Mahatma Phule Shikshan Sanstha's

Karmaveer Bhaurao Patil College,

Department of Information Technology

Program Outcomes and Course Outcomes

B.Sc. Information Technology (Entire)

Program Outcomes:

After completion of this program student should be able to

Computer Science

1. Analysis problem, identify and define the computing requirements, which may be appropriate to its solution.
2. Impart basic and advanced knowledge, skills required in IT Industry.
3. Analyze the local and global impact of computing on individuals, organizations, and society
4. Use current techniques, skills, and tools necessary for computing practices.
5. Understand Enterprise Resource Planning techniques.

Electronics

5. Explain the principle of operation for various equipment in electronics.
6. Characterize semiconductors , diodes, transistors and Operational amplifiers.
7. Identify functions of digital multimeter, CRO, transducer in measurement of physical variables.

Mathematics:

9. Derive numerical methods for various mathematical operations.
10. Learn to find the solution of constant coefficient differential equation.
11. Student will simplify and evaluate algebraic expressions.

Statistics:

12. Apply various types of sampling methods to data collection.
13. Understand and use the terminology of probability.
14. Recognize, describe, and calculate the measures of the spread of data: variance, standard deviation, and range.

Program Specific Outcomes:

Program Specific Outcomes

1. To create a learning environment to transform the students with strong fundamentals in Information Technology, analytics, programming and problem solving.

2. To provide exposure to students to latest tools & technologies in area of computer science

3. There are brilliant job outlooks for Computer Science graduates in the recent Scenario.

4. Computer Science graduates are competent in academic, Research, Industry, Government, Private and Business organizations with the acquired programming skills.

5. The software and IT companies are the major employers of Computer Science graduates.

Course Outcomes

B.Sc.(I.T.) Entire Part-I (Sem I)

Course Title- Basics of C Programming

COURSE OUTCOMES

After completing this course, student will be able to

1. Demonstrate a good understanding of basic database structure. Illustrate the flowchart and design an algorithm for given problem
2. Acquire the information about data types.
3. Students will be able to develop logics which will help to create programs and applications.
4. Will help to switch for any programming language for development.

B.Sc. (I.T.) Entire Part-I (Sem I)

Course Title- Web Development Using HTML

COURSE OUTCOMES

After completing this course, student will be able to

1. Understand basic concept of HTML.
2. Learn how to use HTML tags.
3. Understand how to design Webpages using HTML.
4. Understand use of frames to design.

B.Sc. (I.T.) Entire Part-I (Sem I)

Course Title- Practical-I Based on Subject I DSC I and Subject I

DSC II

COURSE OUTCOMES

After completing this course, student will be able to

1. Develop applications.
2. Debug the program
3. Design static web pages using Hyper Text Markup Language (HTML).
4. Enhance the look of web pages by implementing CSS.
5. Collect information from the user with HTML Forms.
6. Design website using HTML & FRAME .

B.Sc. (I.T.) Entire Part-I (Sem I)

Course Title- Foundation of Mathematics

COURSE OUTCOMES

After completing this course, student will be able to

1. Basic knowledge of set theory, functions and relations concepts, matrix needed for designing and solving problems.
2. Construct simple mathematical proofs and possess the ability to verify them.
3. Basic knowledge of application of matrices.
4. Basic knowledge of Mean value theorems.

B.Sc. (I.T.) Entire Part-I (Sem I)

Course Title- Basic Algebra

COURSE OUTCOMES

After completing this course, student will be able to

CO 1. apply fundamental concepts in Number theory to solve problems on congruence.
CO 2. solve problems based on Fermat's theorem and residue classes.
CO 3. use fundamental concepts in Mathematics like sets, relations and functions.
CO 4. learn basic concepts like poset, lattice, Boolean algebra and apply them to find CNF and DNF.

