Dharmabad Shikshan Sanstha's

Lal Bahadur ShastriMahavidyalaya, Dharmabad. 431809

Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: SHAIKH Y.S

Department: Computer Science **A.YEAR: 2022-2023**

Program:B.ScIst SEM: I **Subject**: Computer Science (Optional)

Course Code: OCS-101

Paper Title: Programming Logic Concepts

Unit Number	**Unit Name**	**Topics**	**Unit-wise Outcome**
I		Introduction,Generation of Computer,Classification of Computer,Hardware,Software, Application of Computer, Computer Architecture: Central Processing Unit:Arithmetic Unit, Logic Unit, Control Unit, Main Memory Unit,Types of Memory, Input & Output Devices:	Student will be Understand the Basic Knowledge of the computer like as Hardware & Software ,Input & Output Devices,Structure of the Computer.
II		Introduction to Number System,The Problem Solving Aspects, top – down design, Introduction to Algorithms, implementation of Algorithm, The efficiency of algorithms, the analysis of algorithms, Flowcharts and it's symbols.	Student will be Understand the steps of Algorithms. Student will be Understand the different symbols of Flowcharts.
III		Exchanging the value of two variables, Counting, Summation of set of numbers, Factorial computation, Generation of the Fibonacci sequence, reverses the Digits of an Integer	Student will be Understand with the help of steps of Algorithms as well as Using the symbols to design algorithms & Flowcharts to solve different problems.

IV		The Smallest divisors of an integer, Generating prime numbers, Definition and Memory Representation of Array, Array order reversal, Array Counting , Finding the Maximum number in a set, sorting by exchange, Binary Search.	Student will understand how to solve problems using some Different input and output of the problem in a Algorithms and Flowcharts.

Specify Course Outcome:

Student will be Understand the Basic Knowledge of the computer Using this Course Developing the steps of Alogrithms and Flowcharts is one type of Technique with the help of flowcharts Programmer easily Understand the logic of the creating Programs by using diagrammatically presentation of a Program.

Specify Program Outcome:

Student will be able to design algorithms to solve different problems. Student will understand how to solve problems using computers. Using this Course Student Want to Ideas of how to Work in Programming Logic how to work or how to Understand the Programmer gathering the requirement of the program.

Signature of Teacher

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Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: KHARE M.A.

Department: Computer Science **A.YEAR: 2022-2023**

Program: B.Sc. Ist SEM: I Subject: Computer Science (Optional)

Course Code: OCS-102

Paper Title: Designing of Web Pages Using HTML

Unit Number	Unit Name	Topics	Unit-wise Outcome
I		Internet, The Important of the Internet, World Wide Web, URLs, Web Brewers, Web Server, Internet Services, The web flow, objectives of the website, basic interface design, developing a store board for the website, navigation and links within the site, checklist for designing.	Student will be Understand the Basic Knowledge of the computer like as Internet ,WWW,Urls,using creating your own web pages.
II		HTML, Basic elements, Lists, Linking HTML pages, Linking to URLs, Text formatting, Text Alignment, Character Styles, Fonts and Font Sizes, Using Colors for the Web, Preformatted text, Horizontal lines, Line break, displaying special characters.	Student will be Understand using the HTML programming language
III		Images in HTML Pages, Tables in HTML, Frames, Creating Frames, frame attribute linking, complex framesets, Inline frames,	Student will be Understand the principles of creating an effective web page with the help of different tags.

		Image maps	
IV		Form designing, Additional Layout features, Intro to CGI Scripting, Active Server Pages, Introduction to Embedding Multimedia and Java Applets, Inserting sound/Audio into Web Pages, Video file formats, Creating Marquee. Into. to JavaScript and Dynamic HTML, Structure of JavaScript.	Student will be Understand the web pages & Basic Knowledge of Scripting and Applets to creating & Designing an effective web page

Specify Course Outcome:

Develop skills in analyzing the usability of a web site.
Learn techniques of responsive web design, including media.
Using this Course Student Create your own Web sites as well as creating a web pages and displaying how to Attractive our Websites.

Specify Program Outcome:

Be able to use the HTML programming language.

Understand the principles of creating an effective web page using some different tags in HTML.

