues 2) Schedulers 3) Context Switching,  Scheduling Algorithms	<b>To understand the scheduling of processes and threads.</b>

		1) FCFS 2) SJF 3) Priority Scheduling 4) Round-Robin Scheduling.	
<b>UNIT - IV</b>	<b>Memory Management</b>	Introduction, Contiguous Memory Allocation 1) Memory Allocation 2) Fragmentation  Paging 1) Basic Method 2) Hardware Support  Segmentation 1) Basic Method 2) Hardware Support.	<b>To understand various Memory Management techniques.</b>

**Specify Course Outcome:** Fundamental understanding of the role of Operating Systems.

**Specify Program Outcome:** Apply knowledge of mathematics, science and algorithm in solving Computer problems. Actual hands on technology to understand it's working.

**Signature of Teacher**

SHAIKH KHAJA MOHIUDDIN



**Dnyanopasak Shikshan Mandal's**  
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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Siddqui Uzma

**Department:** Computer Science

**Program:** BCS FY

**Subject:** Computer Science

**Course Code:** BCS-102

**Paper Title:** Introduction to Programming  
Language Using C (Part 1)

Unit Number	Unit Name	Topics	Unit-wise Outcome
Unit 1	Programming languages	Machine language Assembly language High level languages Compilers and Interpreters	Language study
Unit 2	Introduction to Programming in C	History, Application Areas Algorithms, Flowcharts Structure of a C program C Tokens and Statement Unformatted I/O Statement	C overview
Unit 3	Controlling Statement	Decision Making Statement  If Statement If- else Statement Nested if –else Statement Else if Ladder Statement Switch Statement.  Loop Statement For Loop While Loop Do-while Loop Nested for Loop Break, goto and Continue	Statements overview  Study of If Statement If- else Statement Nested if –else Statement Else if Ladder Statement Switch Statement.  loops,else,while, While Loop Do-while Loop Nested for Loop Break, goto and Continue
Unit 4	Array and Structure	Arrays Array declaration, initialization One dimensional Array Two dimensional Array Passing arrays to functions	Array overview

**Specify Course Outcome:** It is general purpose and procedure oriented programming language. In which we are able to develop OS and MAC operating system, application software and programming languages. Programming Language are also used to build students logic for programming

**Specify Program Outcome:** understanding structure of programming languages, structure of c program.  
Understanding different keyword for making program.  
Analyzing programs using operators and control statement.  
To describe an array.  
Student are able to develop application software.

**Signature of Teacher**



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*Pro-forma for program and course outcomes (2.6.1)*

**Name of Teacher: Surnar S.B.**

**Department: Computer Science**

**Program: BCS FY**

**Subject: Computer Science**

**Course Code: BCS-203**

**Paper Title: Database Management System**

<b>Unit Number</b>	<b>Unit Name</b>	<b>Topics</b>	<b>Unit-wise Outcome</b>
<b>1</b>	DBMS Concepts	1.1 What is Database? 1.2 Database Management System (DBMS) 1.3 Architecture of DBMS – Three level 1.4 Structure of DBMS 1.5 Entity, Attributes, type of relationships, 1.6 DBMS users 1.7 DBMS Facilities 1.8 Advantages and Disadvantages of DBMS 1.9 Data Models 1.10 Database Languages (DDL, DML, DCL, DQL, TCL)	Introduction for DBMS and database languages
<b>2</b>	Database System architectures	2.1 Centralized & Client Server Architectures a. Centralized Systems b. Client-Server Systems 2.2 Server System Architectures a. Transaction Server b. Data Server 2.3 Parallel Systems a. Speedup & Scale up b. Parallel Database Architectures i. Shared Memory ii. Shared Disk iii. Shared Nothing iv. Hierarchical 2.4 Distributed Systems a. An Example of Distributed Database	Database System architectures details study
<b>3</b>	Database Design & the ER Model	3.1 Overview of the Design Process a. Design Phases 3.2 The Entity-Relationship Model a. Entity Sets b. Relationship Sets c. Attributes	All design and ER model study

		3.3 Constraints a. Mapping Cardinalities b. Keys i. Entity Sets ii. Relationship Sets iii. Participation Constraints 3.4 Entity Relationship Diagrams	
<b>4</b>	Introduction to SQL	4.1 Background 4.2 Basic Data types in SQL 4.3 Types of SQL Commands (DDL, DML, DCL, DQL, TCL) 4.4 Basic Structure of SQL Queries 4.5 Table Creation, Data insertion, Data Updating, Data Selection 4.6 Changing Table Structure, 4.7 WHERE Clause, DISTINCT Clause, Using Column Aliases 4.8 Working with Views a. Creating View on Tables b. Creating View on Views c. Updating Views d. Altering Views 4.9 SQL Functions a. Single Row Functions (Character Functions, Case Manipulation, Character Manipulation Number Functions, Date Functions, Conversion Functions) b. Multiple Row Functions	Introduction to SQL and SQL Commands

**Specify Course Outcome:** To have basic understanding of database management system components.

**Specify Program Outcome:** students will be able to think of ER modelling and creation of own database schema.

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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher:** khairajani S.U

**Department:** Computer science

**Program:** Bcs Fy

**Subject:** computer science

**Course Code:** BCA-204 B

**Paper Title:** Elective : Desktop Publishing (DTP)

Unit Number	Unit Name	Topics	Unit-wise Outcome
UNIT I	PAGEMAKER	PAGEMAKER BASICS, StartingPageMaker.,PageMaker Window Elements,Viewing the Page,Toolbox,Using the Zoom Tool.	Build personal documents such as business cards and resumes.
UNIT II	WORKING WITH A PUBLICATION	Working With A Publication,Opening a Publication,Creating a New Document,Setting the Margins,Setting the Page Size,Setting the Page Orientation,The Page Icons. ,Displaying Master Pages and Master Page Items.,Inserting and Removing Pages, Inserting a Page, Removing a Page,Setting Page Numbers.,Saving a New Document.	Build business documents such as flyers and advertisements
UNIT III	INTRODUCTION TO ADOBE PHOTOSHOP	Basic Features of Adobe Photoshop,Various Page Mesurments, Use Of Various Tools, Layer Concepts, Basic Of Type, Control Settings & Placements.	Build a newsletter with graphics and draw objects



UNIT IV	IMAGE EDITING WITH ADOBE PHOTOSHOP	Images Contrast, Toning & Colour Correction, Colour Conversions, Cleaning, Repairing & Altering Images, Shadow, Relection & Dimention, Creating Background, Patterns, Brushes, Texture & Frames, Types Effects, Freehand.	Build document with using image editing
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**Specify Course Outcome:** the course will be basic page layout and design principles and integrating text and graphics to create attractive business publications.

**Specify Program Outcome:** This course will provide students the opportunity to learn to use basic features of desktop publishing software to create all types of publications: flyers, brochures, newsletters, and advertisements

**Signature of Teacher**

Khairajani S.U



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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher:** khairajani S.U  
**Computer Science**

**Department:**

**Program:** Bcs FY  
**Course Code:** BCS-207

**Subject:** Computer Application

**Paper Title:** Lab-Course : DBMS and DTP

No.	Topics	Outcome
1	Draw an opening Screen of PageMaker	desktop publishing software to create all types of publications: flyers, brochures, newsletters, and advertisements
2	Draw a toolbox in PageMaker.	
3	Draw Document Setting Dialog box	
4	Write Steps for creating new Document.	
5	Create Visiting Card in PageMaker	
6	Create Letter Head in PageMaker	
7	Draw an opening Screen of Photoshop.	
8	. Write Step for Create New Document in Photoshop.	
9	Creating Your Artwork in Photoshop	
10	. Change color Pattern of Image in Photoshop	
11	To Crop the image in Photoshop	

**Specify Course Outcome:**

- desktop publishing software to create all types of publications: flyers, brochures, newsletters, and advertisements. Included in the course will be basic page layout and design principles and integrating text and graphics to create attractive business publications.

**Specify Program Outcome:**

- Create personal documents such as business cards and resumes..

- Create business documents such as flyers and advertisements.
- Create a newsletter with graphics and draw objects..
- Create a course project illustrating Desktop Publishing techniques..