B.Sc. (I.T.) Entire Part-I (Sem I)

Course Title- Basic Electronics

COURSE OUTCOMES

After completing this course, student will be able to

CO1: To understand and distinguish the electronics devices.
CO2: To understand the semiconductor applications and solve the circuits.
CO3: To understand the logic family.
CO4: To understand the TTL and CMOS concept.

B.Sc. (I.T.) Entire Part-I (Sem I)

Course Title- Fundamentals of Digital Computing

COURSE OUTCOMES

After completing this course, student will be able to

CO1 To understand the concept of Number Systems and codes
CO2 To simplify Boolean algebraic assignments.
CO3 To understand and compare the functionalities, properties and applicability of Logic Gates
CO4 To understand and design the arithmetic circuits

B.Sc. (I.T.) Entire Part-I (Sem II)

Course Title- Advanced C Programming

COURSE OUTCOMES

After completing this course, student will be able to

1. Understand a functional hierarchical code organization.
2. Ability to work with different storage class.
3. To impart knowledge in creating and using pointer
4. Understand to work with file handling concept.

B.Sc. (I.T.) Entire Part-I (Sem II)

Course Title- Web Development Using Cascaded Style Sheets

COURSE OUTCOMES

After completing this course, student will be able to

1. Understand basic concept of HTML.

2. Learn how to use HTML tags.

3. Understand how to design Webpages using HTML and CSS.

4. Understand use of frames to design.

B.Sc. (I.T.) Entire Part-I (Sem II)

Course Title- : Practical-I Based on Subject I DSC III and Subject I

DSC IV

COURSE OUTCOMES

After completing this course, student will be able to

1. Develop applications with nested structure.
2. Understand concept of passing arguments.
3. Develop applications with file handling.
4. Understand pointer arithmetic operations.

B.Sc. (I.T.) Entire Part-I (Sem II)

Course Title- Graph Theory

COURSE OUTCOMES

After completing this course, student will be able to

CO 1. achieve command of the fundamental definitions and concepts of graph theory.

CO 2. model problems using graphs and solve these problems algorithmically.

CO 3. illustrate fundamentals of spanning tree, circuits and cut-sets.

CO 4. apply this knowledge in (especially) computer science applications.

B.Sc. (I.T.) Entire Part-I (Sem II)

Course Title- Microprocessor Architecture

COURSE OUTCOMES

After completing this course, student will be able to

CO1 To study microprocessor assembly language

CO2 Write assembly language program for microprocessors

CO3 Draw and describe architecture of 8085 microcontroller

CO4 To study memory management in microprocessors.

B.Sc. (I.T.) Entire Part-I (Sem II)

Course Title- Fundamentals of Digital Design

COURSE OUTCOMES

After completing this course, student will be able to

CO1: To analyse different types of digital electronic circuit using various logical tools.

CO2: To understand the working principle, selection criteria and applications of sequential and combinational circuits.
CO3: To design and implement digital circuits
CO4: To understand the concept of memory and memory devices.

B.Sc. (IT) (Entire) II (Sem III)

Paper- Data Structure through C++

After completing this course, student will be able to
1. An understanding the basic data structures.
2. Understanding the basic search and sort algorithms.
3. The appropriation use of a particular data structure and algorithm to solve a problem .
4. Understand advanced algorithms such as quick sort, merge sort.
5. Analyze the concept of data structures through ADT including List, Stack and Queues .

B.Sc. (IT) (Entire) II (Sem III)

Paper- CPP Programming
Understand basic concepts of object oriented programming.

- Able to use various control structures to improve programming logic.
- Able to use constructor and destructor.
- Utilize the OOP techniques like operator overloading, inheritance, and polymorphism.

B.Sc. (IT) (Entire) II (Sem III)

Paper- System Analysis And Design and UML
After completing this course the student will able to:
- Define a system
- Analyze and specify the requirements of a system.
- Design system components and environments.
- Provides a visual representation of an aspect of a system.