Signature of Teacher:

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Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: SHAIKH Y.S

Department: Computer Science **A.YEAR: 2022-2023**

Program: B.ScIstSEM :II **Subject**: Computer Science (Optional)

Course Code: OCS-103

Paper Title: Introduction to Data Structure

Unit Number	Unit Name	Topics	Unit-wise Outcome
I		Definition of Data Structure, Elementary data organization, data structure operations, Algorithmic notations, Control structure.	Student will be Understand the Basic Knowledge of Data Structure & Operations of its how to organize the data in with the help of Data Structure.
II		Introduction to Linked list, Representation of linked list in memory, Traversing, Searching in Unsorted linked list, Overflow and Underflow, Inserting at the beginning of a list, deleting node following a given Node.	To Develop application using data structures with different operation to how to store the data with different operation like as linked list,Searching Methods etc.
III		Stack: Introduction, Memory representation of Stack, Insert element in Stack i.e. PUSH operation, Delete element from Stack i.e. POP operation. Queue: Introduction, Memory Representation, Insert & Delete operation in Queue.	Students develop knowledge of applications of data structures including the ability to implement algorithms for the creation, insertion, deletion, searching

IV		Tree: Introduction, Definition of a Binary tree & its Memory representation, Traversing a Binary Tree, PREORDER, INORDER, POSTORDER Traversal, Threaded binary tree. Graph: Introduction, Memory Representation of graphs,	Students will be develop knowledge of applications of data structures including the operation to easily implement algorithms for the with the help of Tree & Graph.

Specify Course Outcome:

Student Able to write well-structured procedure-orientedprograms.
To solve problems using data structures such as linear lists, stacks, queues, hash tables, binary trees, heaps, binary search trees, and graphs and writing programs for these solutions

Specify Program Outcome:

Students develop knowledge of applications of data structures including the ability to implement algorithms for the creation, insertion, deletion, searching etc.Studentdevelop application using data structures.

Signature of Teacher :

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Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: KHARE M.A

Department: Computer Science **A.YEAR: 2022-2023**

Program: B.ScIst SEM :II **Subject**: Computer Science (Optional)

Course Code: OCS-104

Paper Title: Programming in C Language

Unit Number	Unit Name	Topics	Unit-wise Outcome
I		Introduction to C, Character set, C tokens, Constant and Variables, Data types, declaration of variables, assigning values to variables, Input /Output Statement, all Operators and Structure of C program.	Student will be Understand the Basic Knowledge of the Computer Programming Language.
II		If Statement, If-Else statement, Nesting of If-Else statement, switch Statement, goto, Looping statements, while loop, do-While, for loop, nested loop.	Student will be Understand complete knowledge of C language to develop logics
III		Introduction to Array, types of array declaration and initialization, introduction to function, recursion, standard library string handling functions: strlen(), strcpy(), strcmp(), strcat()., Storage Classes: auto, static, register, extern	complete knowledge of C language to develop logics which will help them to create programs, applications in C.

IV		Introduction to Function, Introduction to Structure and Union, Defining Structure and Accessing Structure members, Introduction to Concept of File Handling.	Student will be Understand the more advanced features of the C language like as user defined function, Structure,Union etc.

Specify Course Outcome:

The course aims to provide exposure to problem-solving through programming.

The student to the Understand basic concepts of the C- programming language and develop the Application of program using different statements.

Specify Program Outcome:

This Course is designed to provide complete knowledge of C language to develop logics which will help them to create programs, applications in C.

In this Course the Basic concept clear as well some advanced features of the C language Student Learn. As per this Course Student Entry in the IT Sector the role of IT Sector after completed this course as a Programmer.

Signature of Teacher:

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Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: KHARE M.A

Department: Computer Science **A.YEAR: 2022-2023**

Program: B.ScIInd SEM :III Subject: Computer Science (Optional)

Course Code OCS-201
Paper Title: Operating System

Unit Number	Unit Name	Topics	Unit-wise Outcome
I		Introduction to Operating System, Computer-System Architecture, Operating-System Structure, Operating System Operations, Process Management, Memory Management, Storage Management, Protection and Security, Distributed Systems.	Student will be Understand the Basic Knowledge of the fundamentals of Operating System, as well as student easily understansd
II		Operating-System Services, User Operating-System Interface, System Calls, Types of System Calls, System Programs, Virtual Machines, Operating-System Generation, System Boot	Students will be understand to the basic Services of a computer Operating System like as System call, System Program and Booting Process
III		Process Concept, Process Scheduling, Operations on Processes, Inter-process Communication, Examples of IPC Systems, Communication in Client-Server Systems, Overview of threads, Multithreading Models	Students will be understand to the basic operation of a computer Operating System like as processing,Scheduling. Student also Understand the Knowledge of Models in Operating System like as waterfall,Spiral Model Etc.