**Signature of Teacher**

Khairajani S.U



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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher: Agarmore J.R.**

**Department: Comp. Sci**

**Program: BCS FY SEM II**

**Subject: Comp Sci**

**Course Code: BCS.205.B**

**Paper Title: Communication Skill-II**

Unit Number	Unit Name	Topics	Unit-wise Outcome
1		Group discussion, seminar conference, meeting, interview	Useful for personality development.
2		e-mail and cover letter writing, resume and C.V, report writing	Understands the purpose of these things for professional purpose
3		Articles, prepositions, conjunctions, quantifier	Understands the basic things to improve the communication
4		Phrases, clauses, sentence: basic structure	Useful to improve basic grammar

**Specify Course Outcome:** Students will be able to understand and apply knowledge of human communication and language processes as they occur across various contexts. Use technology to communicate effectively in various settings and contexts.

**Specify Program Outcome:** Learning the basic grammar for proper communication. To enhance effective communication and interpersonal skills.

**Signature of Teacher**



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*Pro-forma for program and course outcomes (2.6.1)*

**Name of Teacher:** Mundhe A.S

**Department:** Computer science

**Program:** BCS SY

**Subject:** Computer science

**Course Code:** S3.1(Core Course)

**Paper Title:** Numerical Aptitude

<b>Unit Number</b>	<b>Unit Name</b>	<b>Topics</b>	<b>Unit-wise Outcome</b>
<b>1</b>	<b>Introduction of Number system</b>	Numbers: Types of numbers, Divisibility tests of numbers, Geometric progression, arithmetic progression, Relationship between Arithmetic progression and Geometric progression, HCF and LCM : Methods of calculating highest common factor and greatest common divisor, factorization method, Division method, Finding HCF and LCM more than two Numbers, LCM and HCF of fractions and decimal numbers, Applications of LCM and HCF.	Study the number system and how to calculate HCF and LCM
<b>2</b>	<b>Average, Problem on ages, Percentage, and Profit and Loss</b>	Average: Definition of average, Formulae and theoretical problem on average. Problem on ages: simultaneous equations and their applications Theoretical problems on ages, Theoretical problems on numbers. Percentage: Concept of percentage, Application of percentage, Results on populations, Result on depreciations, Theoretical problem on	Study the average percentage and profit and loss

		percentage ,Profit and Loss: Definition of cost price, selling price and profit, Formulae of profit and loss, Theoretical problems on profit and loss.	
<b>3</b>	<b>Percentage,</b>	Percentage: Concept of percentage, Application of percentage, Results on populations, Result on depreciations, Theoretical problem on percentage	Understanding the problem of percentage
<b>4</b>	<b>Time and Work, Time and Distance and Problems on Train</b>	Time and Work: Concept of time and work, Relationship between time and work, Theoretical problems on time and work Time and Distance: Concept of time and distance, Formulae of time and distance, Theoretical problems on time and distance. Problems on Train: Formulae of problems on train, Theoretical problems on train.	Study the theoretical problem on time and work, time and distance.
<b>5</b>	<b>Boat and streams, Allegations and Mixtures, and Calendar</b>	Boat and streams: Concept of boat and streams, Formulae of boat and streams, Allegations and Mixtures: Definition of allegation and mixtures, Rules of allegation's, Theoretical problems on mixture and allegation. Calendar: Concept of odd days, Leap years and ordinary years, Problems on Calendar.	Study the concept of boat and streams allegation, theoretical problems on this topic
<b>6</b>	<b>Simple and Compound Interest, Probability, and Permutations and combinations</b>	Simple and Compound Interest: Definition of simple and Compound interest, Formulae of simple and compound interest, Relationship between simple	To understand the concept of interest and compound interest and theoretical problem on this unit.

		<p>and compound interest, Theoretical problems on simple and compound interest. Probability: Definition of probability, Examples of performing a random experiment, Probability of occurrence of an event, Results on probability, Theoretical problems on probability. Permutations and combinations: Definition of permutations and combinations, Formulae of permutation and combinations, Relationship between permutation and combinations, Problems on permutations and combinations.</p>	<p>Similarly study of permutation and combination.</p>
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**Specify Course Outcome:** calculating the equation and to solve the problems simple interest, compound interest, average this all calculation are performing.

**Specify Program Outcome:** implement the all equation in comparative exams and also use the set, net, Banking exams.

**Signature of Teacher**



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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher:** Taur M.A.

**Department:** Computer Science

**Program:** BCA /BSc (CS) SY

**Subject:** Computer Science

**Course Code:** S3.CC.3

**Paper Title:** Data Structure

Unit Number	Unit Name	Topics	Unit-wise Outcome
Unit 1	Introduction	Introduction , Basic terminology, elementary data organization,Data structure ,Data structure operation , Algorithm complexity	Understand the concept of Dynamic memory management, data types, algorithms, Big O notation.
Unit 2	Array, Records and Pointers	Linear array,Representation of linear array in memory,Traversing linear array, Inserting and Deleting , Searching methods (Binary and linear search), Sorting Method (selection sort, bubble sort and Insertion sort)	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
Unit 3	Linked List	Introduction, Linked list , Representation of Linked list in memory ,Searching a linked list ,Memory allocation, Garbage collection, insertion & Deletion into Linked List, Two way Linked List	Understand basic data structures such as arrays, linked lists .
Unit 4	Stack	Introduction,stack,Representation of stack (sequential & linked) , Push & pop operation ,Arithmetic expression ,Infix, postfix & prefix ,Evaluation of postfix expression ,Recursion :factorial, Fibonacci	Understand basic data structures such as stack .



<b>Unit 5</b>	<b>Queue</b>	<b>Introduction, Queues ,Memory Representation of Queue.(sequential &amp; linked),Insertion &amp; Deletion on Queue. D-queue, Priority Queue</b>	<b>Understand basic data structures such queues.</b>
<b>Unit 6</b>	<b>Tree &amp; graph</b>	<b>Binary Tree, Types of Binary tree ,Traversing of binary tree(pre-order, post-order, inorder), Header Nodes, Threads , Graph,Representation of graph, Operations on graph</b>	<b>Solve problem involving graphs, trees and heaps</b>

**Specify Course Outcome:** Students develop knowledge of applications of data structures including the ability to implement algorithms for the creation, insertion, deletion, searching, and sorting of each data structure.

**Specify Program Outcome:** Students implement projects requiring the implementation of the above data structures.

**Signature of Teacher**



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*e:Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Taur M.A.

**Department:** Computer Science

**Program:** BSc(CS) SY / BCA SY

**Subject:** Computer Science

**Course Code:** S3.Lab2

**Paper Title:** Lab Course – 2 (Data Structure)

Sr.No.	Topic	
1.	Write a program traversing the array.	Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithm
2.	Write a program to insert the element into array at given position.	
3.	3 Write a program to delete the element from array.	
4.	Write a program to find element in the array using binary search.	
5.	Write a program to sort the array using for bubble sort.	
6.	Write a program to perform insertion sort on array.	
7.	8 Write a program to implement the selection sort on array.	
8.	Write a program to implement stack using linked list.	
9.	Write a program to implement stack using array.	
10.	Write a program to perform push & pop operations on stack.	
11.	Write a program to convert an infix expression into postfix expression.	

12.	Write a program to evaluation of postfix expression using stack.	
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**Specify Course Outcome:** Students develop knowledge of applications of data structures including the ability to implement algorithms for the creation, insertion, deletion, searching, and sorting of each data structure.

**Specify Program Outcome:** Students implement projects requiring the implementation of the above data structures.

**Signature of Teacher**Taur M A



**Dnyanopasak Shikshan Mandal's**

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*Pro-forma for program and course outcomes (2.6.1)*

**Name of Teacher: Shaikh Khaja Jamil Mohiuddin**

**Department: Computer Science**

**Program: BCS SY**

**Subject: COMPUTER SCIENCE**

**Course Code: S3.3(C C)**

**Paper Title: Object Oriented Concept Using C++**

<b>Unit Number</b>	<b>Unit Name</b>	<b>Topics</b>	<b>Unit-wise Outcome</b>
<b>UNIT – I</b>	<b>Introduction to OOPs</b>	Object Oriented Programming, Basic concepts of OOPS, Benefits of OOPs	<b>Understand the concepts of Object Oriented Programming.</b>
<b>UNIT – II</b>	<b>Introduction to C++</b>	Tokens Identifiers Keywords, Constant variable data types, Scope Resolution Operator, I/O statements Structure of C++ program, Control statements Looping, Type casting · Arrays, Pointer, References, Structure and Unions, Function: Call by value, Call by reference, Inline function, Default arguments, Function Overloading	<b>Design, implement, test and debug programs that use arrays, pointer, control structure and overloading in OOPs</b>
<b>UNIT – III</b>	<b>Class and Objects</b>	Define Class, Members Object, Visibility modes, Static members, Pointer to members, Pointer to objects, Constructors & Destructors, Friend Function	<b>Implementation of Class and Object</b>
<b>UNIT - IV</b>	<b>Operator Overloading and Type Conversions</b>	Concept of Operator Overloading, Unary & Binary operator overloading, Rules for Overloading, Type conversions – Basic to Class, Class to basic Class to Class	<b>Understanding the operator overloading and data type conversion.</b>
<b>UNIT – V</b>	<b>Inheritance and Polymorphism</b>	Concept of Inheritance, Types of Inheritance, Polymorphism, Virtual Base Classes, Pointer to Derived class, Virtual functions,	<b>Design and implementation of programs through inheriting data from</b>