B.Sc. (IT) (Entire) II (Sem III)

Paper- Web Technology using HTML
Adapt knowledge for creating effective web pages.
- Explain various tags used for designing website
- Apply skills for designing websites.

B.Sc. (IT) (Entire) II (Sem III)

Paper- Operating System

Learners must understand proper working of operating system.

 To provide a sound understanding of Computer operating system, its structures, functioning and
algorithms.

 To provide a understanding of operating system, its structures and functioning.

 Develop and master understanding of algorithms used by operating systems for various purposes

B.Sc. (IT) (Entire) II (Sem III)

Paper- Probability Theory and Discrete Probability Distributions

Understand and use the terminology of probability.

 Understand the importance and application of normal distribution.

 Practical Exposure to the fitting of discrete and continuous distribution by using MS-EXCEL.

B.Sc. (IT) (Entire) II (Sem III)

Paper- PHP Part I

After completion of this course student will be able to

1. Identify basic PHP syntax
2. Create basic PHP scripts
3. Know how to send data to the Web Browser

B.Sc. (IT) (Entire) II (Sem IV)

Paper- Data Structure Using CPP

At the end of this course, student should be able understand the most basic aspects of data structures including Stacks, Queue, Linked list and Tree.

 Should able to understand different sorting and searching algorithms.

B.Sc. (IT) (Entire) II (Sem IV)

Paper- Data Communication and Networking

Understand OSI Model and Networking protocols
 Understand different communication modes.
 Familiar with network basic concepts like protocols, topology etc.

B.Sc. (IT) (Entire) II (Sem IV)

Paper- Python Programming
Express proficiency in the handling of strings and functions.
 Interpret the fundamental Python syntax and semantics and be fluent in the use of Python
control flow statements.
 Determine the methods to create and manipulate Python programs by utilizing the lists.

B.Sc. (IT) (Entire) II (Sem IV)

Paper- Linux Operating System
Familiarize students with the Linux environment, and able to run commands on a standard
Linux operating system.
 Provide the skills needed to develop and customize Linux shell programs and to make
effective use of a wide range of standard Linux programming and development tools.

B.Sc. (IT) (Entire) II (Sem IV)

Paper- Descriptive Statistics– II
Students will be able to draw the descriptive statistics for the data and interpret the data
with the appropriate graphs.
 Learn how to calculate measures of central tendency and measures of dispersion

B. Sc. (I.T.) Entire Part-III (Sem V)

Course Title-(Paper 21.1) Introduction to VB.Net

COURSE OUTCOMES
After completing this course, student will be able to

1. Make basic use of Visual Studio.Net and its role in developing applications
2. Design the console applications.
3. Design the windows applications.
4. Design and Understand visual components and controls in VB.Net
5. Design and Understand control structure in VB.Net

B. Sc. (I.T.) Entire Part-III (Sem VI)

Course Title-(Paper 21.2) OOP with VB.Net and ADO.Net

COURSE OUTCOMES

After completing this course, student will be able to

1. Make basic use of Object oriented concepts and its role in developing applications
2. Describe the importance of exception handling in software
3. Identify use of error tracing tools in VB.Net.
4. Design and Understand Database Handling with ADO.Net.

B. Sc (I.T.) Entire Part-I (CBCS) Sem – I

Course Title- DSC-103: Programming using 'C' Part –I

COURSE OUTCOMES

After completing this course, student will be able to

1. Describe the important programming language and the functions.
2. Understand the C programming fundaments and structure of C Program.
3. Make basic use of GCC compiler with Linux environment
4. Design and Understand control structure.

B. Sc (I.T.) Entire Part-I (CBCS) Sem - II

Course Title- DSC-203: Programming using 'C' Part –II

COURSE OUTCOMES

After completing this course, student will be able to

1. Describe the important of array and string.
2. Understand the pointer concept and its use in dynamic memory allocation.
3. Make basic use of built in functions.
4. Design and Understand user define functions and its use in an application development.