IV		Memory Swapping, Contiguous Memory Allocation, Paging, Structure of the Page Table, Segmentation, virtual memory, File Concept, File-System Mounting, File-System Structure	Student will be Understand and Knowledge of How to Divide the Memory simultanounsily and Using the different Operating System using in a single Computer like as Memory Partition, Memory Allocation, File System etc.

Specify Course Outcome:

Student Understand fundamentals of Operating System.

To understand the structure and organization of the file system

Specify Program Outcome:

Students will be able to the basic components of a computer OS.

To learn mechanism of OS

In this Course Student will be able to understand how to work the OS in Computer.

Signature of Teacher

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Lal Bahadur ShastriMahavidyalaya, Dharmabad. 431809

Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: SHETTY S.S

Department: Computer Science **A.YEAR: 2022-2023**

Program: B.ScIIndSEM III Subject: Computer Science (Optional)

Course Code: OCS-202

Paper Title: Object Oriented Programming using C++

Unit Number	Unit Name	Topics	Unit-wise Outcome
I		Basic Concepts of OOP, Object Oriented Languages, Applications of OOP, Structure of C++ program. Difference between Top down & bottom up language.	Student will be Understand the Basic Concept of OOP's ,Structure of C++ programming language as well as understand top down and bottom to top Approach .
II		Introduction to Tokens, Keywords, Identifiers & Constants, Basic Data Types, Variables Operators in C++, Decision Control & Loop Control Structures: If, If-else, Nested If, Else-if ladder, switch, goto Statement, break statement, while, do-while, for loop.	Student will be Understand complete knowledge of C++ language to develop logics using different Decision making & looping statement. As well as Student will be also develop small applications of program.
III		Introduction to Function, Function Prototyping, Call by Value & Call by reference, inline function, default arguments, Function Overloading, Library Functions	Student will be Understand the Scope of variables, Overloading concept as well as Library Function .

IV		Introduction Structures, specifying a Class, Defining member functions, Static Data Members, Static Member Functions, Friend Functions. Introduction to Constructors, destructors. Introduction to Inheritance.	Student will be also develop small applications of program. C++ classes for code reuse

Specify Course Outcome:

To learn OOPS concepts

To learn how to design C++ classes for code reuse

Student able to built small applications in C++

Specify Program Outcome:

Upon compilation of this course, students will able to do programming independently and will also be able to built small applications programs in C++ and Ideas about the logic.

Signature of Teacher:

Dharmabad Shikshan Sanstha's

Lal Bahadur ShastriMahavidyalaya, Dharmabad. 431809

Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: KHARE M.A

Department: Computer Science **A.YEAR: 2022-2023**

Program: B.ScIIndSEM IVSubject: Computer Science (Optional)

Course Code: OCS-205
Paper Title: Computer Networks

Unit Number	Unit Name	Topics	Unit-wise Outcome
I		Computer Network definition & Applications, Data Transmission Modes, Protocol Hierarchies, Design issues for layers, Connection Oriented & Connectionless services. Service Primitives. Network Models – OSI/ISO Reference Model & TCP/IP Model	Student will be Understand basics of computer networking, connectivity techniques , related protocols and OSI/ISO Reference Model.
II		Network Topologies, Network Devices - NIC Cards, Hub, Switch, Bridges, Wireless access points, Router, Gateways, Modems, Repeaters, Types of Networks..	Student will be Understand different Topologies Using this Topologies Connectivity of different computer is easily created.
III		Magnetic Media, Twisted pair, Co-axial cable, fibre optics, radio transmission, Wireless transmission, Bluetooth. Structure of telephone system, Transmission & Switching. Email Architecture,	Understand the students to computer networks and concentrate on building a firm foundation for understanding data communication Using different .

IV		Network Protocols, Web server, Browsers, Domain Name System, introduction to IP addresses & IP Protocol, Introduction to Wi-Fi & 4G technology, Introduction to Security & Cryptography, Firewall	Student will be Understand the IP address using the Network Protocol as well as connect your own PC with Advanced Technologies like as Wi –Fi & 4G,as well as Understand the Basics Knowledge of Cryptography.

Specify Course Outcome:

Understanding basics of computer networking,connectivity techniques and related protocols.

Students to computer networks and concentrate on building a firm foundation for understanding data communication.

Specify Program Outcome:

Students would be able to choose, escalate and establish a computer network.

Students to computer networks and concentrate on building a firm foundation.

In this Course Student entry to the IT Sector & handle the connectivity of the system is easily they work do.