		Rules for Virtual function, Pure Virtual functions	<b>one class to another class.</b>
<b>UNIT – VI</b>	<b>C++ I/O System</b>	C++ Streams Stream classes, Unformatted I/O operations, Formatted I/O operations, Manipulators, Opening and closing file, file modes, Updating file	<b>Understanding basic I/O stream and file handling</b>

**Specify Course Outcome:** To understand how C++ improve C with Object Oriented features.

**Specify Program Outcome:** To improve programming language and logic to solve problem.

**Signature of Teacher**

SHAIKH KHAJA MOHIUDDIN



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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Shaikh Khaja Jamil Mohiuddin

**Department:** Computer Science

**Program:** BCS SY

**Subject:** COMPUTER SCIENCE

**Course Code:** S3.Lab 2

**Paper Title:** Object Oriented Concept using C++

Unit Number	Unit Name	Topics	Unit-wise Outcome
		<p>Program to demonstrate Constant Variable.</p> <p>Program to demonstrate scope of Variable</p> <p>Program to demonstrate branching statement</p> <p>Program to demonstrate Looping statement</p> <p>Program to demonstrate simple class</p> <p>Program to demonstrate method parameter</p> <p>Program to demonstrate call by value.</p> <p>Program to demonstrate call by reference.</p> <p>Program to demonstrate pointer to object.</p> <p>Program to demonstrate function in c++</p> <p>Program to demonstrate factorial number using for loop.</p> <p>Program to demonstrate fibonacci sequence.</p> <p>Program to demonstrate sum of even or odd number.</p> <p>Program to demonstrate find area of circle.</p> <p>Program to demonstrate arithmetic operation using switch case.</p> <p>Program to demonstrate method overloading</p>	<p><b>Solve problem using Object Oriented Programming Concepts</b></p>

		<p>Program to demonstrate constructor</p> <p>Program to demonstrate destructor.</p> <p>Program to demonstrate static member</p> <p>Program to demonstrate Method overriding</p> <p>Program to demonstrate Final variable, Method and Final Class.</p> <p>Program to demonstrate Finilize method()</p> <p>Program to demonstrate Array and It's types.</p> <p>Program to demonstrate String class and it's method.</p> <p>Program to demonstrate String Buffer and it's method.</p> <p>Program to demonstrate inheritance and its Types</p> <p>Program to demonstrate Abstract method and Abstract Class.</p> <p>Program to demonstrate Polymorphism.</p> <p>Program to demonstrate Function overloading.</p> <p>Program to demonstrate Operator Overloading.</p>	
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**Specify Course Outcome:** Understand concept of object oriented programming.

**Specify Program Outcome:** To developed application software.

**Signature of Teacher**

SHAIKH KHAJA MOHIUDDIN



**Dnyanopasak Shikshan Mandal's**  
**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Siddqui Uzma

**Department:** Computer Science

**Program:** BCS SY

**Subject:** Computer Science

**Course Code:** S3.4

**Paper Title:** Data Communication

Unit Number	Unit Name	Topics	Unit-wise Outcome
Unit 1	Data Communication Concepts	A Communication model ,Data Communication Task ,Networks:- LAN, WAN , Wireless LAN Client Server model ,Peer to Peer Network Analog Signal Digital Signal	Communication task
Unit 2	Protocol Architecture / Multiplexing	The need for protocol architecture ,Network architecture,OSI Model,TCP/IP Reference Model,Multiplexing: FDM, TDM ,Connection Oriented & Connectionless services	Protocol & multiplexing study
Unit 3	Transmission Media and Network Topology	Transmission MediaMagnetic media.: Twisted Pair, Coaxial cable ,Fiber optics ,Topologies with advantages & disadvantages:-Bus, Ring, Star, Tree, Mesh. Infrared. Microwave.	Transmission media study
Unit 4	Ethernet & Circuit Switching and Packet Switching:	Switching : Circuit Switching, Packet Switching Message Switching,Ethernet: Overview of Ethernet , Base, 100 Base T,CSMA/CD	Switching techniques
Unit 5	Network Devices & Protocol	Network Devices Hub, Switch , RepeatersRouter , Gateway ,Bridge , Protocol: FTP,	Network devices



		HTTP, SMTP , DNS ,IP address	
Unit 6	Internet & Other Technologies	Internet: Internet & Intranet, Internet Services ,Providers, E- Mail URL ,ISDN, Token Ring FDDI	Techonoly devices

**Specify Course Outcome:** The fundamental **purpose** of **data communications** is to exchange information between user's computers, terminals and applications programs. In its simplest form **data communications** takes place between two devices that are directly connected by some form of point-to-point **transmission** medium

**Specify Program Outcome:** Show clear understanding of the basic concepts of **data communications** including the key aspects of networking

**Signature of Teacher**



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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher: Agarmore J.R.**

**Department: Comp. Sci**

**Program: BCS SY**

**Subject: Comp. Sci.**

**Course Code: S3.5**

**Paper Title: Multimedia**

Unit Number	Unit Name	Topics	Unit-wise Outcome
1	Multimedia element	Definition,element,application,global structure	Learning medias like audio,video,animation,text,graphics.
2	Data Compression	Storage space, coding requirement, basic compression technique	Learn the techniques to reduce the size of data in each format.
3	Optical Storage Media	Basic technology,video disk,WORMs,CD-ROM,DVD-ROM	Understands different optical storage medias which provides random access.
4	Sound/Audio	MIDI,Digital audio,audio file formats	Understands audio,its storage in digital form, & its different formats like mp3
5	Image/Graphics	Bitmaps,vector drawing,image formats,color	Understands images with its different formats.
6	Video & Animation	Broadcast video standards,T.V.,computer based animation	Learn how to broadcast video on T.V., learn softwares for animation.

- **Specify Course Outcome:** 1.Developed understanding of technical aspect of Multimedia Systems. 2. Understand various file formats for audio, video and text media. Develop various Multimedia Systems applicable in real time. 4. Design interactive multimedia software. 5. Apply various networking protocols for multimedia applications. 6. To evaluate multimedia application for its optimum performance.
- **Specify Program Outcome:** Understands multimedia elements to make applications more familiar to users.

**Signature of Teacher**



**Dnyanopasak Shikshan Mandal's**  
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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher: Agarmore J.R.**

**Department: Comp. Sci**

**Program: BA/BCom/BSc/MA/MSc FY/SY/TY**

**Subject: comp sci/app**

**Course Code: S3.LAB3**

**Paper Title: Multimedia**

<b>Sr. No.</b>	<b>Topics</b>	<b>Outcome</b>
1.	Study of Multimedia Elements	Learn different software like power point presentation used to make presentations, software like photoshop to apply different effects to image to make it attractive. And also understands the software like flash 5 for the artificial effect which used in different game in entertainment.
2.	Study of Opening Screen of Power Point	
3.	Study of Power Point Presentation of MM Elements	
4.	Study of Opening Screen of Adobe Photoshop	
5.	Study to change back ground color of image in Adobe Photoshop.	
6.	Study to Effect to back ground image in Adobe Photoshop.	
7.	Study to clear underexposed in Adobe Photoshop.	
8.	Study to apply canvas effect in Adobe Photoshop.	
9.	Study to enlarge your image with minimal visible Loss.	
10.	Study to create user defined brush in Adobe Photoshop.	
11.	Study to apply sketch effect in Adobe Photoshop.	
12.	Study to apply wind effect to text in Adobe Photoshop.	

13.	Study to create bouncing ball in Macromedia Flash.	
14.	Study to create Rolling ball in Macromedia Flash.	

**Specify Course Outcome:** learn different software like power point presentation used to make presentations, software like photoshop to apply different effects to image to make it attractive. And also understands the software like flash 5 for the artificial effect which used in different game in entertainment.