Course Title – (Paper XVII) Object Oriented Programming with VB.Net

COURSE OUTCOMES

After completing this course, student will be able to

1. Make use of Object oriented concepts and its role in developing applications
2. Create application that uses ADO.Net.
3. Design and Understand importance of crystal report in application development.
4. Design and Understand web application development with ASP.Net.

B. Sc. (Information Technology) Entire Part-II

Semester- I

Course Title: Object Oriented Programming

Outcome of Course:

After completion of this course student should be able to:

1. Understand features of Object Oriented Programming
2. Identify problems and apply object-oriented programming paradigm to system designs.
3. Analyze and understand the functionality of program code written in an object-oriented language such as C++

Semester- I

Course Title: Advanced Object Oriented Programming

Outcome of Course:

After completion of this course student should be able to:

1. Design Components to maximize their reuse.
2. Understand the polymorphism concept and implement it using C++programming code
3. Understand concept of file handling
4. Construct C++ programming code to manipulate file

B. Sc (I.T.) Entire Part-II (CBCS)

Course Title- Operating System -Linux

COURSE OUTCOMES

After completing this course, student will be able to

1. Describe the important computer system resources and the functions.
2. Understand the process management policies and scheduling of processes by CPU
3. Evaluate the requirement for process synchronization and coordination handled by operating system
4. Describe and analyze the memory management and its allocation policies.
5. Identify use and evaluate the storage management policies with respect to different storage management technologies.
6. Identify the need to create the special purpose operating system.
7. Design and construct the following OS components: System calls, Schedulers, Memory management

systems, Virtual Memory and Paging systems.

8. Understanding the basic set of commands and utilities in Linux/UNIX systems.
9. Learn to develop software for Linux/UNIX systems.
10. Learn the C language and get experience programming in C.
11. Learn the important Linux/UNIX library functions and system calls.
12. Understand the inner workings of UNIX-like operating systems.
13. Obtain a foundation for an advanced course in operating systems.

Course Title- Web development using HTML

COURSE OUTCOMES

After completing this course, student will be able to

- Apply design research methods to build an empirical and analytical knowledge base that informs a digital product design solution.
- Create a design that supports a business strategy resulting in a successful digital product.
- Use data analytics to inform the design of meaningful user experiences.
- Use fundamental skills to maintain web server services required to host a website.
- Select and apply markup languages for processing, identifying, and presenting of information in web pages.
- Use scripting languages and web services to transfer data and add interactive components to web pages.
- Create and manipulate web media objects using editing software.
- Incorporate aesthetics and formal concepts of layout and organization to design websites that effectively communicate using visual elements.
- Combine multiple web technologies to create advanced web components.
- Design websites using appropriate security principles, focusing specifically on the vulnerabilities inherent in common web implementations.
- Incorporate best practices in navigation, usability and written content to design websites that give users easy access to the information they seek.
- Understand correct file and folder structure within computers
- Write HTML5 structural semantic markup
- Understand the Document Object Model, or DOM
- Understand relationship of HTML, CSS & JavaScript
- Create cascading style sheets (CSS) for device and browser integration
- Investigate client-side scripting uses

B. Sc (I.T.) Entire Part-II

Course Title- Descriptive Statistics

Objectives:-

- Apply various types of sampling methods to data collection.
- Understand and use the terminology of probability.
- Recognize, describe, and calculate the measures of the spread of data: variance, standard
  Deviation, and range.

B. Sc (I.T.) Entire Part-III
Course Title- Statistics-II

Objectives:-

- Understand and use the terminology of probability.
- Understand the importance and application of normal distribution.
- Practical Exposure to the fitting of discrete and continuous distribution by using MS-EXCEL.