Signature of Teacher:

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Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: SHETTY S.S

Department: Computer Science **A.YEAR: 2022-2023**

Program: B.ScIInd SEM: IVSubject: Computer Science (Optional)

Course Code: OCS-206
Paper Title :**Java Programming**

Unit Number	Unit Name	Topics	Unit-wise Outcome
I		Java Features, how java differs From C and C++, Java and Internet, Java & www, Web Browsers, Java support systems, JVM, Java program structure,.	Student will be Understand the Basic Knowledge of the JAVAProgramming Language and how to install JDK in Computer.
II		Java Tokens, Constants, Variables, Data Types, Declaration of variable, Giving Values to variables, Scope of Variables, Symbolic Constants, Command Line Arguments, Java Statements, simple java program,,	Student will be Understand Java integrated development environment to write, compile, run, and test simple object-oriented Java programs
III		Introduction & defining a class, adding variables, Adding Methods, Creating Objects, Accessing Class Members, Constructors. Method Overloading, Static Members, Inheritance: Extending a class, Overriding Method, Final variable and Methods.	Student will be Understand complete knowledge of JAVA language to develop logics using different Methods. As well as Student will be also Understand the concept of Inheritance.

IV		Introduction, Defining Interface, Extending Interface, Implementing Interface, Accessing Interface Variables, Introduction to Arrays. Introduction to Java API package	Student will be able to make elementary modifications to Java programs that solve real-world problems.

Specify Course Outcome:

Student understand how to implement object-oriented designs with Java Program.

Student identify Java language components and how they work together in applications.

Specify Program Outcome:

completion of the course the student would be able to use Java integrated development environment to write, compile, run, and test simple object-oriented Java programs. Further, they would be able to make elementary modifications to Java programs that solve real-world problems.

Signature of Teacher:

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Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: SHETTY S.S.

Department: Computer Science **A.YEAR: 2022-2023**

Program: B.Sc. IIIrd **SEM: V Subject**: Computer Science (Optional)

Course Code: OCS-301
Paper Title: Software Engineering

Unit Number	Unit Name	Topics	Unit-wise Outcome
I	The Nature of Software & Software Engineering	The Nature of Software, The Changing Nature of Software, Defining the Discipline, Software engineering process, Software engineering practice, Software Myths	Student will be Understand the Software Engineering Process
II	Software Process Structure & Models	A Generic process model, defining a framework activity, Process patterns, Process assessment &improvement, Prescriptive process models, Personal & team process models.	Student will be Understand Requirements and components of Software Engineering
III	Agility development & Human Aspects	Introduction to Agility, Agility & Cost of Change, Agility principles, Extreme programming, Characteristics of Software engineer, Psychology of Software engineering, Software team structures	Student will be Understand to prepare detailed plans and designs as per developing Software ideas.

IV	Understanding Requirements & Design Concepts	Requirement Engineering ,Building the analysis model, Requirement Analysis, Design within the context of software engineering, The design process, Design model, Software Architecture, Element of quality assurance, Software testing fundamentals	Student will be designs as per customer's demands, carry out testing, develop intuitive user interfaces, and integrate allthese activities into a system.

Specify Course Outcome:

Understand Software Engineering Process.

Understand Requirements and components of Software Engineering.

Understand software design and software testing fundamentals

Specify Program Outcome:

Confidence of becoming a Software developer in order to get placement as well research activities.

It aims to prepare detailed plans and designs as per customer's demands, carry out testing, develop intuitive user interfaces, and integrate all these activities into a system.

Signature of Teacher:

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Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: SHAIKH Y.S

Department: Computer Science **A. YEAR: 2022-2023**

Program: B.Sc. IIIrd **SEM: V Subject**: Computer Science (Optional)

Course Code:
Paper Title :**Visual Programming** **Paper No. XIII [A]**

Unit Number	Unit Name	Topics	Unit-wise Outcome
I	Getting Started with VB	The IDE, The Elements of user interface, Designing user interface, Programming an Application Visual Development and Event Driven Programming.	Student will be Understand the Basic Knowledge of the Visual Basic Graphical User Interface Language.
II	Visual Basic The language	Variable, Constants, operators, data types, arrays, collections, Procedures, control flow & loop statements,	Student will be Understand complete knowledge of Visual Basic Programming language to develop logics using different Decision Making & Looping Statement
III	Working with forms	Form types, Appearance of forms, Form properties, Designing menu structure, Building dynamic forms at run time, Introduction to MDI forms	Student will be Understand design various forms and reports by drag and drop models as well as Basic Knowledge of MDI Forms
IV	Basic Active X controls	Command button, control-properties, Text Box control- properties, List Box & Combo Box control - properties, combo Box control-properties, Scroll	Student will be Understand To develop an application using GUI Language. Implement VB programs to solve simple problems. Confidence of

		Bar control-properties, Slider control properties, Understanding Visual data manager...	becoming a Software developer

Specify Course Outcome:

Understand &develop Graphical User Interface Language.