**Specify Program Outcome:** learn use of all software to make application softwares for different areas.

**Signature of Teacher**



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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Siddqui Uzma

**Department:** Computer Science

**Program:** BCS SY SEM II

**Subject:** Computer Science

**Course Code:** S3..6

**Paper Title:** S3.6 (Skill Enhancement Course PC)

Number	Program	Pro Outcome
1	Study of Hardware Component on Motherboard	Study of hardware components and detail study of pc installation
2	SD, DDR, DDR1, DDR2, DDR3	
3	Study of Assemble a Computer System.	
4	Study of Installing Windows 8 OS	
5	Study of Networking Devices – Hub, Switch, Router	
6	Troubleshoot	
7	Installing any Local Printer	
8	To share a printer	
9	To share a Folder/Map a Drive	
10	Study of BIOS options	
11	Study of Installing Windows 8 OS	

12	Study of Windows Firewall and Windows Defender
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**Specify Course Outcome:** understand the fundamental hardware components that make up a computer's hardware and the role of each of these components understand the difference between an operating system and an application program, and what each is used for in a computer

**Specify Program Outcome:** This course enables the students to understand the fundamentals of PC assembly. Learning **Outcomes:** The student will assemble / **setup** ...

**Signature of Teacher**



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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Taur M.A.

**Department:** Computer Science

**Program:** BCS SY.

**Subject:** Computer Science

**Course Code:** S4.AEC.1

**Paper Title:** Logical Reasoning

Unit Number	Unit Name	Topics	Unit-wise Outcome
Unit 1	Series, Analogy and Classification	A Series: Types of series, Alphabet series, Alpha numeric series, Examples on continues pattern series.  B Analogy: Completing the Analogous Pair, Direct/Simple Analogy, Choosing the Analogous Pair, Double Analogy, Number analogy, Alphabet analogy, Correlation between letters/numbers.  C Classification: Choosing the odd word, Choosing the odd numeral, Choosing the odd letter group.	Understand the basic concepts of LOGICAL REASONING Skills
Unit 2	Coding-Decoding		
Unit 3	Blood Relation	A Introduction to relations B Concepts of deciphering relations based problems  C Problems on deciphering jumbled up descriptions D Relation puzzle E Coded relation	Identify logical relations among statements; and analyze logically complex statements into their truth-functional or quantificational components.

Unit 4	Seating or Placing Arrangement	Problems based on linear and circular based arrangement	
Unit 5	Direction Sense Test	A Introduction B Problems based on angular changes in direction Problems on Shadows D General Problems based on Pythagoras Theorem	Distinguish the basic elements of arguments and recognize the different types of arguments.
Unit 6	Syllogism and Data Sufficiency	A Syllogism: Introduction of logic, Rules of syllogism, Two statement problem, Three statement problem B Data Sufficiency: Problems of Data sufficiency based on all Chapters.	Symbolize natural language statements in the language of propositional and predicate logic.

**Specify Course Outcome: This course enables students to develop their ability to reason by introducing them to elements of formal reasoning. The primary focus will be on recognizing the logical structure of arguments. The primary focus will be on recognizing the logical structure of arguments.**

**Program Outcome:.. Studying logic also advances understanding of symbolic systems generally and in particular those of mathematics and computer science. Logic, then, occupies the ground that is intermediate between literary and quantitative analysis.**

**Signature of Teacher**





Dnyanopasak Shikshan Mandal's

College of Arts, Commerce and Science, Parbhani

Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: Shaikh Khaja Jamil Mohiuddin

Department: Computer Science

Program: BCS SY

Subject: COMPUTER SCIENCE

Course Code: S4.2.CC

Paper Title: RDBMS

Unit Number	Unit Name	Topics	Unit-wise Outcome
UNIT – I	Introduction and Basic Concepts	Structure of DBMS, Advantages and Disadvantages of DBMS, Users of DBMS, Relational Database: Entities, Attributes and Domains, Tuples, Relations and their schemes.	Understand basic knowledge about database.
UNIT – II	SQL Statements & Working With Tables	What is SQL?, Types of SQL Commands (DDL, DML, DQL, DCL, Transaction Control Commands, Data types in SQL, Creating Tables, Selecting from tables, WHERE Clause, Selecting from tables, DISTINCT Clause, Column aliasing, Manipulation Table data, Altering Table structure, Data Constraints: Unique, Not Null, Primary Key, Foreign Key, Check, Default Constraint	To insert, update, delete data as well as secure data through constraints
UNIT – III	Operators & SQL Functions & Views	Arithmetic Operators, Relational Operators, Comparison Operators BETWEEN , IN, LIKE, IS NULL, LOGICAL Operators: AND OR NOT, SQL Functions: Single, Multiple Row Functions, Single Row Character , Single Row Number, Single Row Date, Single Row Conversion, Single Row General Functions, Multiple Row Functions, Views	To perform all about retrieving data from databases using some operators.
UNIT - IV	Sorting & Grouping Data and Joining	What is Sorting?, ORDER BY & ORDER BY DESC Clauses,	We can joining, grouping and sorting

	<b>Tables &amp; Subqueries in ORACLE</b>	GROUP BY & GROUP BY HAVING Clauses,What is Join?, Join Styles: Theta , ANSI , Using clause, Types of Joins: Equi Joins, Non Equi Join, Outer Join: Left, Right, Full Self Join Cross Join, Joining three tables,Subqueries & its types	<b>various data through some commands.</b>
<b>UNIT – V</b>	<b>Introduction to PL/SQL</b>	PL/SQL Overview,Declarations Section,Executable Commands Section,Exception Handling Section	<b>Execute a program or group of command using pl/sql block</b>
<b>UNIT – VI</b>	<b>Database Triggers &amp; Cursors</b>	What are Triggers? Triggers Syntax,Types of triggers,Row Level Statement Level, Before , After Instead of Triggers,Enabling and Disabling Triggers,Replacing and Dropping Triggers,Working with Cursor,% TYPE Variable % ROWTYPE Variable	<b>Generating events through triggers and perform task at background.</b>

**Specify Course Outcome:** Understand and effectively explain the underlying concepts of RDBMS. Populate and query a database using SQL DML/DDDL/DQL/DCL/TCL and database constraints.

**Specify Program Outcome:** Students are able to prepare some application through java as a front end and RDBMS as backend.

**Signature of Teacher**

SHAIKH KHAJA MOHIUDDIN



**Dnyanopasak Shikshan Mandal's**

**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher: Shaikh Khaja Jamil Mohiuddin**

**Department: Computer Science**

**Program: BCS SY**

**Subject: COMPUTER SCIENCE**

**Course Code: S4.Lab1**

**Paper Title: RDBMS**

Unit Number	Unit Name	Topics	Unit-wise Outcome
		What is SQL? Types of SQL Commands Study of Datatypes in ORACLE Creating Tables & Retrieving , Manipulating Data from tables Study of Altering Tables IN ORACLE Study of Data Constraints in ORACLE Study of Operators Study of SQL Functions Study of Views in ORACLE Study of Joining Tables in ORACLE Study of Subqueries in ORACLE Study of in PL/SQL Blocks in ORACLE Study of in Triggers in ORACLE Study of in Cursors in ORACLE	<b>Study and demonstrate the various query i.e DDL/DML/DCL/DQL/TCL on database</b>

**Specify Course Outcome:** Students can perform to insertion, updation, deletion and retrieving data in database.

**Specify Program Outcome:** Learning Java and Relational Database Management System so that to Implementation of various application with the help of front end and backend.