B. Sc (I.T.) Entire Part-III
Course Title-Introduction to ERP

COURSE OUTCOMES

After completing this course, student will be able to

1. Make basic use of Enterprise software, and its role in integrating business functions
2. Analyze the strategic options for ERP identification and adoption.
3. Design the ERP implementation strategies.
4. Create reengineered business processes for successful ERP implementation.
5. Demonstrate a good understanding of basic issues in Enterprise Systems.
6. Explain the scope of common Enterprise Systems (e.g., MM, SCM, CRM, HRM, procurement)
7. Describe the selection, acquisition and implementation of enterprise systems
8. Use one of the popular ERP packages to support business operations and decision-making.
9. Communicate and assess an organization's readiness for enterprise system implementation with a professional approach in written form system.
10. Demonstrate an ability to work independently and in a group.

B. Sc (I.T.) Entire Part-III (NEP 2020)

Course Title- Software Engineering

COURSE OUTCOMES

After completing this course, student will be able to

- To understand the process of Software Engineering.
- Conceptualize the Software Development Life Cycle (SDLC) models.
- Familiarize with Software Design & its Strategies.
- Study Software Testing & Maintenance.

B. Sc (I.T.) Entire Part-III (NEP 2020)

Course Title- C# Programming

COURSE OUTCOMES

After completing this course, student will be able to

1. This course will cover the practical aspects C#.NET framework.
2. The goal of this course is to introduce the students to the basics of OOPs and windows application program.

B. Sc (I.T.) Entire Part-III (NEP 2020)

Course Title- : Core Java

COURSE OUTCOMES

After completing this course, student will be able to

1.Object oriented programming concepts using Java.
2.Knowledgeof input, its processing and getting suitable output.
3.Understand, design, implement and evaluate classes and applets
4. Understand concept of Multiprogramming and Exception Handling

B. Sc (I.T.) Entire Part-III (NEP 2020)

Course Title- : Android Programming

COURSE OUTCOMES

After completing this course, student will be able to

1.Understand Android architecture.
2. Understand the UI Components of Android and designing UI Applications.
3. Develop, design and deploy applications on Emulator as well as real device.
4. Developing applications with database connectivity to SQLite (i.e. Saving, Retrieving, Loading data).

B. Sc (I.T.) Entire Part-III (NEP 2020)

Course Title- : Machine Learning

COURSE OUTCOMES

After completing this course, student will be able to

1. Define a problem to find appropriate solutions in the field of data science and other interdisciplinary areas.
2. Classify and apply machine learning techniques to solve real world problems.
3. Apply various classification algorithms and evaluate their performance.
4. Analyze various techniques of machine learning.
5. Evaluate performance of machine learning models by using various performance evaluation parameters.
6. Construct use case based models by analyzing datasets from various domains.

B. Sc (I.T.) Entire Part-III (NEP 2020)

Course Title- : Artificial Intelligence

COURSE OUTCOMES

After completing this course, student will be able to

1. Identify problems where artificial intelligence techniques are applicable
2. Apply selected basic AI techniques; judge applicability of more advanced techniques.
3. Participate in the design of systems that act intelligently and learn from experience

B. Sc (I.T.) Entire Part-III (NEP 2020)

Course Title- : ASP.NET

COURSE OUTCOMES

After completing this course, student will be able to

1.Understand working of Asp.Net web application
2. Demonstrate Asp.Net server controls.
3. Study database operations using ADO.Net.
4. Understand importance and working of state management.

B. Sc (I.T.) Entire Part-III (NEP 2020)

Course Title- : Advanced Java

COURSE OUTCOMES

After completing this course, student will be able to

1. Develop GUI using Java
2. Handle Database using java
3. Develop dynamic web pages using servlet and JSP

B. Sc (I.T.) Entire Part-III (NEP 2020)

Course Title- : R Programming

Course Outcome: At the end of this course, student will be able to:

1. Understand the fundamental syntax of R through practice exercises.
2. Describe the control statements and functions in R.
3. Analyze a data set in R and represent findings using the appropriate R packages.
4. Use data visualization tools

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