Knowledge of programming to develop an application using GUI Language

Implement VB programs develop your own application.

Specify Program Outcome:

Visual Basics is a Graphical User Interface language. We can design various forms and reports by drag and drop models. It is very convenient GUI platform for modern software designing.

Student deep Knowledge of programming.

Confidence of becoming a Software developer in order to get placement as well as in research activities

Signature of Teacher

Dharmabad Shikshan Sanstha's

Lal Bahadur Shastri Mahavidyalaya, Dharmabad. 431809

Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: SHAIKH Y.S

Department: Computer Science **A.YEAR: 2022-2023**

Program: B.Sc. IIIrd SEM:VI Subject: Computer Science (Optional)

Course Code:

Paper Title: Relational Database Management Systems & PL/SQL **Paper No. XIV**

Unit Number	Unit Name	Topics	Unit-wise Outcome
I	Introduction	Introduction to DBMS, Applications of DBMS, Data Models, Database Architecture, Database Users & Administrators, Entity, Attributes & Entity Set, Database Languages, DDL,DML,DCL.	Student will be Understand the Basic Knowledge of DBMS. Introduced the Database Language Create,Update,Delete records in the database.
II	Relational Algebra and Calculus	Introduction to Selection, Projection, Union, and Joins, introduction to SQL, Basic SQL Query and Examples of SQL Queries: select, where, from, Introduction to views, Aggregate Operators Group by & Order by Clause..	Student will be Understand the fundamental concepts of SQL Queriess
III	Integrity Constraints	Introduction, Domain Constraint, Primary Key, Unique Key, Foreign Key	Student will be Understand the fundamental concepts of RDBMS inside the Records.

IV	Introduction to PL/SQL	Introduction, Architecture of PL/SQL, Data types, operators, Decision making and looping statements, Simple PL/SQL programs, Introduction to Triggers.	Student will be Understand the Knowledge and Use of SQL & PL/SQL for RDBMS Programming Logic using SQL

Specify Course Outcome:

Relational Database Management system and database languages

Relational Algebra and Calculus integrity Constraints and PL/SQL

Specify Program Outcome:

Knowledge of RDBMS

Knowledge about the Use of SQL & PL/SQL for RDBMS

After Complete this Course Student easily Entry in the IT Sector which is responsible for the handling data and record Confidence of becoming after completed role handle DBA.

Signature of Teacher:

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Pro-forma for program and course outcomes (2.6.1)

Name of Teacher: SHETTY S.S

Department: Computer Science **A.YEAR: 2022-2023**

Program:B.ScIIIrd SEM:VI **Subject**: Computer Science (Optional)

Course Code:

Paper Title: E-Commerce **Paper No. XV [B]**

Unit Number	Unit Name	Topics	Unit-wise Outcome
I	Electronic Commerce	Introduction, E-Commerce types, Value Added Networks, Electronic commerce over the Internet	Student will be Understand the Basic Ideas of the E-commerce. E- commerce is a new revolution in the traditional market place where people buy from internet.
II	Intranet	Introduction to Intranet, Intranet services, Intranet Implementation	Student will be Understand the role of Intranet & they Provide Which Services is Easily Understood
III	Internet	Internet-Introduction, Internet Engineering Task Force, Internet Architecture Board, Internet Communication Protocols, Internet Search Tools: Telnet, FTP, World Wide Web. Gopher, HTTP, Concerns about Internet.	Student will be Understand the Knowledge of Internet is how much essential for us in a now a day's.

IV	Electronic Data Interchange	EDI introduction, Cost & Benefits of EDI, Components of EDI Systems: EDI Standards, EDI Software's, EDI Communication Networks, EAN system, EAN/COM, Article numbering system, Bar-coding, Serial Shipping Container Code & EAN label.	Student will be Understand Electronic Data Interchange Online purchase from Amazon, Snapdeal, Flipkart, etc comes under e-commerce

Specify Course Outcome:

This course introduces common terminology related with e-commerce and their work association.

Understand fundamental concepts of E-Commerce.

Understand Electronic Data Interchange

Electronic Commerce market place and Internet

Specify Program Outcome:

Student will be Understand the role of Intranet & they Provide Which Services is Easily Understood Basic Ideas of the E-commerce.

E- commerce is a new revolution in the traditional market place where people buy from internet.

Job opportunities in BPO, E-commerce companies, Logistics companies, E-commerce framework consultant

Signature of Teacher