**Signature of Teacher**

SHAIKH KHAJA MOHIUDDIN



**DnyanopasakShikshanMandal's**  
**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher: Agarmore J.R.**

**Department: Comp. Sci**

**Program: BCS SY SEM IV**

**Subject: Comp. Sci**

**Course Code: S4.3(CC)**

**Paper Title: Java programming**

Unit Number	Unit Name	Topics	Unit-wise Outcome
1		Java history, features, how java differ from c,c++,JVM, java environment, java programming structure, installing java	Understands java environment
2		Types of comments, java tokens- reserve keywords, identifiers, literals, operators, variable, constants, type casting, control statements, branching statements, looping statements, break and continue statements	To understand how to design, implement, test, debug, and document programs that use basic data types and computation, simple I/O, conditional and control structures, string handling and functions.
3		Creating applet, it's lifecycle, passing parameter to applet, working with graphics	Understands internet computing
4		Defining class, fields, method creating object, visibility modes, this keyword, method parameter, method overloading, finalize method, method overriding, abstract method, class	To understand the importance of Classes & objects along with constructors, Arrays and Vectors.
5		Define and implement interface, inner class, package, create package, access package, exception handling	Discuss the principles of inheritance, interface and packages and demonstrate through problem analysis assignments how they relate to the design of methods, abstract classes and interfaces and packages.
6		String class, string buffer, stream buffer, types of stream, byte stream classes, character stream classes, file classes	Understands string and buffer classes

**Specify Course Outcome:**

1. To understand how to design, implement, test, debug, and document programs that use basic data types and computation, simple I/O, conditional and control structures, string handling and functions.
2. To understand the importance of Classes & objects along with constructors, Arrays and Vectors.
3. Discuss the principles of inheritance, interface and packages and demonstrate through problem analysis assignments how they relate to the design of methods, abstract classes and interfaces and packages.
4. To understand importance of Multi-threading & different exception handling mechanisms.
5. To learn experience of designing, implementing, testing, and debugging graphical user interfaces in Java using applet and AWT that respond to different user events.
6. To understand Java Swings for designing GUI applications based on MVC architecture.

**Specify Program Outcome:**

1. Implement Object Oriented programming concept using basic syntaxes of control Structures, strings and function for developing skills of logic building activity.
2. Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem
3. Demonstrates how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved.
4. Demonstrate understanding and use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.

**Signature of Teacher**

AGARMORE J.R.



**DnyanopasakShikshanMandal's**

**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher: Agarmore J.R.**

**Department: Comp. Sci/App**

**Program: BCA/BCS SY**

**Subject: Comp Sci/Comp App**

**Course Code: S4.Lab-2**

**Paper Title: Java(PR)**

Sr.No.	Topic	
14.	Program to demonstrate Constant Variable.	<b>13.</b> To understand how to design, implement, test, debug, and document programs that use basic data types and computation, simple I/O, conditional and control structures, string handling and functions. 2. To understand the importance of Classes & objects along with constructors, Arrays and Vectors. 3. Discuss the principles of inheritance, interface and packages and demonstrate through problem analysis assignments how they relate to the design of methods, abstract classes and interfaces and packages.
15.	Program to demonstrate scope of Variable	
16.	Program to demonstrate branching statement	
17.	Program to demonstrate Looping statement	
18.	Program to demonstrate simple class	
19.	Program to demonstrate method parameter	
20.	Program to demonstrate method overloading	
21.	Program to demonstrate constructor	
22.	Program to demonstrate static member	
23.	Program to demonstrate Method overriding	
24.	Program to demonstrate Final variable, Method and Final Class.	
25.	Program to demonstrate Finilize method()	
26.	Program to demonstrate Array and It's types.	
27.	Program to demonstrate String class and it's method.	
28.	Program to demonstrate String Buffer and it's method.	
29.	Program to demonstrate inheritance and its Types	
30.	Program to demonstrate Abstract method and Abstract	

31.	Class.	
32.	Program to demonstrate Multiple catch statement	
33.	Program to demonstrate finally clause	
34.	Program to demonstrate package	
35.	Program to demonstrate interface	
36.	Program to demonstrate Applet life cycle	
37.	Program to demonstrate Finilize method()	

- **Specify Course Outcome:**

- 1.To understand how to design, implement, test, debug, and document programs that use basic data types and computation, simple I/O, conditional and control structures, string handling and functions.
2. To understand the importance of Classes & objects along with constructors, Arrays and Vectors.
3. Discuss the principles of inheritance, interface and packages and demonstrate though problem analysis assignments how they relate to the design of methods, abstract classes and interfaces and packages.
4. To learn experience of designing, implementing, testing, and debugging graphical user interfaces in Java using applet and AWT that respond to different user events. 6. To understand Java Swings for designing GUI applications based on MVC architecture.

- **Specify Program Outcome**

1. Implement Object Oriented programming concept using basic syntaxes of control Structures, strings and function for developing skills of logic building activity.
2. Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem
3. Demonstrates how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved.
4. Demonstrate understanding and use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.

**Signature of Teacher**



Dnyanopasak Shikshan Mandal's

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Pro-forma for program and course outcomes (2.6.1)

Program: BCSSY Subject: Computer Application

Course Code: S4.5

Paper Title: Elective-I (Computer Graphics)

Unit Number	Unit Name	Topics	Unit-wise Outcome
1	Introduction to computer graphics	Introduction	Awareness about computer graphics and display devices.
		Advantages of CG	
		Applications of CG	
		Display Devices	
		Cathode ray tubes	
		Color CRT monitors	
		Direct View Storage Tube	
2	Raster Scan graphics & Transformation	Line drawing algorithm	Explain raster scan graphics and how transformation takes place
		Digital Differential Analyzers	
		Bresenham's Line algorithms	
3	Transformation	Two dimensional transformation	Knowledge about various transformation techniques.
		Matrix representation	
		Translation	
		Rotation	
		Scaling	
		Reflection	
		Shearing	
4	Segmented Display Files	Segment table	Detail discussion on segmented display files.
		Functions for segmenting display file	
		Posting & unposting segments	
		Segment naming scheme	
		Default error conditions	
		Appending to segments	
5	Clipping window & display file Compilation	2-D clipping	Exposure of clipping window and display file compilation, storage allocation, reconstruction.
		Simple visibility algorithm	
		End point codes	
		Midpoint subdivision algorithm	
		Display File Compiler	
		Refresh concurrent with reconstruction	
		Free storage allocation	
		Display file structure	
6	Geometrics Model &	Geometric modeling	
		Symbols & instances	



	<b>Graphics package</b>	Implementation of Instance transformation	Study geometric model and graphics package like ground rules for graphics s/w design and graphics primitives.
		Ground rules for graphics s/w design	
		Function domains	
		Graphics primitives	

**Specify Course Outcome:**

- Understanding the core concepts of computer graphics.
- Critical understanding of the theory of 2D and 3D transformations, projection and viewing
- Elucidate raster scan graphics and various transformation techniques.
- Exposure of segmentd display file, clipping window and display file compilation, storage allocation, reconstruction.
- Learning geometric model and graphics package like ground rules for graphics s/w design and graphics primitives.

**Specify Program Outcome:**

- Ability to think and plan critically in three dimensions
- General critical analysis, evaluation and synthesis of ideas for the design of their project
- Representation of, planning for, and solution of problems
- Ability to draw upon a range of sources when making decisions in their project work

**Signature of Teacher**

Deshmukh G.V.



**Dnyanopasak Shikshan Mandal's**

**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*  
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**Program:** BCSSY **Subject:** **Course Code:** S4.Lab 3 Elective -I

**Paper Title:** Lab Course – 3 (Elective) Computer Graphics

Unit Number	Topics	Unit-wise outcome
1	Study of Graphics Library Function in C	Able to understand basic concepts of computer graphics with 2D & 3D. Implementation of algorithms, transformations etc in C programming language.
2	draw a line, circle, rectangle etc.	
3	draw multiple shapes using loops.	
4	DDA algorithm.	
5	Bresenhams Algorithms.	
6	Integer Bresenhams Algorithms.	
7	General Bresenhams Algorithms.	
8	Simple Visibility mode.	
9	Mid-Point sub division algorithm.	
10	Translation Transformation.	
11	Rotation Transformation	
12	Scaling Transformation	
13	Shearing Transformation	
14	Reflection Transformation	
15	setfillstyle and floodfill functions.	
16	getimage and putimage function.	
17	simple animations.	
18	setting font style, font name and size.	

**Specify Course Outcome:**

- Understanding the core concepts of computer graphics.
- Critical understanding of the theory of 2D and 3D transformations, projection and viewing
- Ability to find & combine relevant sources and synthesise designs
- Practical skills in graphics programming including scene graph programming and I/O processing

**Specify Program Outcome:**

- Ability to think and plan critically in three dimensions
- General critical analysis, evaluation and synthesis of ideas for the design of their project
- Representation of, planning for, and solution of problems
- Ability to draw upon a range of sources when making decisions in their project work

**Signature of Teacher**

Deshmukh G.V.



**Dnyanopasak Shikshan Mandal's**  
**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*  
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**Program:** BCSTY(V-Sem)      **Subject:** Computer Science      **Course Code:**S5.CC.1

**Paper Title:** Windows Programming with C#.NET

Unit Number	Unit Name	Topics	Unit-wise Outcome
1	<b>Introduction</b>	Introduction to .Net Technology & Framework	Understanding of the DOTNET framework.
		.Net Architecture	
		Common Language Runtime(CLR)	
		IDE Components	
		Intellisense	
		Project Types	
		Java vs C#	
2	<b>Windows Applications and Windows Controls</b>	Important Classes Used in Windows	Implementing Windows controls for creation of windows applications.
		Creating and Customizing Windows Form	
		TextBox and Label Control	
		Button, CheckBox and RadioButton	
		Listbox and ComboBox control	
Menus and Dialog Boxes			
3	<b>Functions, Arrays and Strings</b>	C# Function	Use of functions, arrays and Strings in programs
		Call by Value & Call by Reference	
		Out Parameter	
		Array and ArrayList class	
		Jagged Array	
		String Class	
		Properties	

4	<b>Properties, Indexers, Delegates &amp; Events</b>	Indexers	Understanding and using the various characteristics of c# like properties, indexers, delegates, events.
		Delegates	
		Multicast Delegates	
		Custom events	
5	<b>Namespace, interface &amp; Exception handling</b>	Creating & using Namespace(DLL library)	Creating and using dynamic link libraries, and handling exceptions.
		Creating & using interface	
		Try Catch Block	
		Using Finally Block	
		Custom Exception	
6	<b>Database Connectivity</b>	Introduction ADO.Net	Creating application using ADO.Net.
		Advantages of ADO.Net	
		Developing a Simple ADO.NET Based	
		Retrieving & Updating Data From Tables	
		Disconnected Data Access Through Dataset Objects	

**Specify Course Outcome:**

- Enhance the knowledge on basic concepts of object oriented programming.
- Impart the knowledge of CLR and DOTNET framework.
- Become skilled at C# core as well as windows programming.
- Able to create application using ADO.net.

**Specify Program Outcome:**

- Get adequate knowledge about C#.
- Expertise in core as well as windows programming.
- Enhance the concepts of OOPs.

**Signature of Teacher**

Deshmukh G.V.



**Dnyanopasak Shikshan Mandal's**

**College of Arts, Commerce and Science, Parbhani**

*Pro-forma for program and course outcomes (2.6.1)*

**Program:** BCSTY(VI-Sem) +BCATY(VI-Sem)

**Subject:** Computer Science **Course Code:** S5.Lab3

**Paper Title:** Windows Programming with C#.NET

Unit Number	Topics	Outcome
1	Creating simple windows application.	Understanding DOTNET framework and various characteristics of C#. Understanding of various Windows controls. Use of DOTNET framework for developing console and Windows applications.
2	Text Box and Button control.	
3	List Box and Combo Box Control.	
4	Designing Menus.	
5	Using dialog boxes.	
6	Functions.	
7	Array.	
8	Creating properties.	
9	Creating Indexers.	
10	Creating Delegates.	
11	Creating custom namespace.	
12	Handling exception.	
13	Creating and using custom exception.	
14	Accessing data from database.	
15	Modifying data from database.	

**Specify Course Outcome:**

- Expertise in windows programming.
- Develop applications using ADO.NET.

**Specify Program Outcome:**

- Understand the DOTNET framework
- Familiarity in the concept of developing window application.
- Develop background knowledge as well as core expertise in C#.
- Build a console and windows application.
- Develop applications using ADO.Net.

**Signature of Teacher**

Deshmukh G.V.



**Dnyanopasak Shikshan Mandal's**  
**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Siddqui Uzma

**Department:** Computer Science

**Program:** BCS TY

**Subject:** Computer Science

**Course Code:** S5.CC.2

**Paper Title:** Python Programming

Unit Number	Unit Name	Topics	Unit-wise Outcome
Unit 1	Introduction	Introduction to Python, Features of python , Python Interpreter , Python installation	Python overview
Unit 2	Data types and control structures	Operators (unary, arithmetic, etc.) Data types, variables, expressions, and statements, Assignment statements , Strings and string operations, Control Structures: loops and decision	Structure of statement
Unit 3	Modularization and Classes	Standard modules 1, Packages, Defining Classes , Defining functions ,Functions and arguments (signature)	Study of classes
Unit 4	Exceptions and data structures	Data Structures (array, List, Dictionary) , Exception Raising , Exception Handling , Error processing	Study of Exception array error
Unit 5	Object Oriented Design	Programming types , Object Oriented Programming , Inheritance , Polymorphism	Oop's overview
Unit 6	Database Connectivity and Networking	Getting MySQL for python , Connecting with database, Passing Query to MySQL,Networking	Connectivity study

**Specify Course Outcome:** To understand the basic concept of Python.. gain understanding of web based console & windows programming. teach student application development technology and understand quick development concept with less code.

**Specify Program Outcome:** To develop background knowledge as well as core expertise in Python, To understand the console based application and provide the knowledge creatingweb based applications.,To learn the object oriented concepts.

**Signature of Teacher**



**Dnyanopasak Shikshan Mandal's**  
**College of Arts, Commerce and Science, Parbhani**

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**Pro-forma for program and course outcomes (2.6.1)**

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**Name of Teacher:** Siddqui Uzma

**Department:** Computer Science

**Program:** BSc/MSc FY/SY/TY

**Subject:** Computer Science

**Course Code:** S5.Lab.2

**Paper Title:** Python Programming

Number	Program	Pro Outcome
1	1 Program to demonstrate Constant Variable.	Understand the console based application and provide the knowledge creating web based applications.,To learn the object oriented concepts through python .
2	Program to demonstrate scope of Variable	
3	Program to demonstrate branching statement.	
4	Program to demonstrate Looping statement	
5	Program to demonstrate simple class	
6	Program to demonstrate String class and it's method.	
7	Program to demonstrate String Buffer and it's method.	
8	Program to demonstrate inheritance and its Types	



9	Program to demonstrate package
10	Study of BIOS options
11	Program to demonstrate polymorphism
12	Program to demonstrate networking

**Specify Course Outcome:** To understand the basic concept of Python.. gain understanding of web based console & windows programming. teach student application development technology and understand quick development concept with less code.

**Specify Program Outcome:** To develop background knowledge as well as core expertise in Python, To understand the console based application and provide the knowledge creating web based applications.,To learn the object oriented concepts.

**Signature of Teacher**



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*Pro-forma for program and course outcomes (2.6.1)*

**Name of Teacher: Surnar S.B.**

**Department: Computer Science**

**Program: BCSTY Subject: Computer Science**

**Course Code: S5.CC.3**

**Paper Title: JSP and Servlet**

<b>Unit Number</b>	<b>Unit Name</b>	<b>Topics</b>	<b>Unit-wise Outcome</b>
<b>1</b>	Introduction	1.1 A Servlets jobs 1.2 Why build web pages dynamically? 1.3 Advantages of Servlets over traditional CGI 1.4 The Role of JSP 1.5 Installing & Configuring the JDK & Apache Tomcat 1.6 Basic Servlet structure 1.7 A Servlet that generate plain text, A Servlet that generate HTML text 1.8 A Servlet package 1.9 The Servlet life cycle 1.10 Servlet debugging	Introduction to Servlet and all information for servlet Apache Tomcat install and configure
<b>2</b>	Handling Client Request: Form DATA, Cookies and session tracking	2.1 Reading Form Data from Servlet 2.2 Example: Reading three parameter 2.3 Example: Reading all parameter 2.4 Filtering String for HTML –specific character, 2.5 Benefits of cookies and Some problem with cookies 2.6 Sending and receiving cookies 2.7 Using cooking to detect first time visitors,	All information for cookies

		2.8 The need for session tracking, Session tracking basics, Session tracking API, 2.9 A Servlets that shows per client access counts	
3	Overview of JSP technology and Invoking Java code with JSP scripting elements & The JSP page directives	3.1 The Need and benefits of JSP 3.2 Basic syntax od JSP 3.3 Invoking Java code from JSP, Using JSP Expression 3.4 Using Scriptlets to make parts of the JSP page conditional 3.5 The <i>Import</i> attribute 3.6 The <i>Import</i> attribute 3.7 The <i>contentType</i> and <i>pageEncoding</i> attribute 3.8 Generating Excel Spreadsheet 3.9 The <i>session</i> attribute 3.10 The <i>isELIgnored</i> attribute 3.11 The <i>errorPage</i> and <i>isErrorPage</i> attribute	Overview of JSP technology and Invoking Java code with JSP syntax and example and excel knowledge
4	Including files and applets in JSP pages and Using Java Beans components in JSP documents	4.1 Including pages at request time: the <i>jsp:include</i> action 4.2 Including pages at page translation time: the <i>include</i> directive 4.3 Forwarding request with <i>jsp:Forward</i> 4.4 Including applets for java plug-in 4.5 Why use Beans? 4.6 What are Beans? 4.7 Using Beans: basic task, Example: <i>StrignBean</i> .	applets in JSP pages and Using Java Beans in detail study
5	Integrating Servlets and JSP, Accessing database with JDBC	5.1 Understanding the need for Model View Controller 5.2 MVC Framework, Architecture of approach 5.3 Implementing MVC with <i>RequestDispathcher</i> 5.4 Summarizing MVC code	Accessing database with JDBC, MVC Framework Implementing
6	Accessing database with JDBC	6.1 Using JDBC in General 6.2 Basic JDBC Examples 6.3 Insert, Update, Delete and searching in database,	Accessing database with JDBC using different command using JDBC Utilities

		6.4 Simplifying Database Access with JDBC Utilities, 6.5 Using Prepared Statements	
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**Specify Course Outcome:** Awareness of existing demanding trends in IT industry in order to get placement & research Understand the JSP, Servlet and MVC architecture.

Install and use appropriate tools for JSP and Servlet development, including IDE, Web Server etc. Build user interfaces with JSP, Servlet Java Beans and MVC and more.

**Specify Program Outcome:** Awareness of existing demanding trends in IT industry in order to get placement &

research Understand the JSP, Servlet and MVC architecture. Install and use appropriate tools for JSP and Servlet development, including IDE,

Web Server etc. Build user interfaces with JSP, Servlet Java Beans and MVC and more.

**Signature of Teacher**



**Dnyanopasak Shikshan Mandal's**

**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher:** khairajani S.U

**Department:** Computer science

**Program:** Bcs TY

**Subject:** computer science

**Course Code:** S5.Lab 3

**Paper Title:** Java Server Pages(JSP) and Servlet

no	Program	pro Outcome
1	Write a program for demonstration of simple servlet & JSP page	build Many simple web web based application dynamic websites that you can upload on servers.
2	Write a program for demonstration of Servlet life cycle.	
3	Write a program to create a Servlet using package	
4	Write a JSP Page to display response in excel sheet.	
5	Write a servlet to read the form data? Design the html form for it	
6	Write a JSP pages to include pages at translation time.	
7	Write a servlet to read all parameter & their values from html form.	
8	Write a program for filtering string for html specific characters	
9	Write a servlet for demonstration of sending & receiving cookies	
10	Write a JSP page to demonstrate errorPage & isErrorPage attributes.	
11	Write a servlet to display lottery numbers for demonstration of servlet life cycle.	
12	Write a JSP Page for including applet. Design the applet for it.	
13	Write a servlet to display page access count using cookie.	
14	Write a JSP Page for demonstration of import attribute.	
15	Write a program for creating beans & using beans in JSP.	

**Specify Course Outcome:**

Ability to build many simple web based application or dynamic websites that you can upload on servers.

**Specify Program Outcome:** introduction to windows 7

**Signature of Teacher**

Khairajani S.U



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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher: Surnar S.B.**

**Department: Computer Science**

**Program: BCSTY**

**Subject: Computer Science**

**Course Code: S5.CC.4**

**Paper Title: Project**

<b>Topics</b>	<b>Outcome</b>
Project	This program aims at developing tremendous Computer Skills to the learners. The program will allow Learners to gain knowledge about computers in an "ALL AROUND" fashion; which will include both hardware and software components. The program will develop programming and networking skills of the learners. Learners of the BCA Program will have theoretical as well as practical knowledge and demonstrate application of technical principles in a professional work setting.

**Specify Course Outcome:** In-depth understanding of various concepts of C language. Ability to read, understand and trace the execution of programs. • Skill to debug a program. • Skill to write program code in C to solve real world problems.

**Specify Program Outcome:** To provide thorough understanding of nature, scope and application of computer and computer languages • To develop interdisciplinary approach among the students

**Signature of Teacher**



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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Taur M.A.

**Department:** Computer Science

**Program:** Bsc (CS) TY

**Subject:** Computer Science

**Course Code:** S5.CC.5 (Core Course Elective – II)

**Paper Title:** Mobile Communication

Unit Number	Unit Name	Topics	Unit-wise Outcome
Unit 1	Introduction	Application , A Short History Of Wireless Communication,A Market For Mobile Communication ,Some Open Research Topic, A Simplified Reference Model	Evaluate the usability of mobile devices such as smart phones
Unit 2	Introduction To Cellular Mobile System	Introduction ,Basic Cellular System , Performance Criteria ,Operation Of Cellular System,Planning A Cellular System ,Analog Cellular System	Select appropriate wireless technologies in commercial and enterprise applications.
Unit 3	Medium Access Control	Motivation For Specialized MAC,SDMA , FDMA, TDMA, CDMA	Assess the capabilities of next generation networks and role of mobile technologies
Unit 4	Telecommunication System	GSM,DECT ,TETRA	Select appropriate wireless technologies in commercial and enterprise applications.
Unit 5	Wireless LAN	Infra-red Vs radio transmission, Infrastructure and analog Network , IEEE 802.11 , HIPERLAN Bluetooth	Select appropriate wireless technologies in commercial and enterprise applications.



Unit 6	Mobile Network Layer	Mobile IP ,Dynamic Configuration Protocol , Mobile ad-hoc Networks	Assess the capabilities of next generation networks and role of mobile technologies
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**Specify Course Outcome: Evaluate the usability of mobile devices such as smart phones. Select appropriate wireless technologies in commercial and enterprise applications. Assess the capabilities of next generation networks and role of mobile technologies.**

**Specify Program Outcome:**

**Signature of Teacher**



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**Pro-forma for program and course outcomes (2.6.1)**  
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**Name of Teacher: Agarmore J.R.**

**Department: Comp. Sci**

**Program: BCS TY SEM VI**

**Subject: comp science**

**Course Code: S5.SEC.1**

**Paper Title: Javascript**

<b>Unit Number</b>	<b>Topics</b>	<b>Unit-wise Outcome</b>
<b>1.</b>	Write a JavaScript program to print "Hello World".	1. Use operators, variables, arrays, control structures, functions and objects in JavaScript. 2. Map HTML using the DOM - Document Object Model. 3. Identify popular JavaScript Libraries. 4. Create dynamic styles. 5. Create animation on a web page.
<b>2.</b>	Write a JavaScript program to perform all arithmetic operations.	
<b>3.</b>	Write a JavaScript program to find out entered number is even or odd.	
<b>4.</b>	Write a menu driven program in JavaScript, which has following options (Use of switch statement). 1. Addition 2. Subtraction	
<b>5.</b>	Write a JavaScript program to display series 1, 2, ..., 10 using while loop	
<b>6.</b>	Write a JavaScript program to display multiplication table of any number entered through the keyboard using do - while loop.	
<b>7.</b>	Write a JavaScript program to find the factorial value of any number entered through the keyboard using for loop.	
<b>8.</b>	Write a JavaScript program to demonstrate concept of global and local variables.	

• **Specify Course Outcome:**

7. Use operators, variables, arrays, control structures, functions and objects in JavaScript.

<b>9.</b>	Write a JavaScript program to demonstrate array methods.	6. Use regular expressions for form validation.
<b>10.</b>	Write a JavaScript program to demonstrate math methods.	
<b>11.</b>	Write a JavaScript program to demonstrate string methods	

8. Map HTML using the DOM - Document Object Model.
9. Identify popular JavaScript Libraries.
10. Create dynamic styles.
11. Create animation on a web page.
12. Use regular expressions for form validation.
13. Debug using firebug.
14. Create an XMLHttpRequest Object

**Specify Program Outcome:**

**Signature of Teacher**

**AGARMORE J.R.**



**Dnyanopasak Shikshan Mandal's**

**College of Arts, Commerce and Science, Parbhani**

*Pro-forma for program and course outcomes (2.6.1)*

**Name of Teacher:** khairajani S.U

**Department:** Computer science

**Program:** Bcs ty

**Subject:** computer science

**Course Code:** S6.CC.2

**Paper Title:** Android Programming

Unit Number	Unit Name	Topics	Unit-wise Outcome
UNIT I	Introduction	Introduction to Mobile Programming, Smartphones future, Overview of the Operating Systems used on different mobile devices, Android Operating System, Its Features and Versions, Overview of the development languages available on different mobile devices, Explore mobile device features not available on PCs such as accelerometer, GPS etc, Installing Eclipse, Installing Android Development Tools, Installing Android Studio	Classify the android .operating system
UNIT II	Android Architecture	Android Stack, Android applications structure, Creating a project, Working with the, AndroidManifest.xml, Using the log system, Activities	Classify the android architecture
UNIT III	User Interface(UI) Architecture	Application context, Intents, Activity life cycle, Supporting multiple screen sizes	Classify user interface architecture
UNIT IV	User Interface Widgets	Text controls, Button controls, Toggle buttons, Images, Notification and Toast-	Build user interface element

		Parameters on Intents, Pending intents, Status bar notifications, Toast notifications	
UNIT V	Menus, Dialogs List, Location & Maps and Animation	Localization, Options menu and Context menu, Dialogs-Alert dialog, Custom dialog, Dialogas Activity, Using string arrays, Creating lists, and Custom lists Google maps, Using GPS to find current location, Animation -View animation and Draw able animation	Build the menu, dialog list, animation and map
UNIT VI	Working with data storage and Publishing Apps	Shared preferences, Preferences activity, Files access, SQLite database, Preparing for publishing, Signing and preparing the graphics, Publishing to the Android Market	Classify the database of android

**Specify Course Outcome:** Understand the Android application architecture, including the roles of the task stack, activities, & services. Build user interfaces with fragments, views, form widgets, text input, lists, tables, and more.

**Specify Program Outcome:** Creating android app

**Signature of Teacher**

Khairajani S.U



**Dnyanopasak Shikshan Mandal's**  
**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher:** khairajani S.U

**Department:** Computer science

**Program:** Bcs ty

**Subject:** computer science ]

**Course Code:** S6.Lab1

**Paper Title:** Android Programming

no	Program	pro Outcome
1	Installing Eclipse and Android Studio	Classify the Android application architecture, including the roles of the task stack, activities, & services.
2	Study of Android Application structure.	
3	Sample Apps for Working with AndroidManifest.xml	
4	Sample Apps for Working with Activities.	
5	Sample Apps for Working with Application Context	
6	Apps for Demonstration of Intends	
7	Apps for Demonstration of Activity Life Cycle.	
8	Apps for demonstration of Buttons and Textbox.	
9	Designing simple Calculator Apps	
10	Sample Apps for Working with Images and Buttons	
11	Sample Apps for Working with Notification and Toast.	
12	Sample Apps for Demonstration of Context menu and Dialogs	
13	Sample Apps for Working with SQLite Database.	
14	Sample Apps for Demonstration of File Access.	
15	Sample Apps for Demonstration of Shared preferences and Preferences activity	

**Specify Course Outcome:** Understand the Android application architecture, including the roles of the task stack, activities, & services. • Build user interfaces with fragments, views, form widgets, text input, lists, tables, and more.

**Specify Program Outcome:** crating android app

**Signature of Teacher**

Khairajani S.U



**Dnyanopasak Shikshan Mandal's**  
**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher: Agarmore J.R.**

**Department: Comp. Sci**

**Program: BCS TY SEM VI**

**Subject: Computer Science**

**Course Code: S6.CC.4**

**Paper Title: Soft. Engineering**

Unit Number	Unit Name	Topics	Unit-wise Outcome
1		Evolving role of software, characteristics, application, crisis, horizon and myths	Understand basic information of software
2		Software engineering, process, the waterfall model, incremental model, evolutionary process model, spiral model	Understands different models for software
3		Software engineering-a technology, process framework, personal and team process model, personal , software process technology, product and process	Learn different things required for software
4		What is agility? What is agile process? The politics of agile development, agile process models, feature driven development	Understands agile process
5		Software engineering practice, the essence of practice, core principle, communication, planning practice, modeling, design modeling principles	Understands different practice modeling of software
6		Computer based system, the system engineering hierarchy, system modeling system simulation	Learn hierarchy and modeling of software

**Specify Course Outcome:**

1. Define various software application domains and remember different process model used in software development.
2. Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques.



3. Convert the requirements model into the design model and demonstrate use of software and userinterface design principles.
4. Distinguish among SCM and SQA and can classify different testing strategies and tactics and compare them.
5. Justify role of SDLC in Software Project Development and they can evaluate importance of Software Engineering in PLC.
6. Generate project schedule and can construct, design and develop network diagram for different

**Specify Program Outcome:**

1. Define various software application domains and remember different process model used in software development.
2. Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques.
3. Convert the requirements model into the design model and demonstrate use of software and user interface design principles.
4. Distinguish among SCM and SQA and can classify different testing strategies and tactics and compare them.

**Signature of Teacher**



**DnyanopasakShikshanMandal's**

**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*

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**Name of Teacher:** Pattewar D.D.

**Department :**Computer Science

**Program :**BSc(CS)TY \BCATY

**Subject:** Computer Science

**Course Code:** S6 .CC.5\S6CC.4

**Paper Title: Elective (software testing)**

UnitNumber	UnitName	Topics	Unit-wiseOutcome
Unit 1	Quality concepts	Quality , Software Quality ,McCall's Quality Factors ,ISO 9126 Quality Factors , Targeted Quality Factors,, The Cost of Quality , Quality and Security , Quality Control , Quality Assurance	To learn technical skills to assure production of quality software.
Unit 2	Software Quality Assurance	Software Quality Assurance , Software Reviews ,Formal Technical Reviews ,Software Reliability ,The SQA Plan	To enhance skills of designing and testing software.
Unit 3	SOFTWARE TESTING STRATEGIES	A Strategic Approach to Software Testing , Unit Testing , Integration Testing , Validation Testing , System Testing , The Art Of Debugging	To develop software engineering skills and testing plans
Unit 4	TESTING APPLICATION	Software Testing Fundamentals , Internal and External Views of Testing , ,White-Box Testing , Basic Path Testing ,Control Structural Testing , Black Box Testing	To understand system concepts and its application in Software development
Unit 5	WEBAPPS FOR TESTING	Testing Concepts for WebApps , The Testing Process-An Overview , Content Testing , User interface Testing , Navigation Testing , Security Testing	To understand system concepts and its application in Software development
Unit 6	PRODUCT METRICS	A frame work for product metrics , Metrics for the requirements model , Metrics for design model , Metrics for source code , Metrics for testing	To develop software engineering skills and testing plans

**Specify Course Outcome:** Ability to learn various methods of software development.

**Specify Program Outcome:** Ability to apply various software testing techniques

**Signature of Teacher**



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**College of Arts, Commerce and Science, Parbhani**

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*Pro-forma for program and course outcomes (2.6.1)*  
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**Name of Teacher: Surnar S.B.**

**Department: Computer Science**

**Program: BCSTY**

**Subject: Computer Science**

**Course Code: S6.SEC.1**

**Paper Title: XML Programming**

Unit Number	Unit Name	Topics	Unit-wise Outcome
1	Introduction To XML	What is XML? Origins of XML Goals of XML XML Today Study of Creating Documents Study of Viewing XML Study of Testing XML Study of Transformation	To understand what is XML & its uses.
2	XML Markup and Core Concepts	The anatomy of a Document Study of Elements: The Building Blocks of XML Study of Attributes: More Muscle for Elements Study of Namespaces: Expanding your Vocabulary Study of Entities: Placeholders for Content Study of Miscellaneous Markup Study of Well-Formed Documents	To understand what functions are and why they're useful.
3	Creating XML Links	Study of Creating Hyperlinks Locators Study of Link Elements Simple Links Extended Links Extended Links Groups Study of Inline and Out-of-Line Links Study of Link Behavior Link Effects Link Timing The Behavior Attribute	Implementation and representation of different type documents

4	Document Models: A Higher Level of Control	Study of Modeling Documents Study of DTD Syntax Example: A Checkbook Tips for Designing and Customization DTDs Example: Barebones DocBook Study of XML Schema: An Alternative to DTDs	To understand DTD, CSS, XLST
5	Rendering XML with XSL	XSL 1 XSL 2 Study of Template Rules Matching an Element by its ID Matching an Element by its Name Matching an Element by its Ancestry Matching Several Element Names Matching an Element by its Attributes Matching an Element by its Children Matching an Element by its Position Wildcard Matches Resolving Selection Conflicts The Default Templet Rule Study of Formatting Objects Layout Formatting Objects Content Formatting Objects	To introduce concept of Creating XML Links <input type="checkbox"/> To understand Rendering XML with XSL

**Specify Course Outcome:** To introduce concept of Creating XML Links

- To understand Rendering XML with XSL

**Specify Program Outcome:** To build dynamic web pages and web applications.

**Signature of Teacher**















