

# **NOBLE WOMEN'S COLLEGE, MANJERI**

## **PG DEPARTMENT OF COMPUTER SCIENCE**

### **BCA**

#### **PROGRAMME OUTCOME**

The specific objectives of the Programme include

- To attract young minds to the potentially rich and employable field of computer applications.
- To be a foundation graduate Programme this will act as a feeder course for higher studies in the area of Computer Science/Applications.
- To develop skills in software development so as to enable the BCA graduates to take up self-employment in Indian and global software market.
- To train and equip the students to meet the requirements of the Software industry in the country and outside.

#### **COURSE OUTCOME**

### **SEMESTER I**

#### **BCA1B01- COMPUTER FUNDAMENTALS AND HTML**

- **CO1** Familiar with fundamental concepts of computer hardware and software
- **CO2** Have knowledge of different Number System, Digital codes and Boolean algebra
- **CO3** Understand the problem-solving aspect
- **CO4** Demonstrate the algorithm and flow chart for the given problem
- **CO5** Design a Webpage with CSS

#### **BCA2B03- PROGRAMMING LABORATORY I: LAB EXAM-HTML**

- **CO1** Analyze a webpage and identify its elements and attributes.
- **CO2** Create web pages using HTML5 and Cascading Style Sheets.
- **CO3** Design and develop a webpage with Hyperlinks.

#### **BCA1C01- MATHEMATICAL FOUNDATION FOR COMPUTER APPLICATIONS**

- **CO1** Learn the basic principles of linear algebra and vectors
- **CO2** Familiar with Determinant and Matrices.

- **CO3** Formulate Limit, Continuity and Differentiability
- **CO4** Learn the basic principles of differential and integral Calculus
- **CO5** Demonstrate a working knowledge Definite and Indefinite Integrals.
- **CO6** Learn the mathematical modelling using ordinary and partial differential equations.

### **BCA1C02- DISCRETE MATHEMATICS**

- **CO1** To equip the students with basic principles of discrete mathematics
- **CO2** To learn the mathematical logic, set theory & boolean algebra
- **CO3** To understand the basic concept of graphs and trees.

## **SEMESTER II**

### **BCA2B02- PROBLEM SOLVING USING C**

- **CO1** Interpret the basic principles of C programming
- **CO2** Acquire decision making and looping concepts.
- **CO3** Design and develop modular programming.
- **CO4** Explore usage of Arrays, strings, structures, union and files.
- **CO5** Effective utilization of pointers and dynamic memory allocation.

### **BCA2B03- PROGRAMMING LABORATORY I: LAB EXAM-PROGRAMMING IN C**

- **CO1** Enhance their analyzing and problem solving skills and use the same for writing programs in C
- **CO2** To write diversified programs using C language.

### **BCA2C03 – FINANCIAL AND MANAGEMENT ACCOUNTING**

- **CO1** To get a general introduction on accounting and its general application.
- **CO2** To get a general understanding on various tools for financial statement analysis
- **CO3** To get a general understanding on accounting procedures up to the preparation of various financial statements.
- **CO4** To get a general understanding of the important tools for managerial decision making.

### **BCA2C04 - OPERATIONS RESEARCH**

- **CO1** To formulate a real-world problem as a mathematical model. **CO2** To find solutions for the mathematical models using LPP, Assignment and Transportation methods
- **CO3** Formulate and solve problems as networks and graphs.
- **CO4** To use CPM and PERT techniques to plan, schedule and control the activities of a project.

# SEMESTER III

## **XXXXA11– PYTHON PROGRAMMING**

- **CO1** Explain basic principles of Python programming language .
- **CO2** Implement decision making and loop statements in Python,.
- **CO3** Implement GUI applications using Python .
- **CO4** Explain modular programming concepts using Python.
- **CO5** Familiarize with List, Tuple, Dictionary concepts in Python.

## **XXXXA12 -SENSORS AND TRANSDUCERS**

- **CO1** Explain resistance, inductance and capacitance transducers.
- **CO2** Perceive the concepts of temperature and pressure transducers.
- **CO3** Perceive the concepts level transducers such as and flow transducers.
- **CO4** Explain Electromagnetic transducers and radiation sensors .
- **CO5** Explain force and torque transducers and sound transducers.

## **BCA3B04 – DATA STRUCTURES USING C**

- **CO1** To be familiar with fundamental data structures and with the manner in which these data structures can best be implemented; become accustomed to the description of algorithms in both functional and procedural styles.
- **CO2** To have knowledge of complexity of basic operations like insert, delete, search on these data structures.
- **CO3** Ability to choose a data structure to suitably model any data used in computer applications.
- **CO4** Design programs using various data structures including hash tables, Binary and general search trees, graphs etc.
- **CO5** Implement and know the applications of algorithms for sorting, pattern matching.

## **BCA4B06- PROGRAMMING LABORATORY II: LAB EXAM DATA STRUCTURES**

- **CO1** Inspect and implement applications that require front-end tools.
- **CO2** Familiarizing with different data structures tools like searching , sorting, Linked List etc.

## **BCA3C05- COMPUTER ORIENTED NUMERICAL & STATISTICAL METHODS**

- **CO1** To compute solution of algebraic and transcendental equation by numerical methods like Bisection method and Newton Raphson method.

- **CO2** To recognize elements and variables in statistics and summarize qualitative and quantitative data.
- **CO3** To calculate the mean, median and mode for individual series.
- **CO4** To outline the properties of correlation and compute Karl-Pearson's coefficient of correlation.

### **BCA3C06 –THEORY OF COMPUTATION**

- **CO1** To discuss key notions of computation, such as algorithm and decidability through problem solving.
- **CO2** To explain the models of computation, including formal languages, grammars and automata, and their connections.
- **CO3** To analyze and design finite automata, pushdown automata and Turing machines.
- **CO4** To solve computational problems regarding their computability and complexity and prove the basic results of theory of computation.

## **SEMESTER IV**

### **XXXXA13– Data Communication and Optical Fibers**

- **CO1** To Acquaint with the structure of Data Communications System and its components.
- **CO2** To Familiarize with different network terminologies and transmission media.
- **CO3** To gain knowledge of the different multiplexing techniques, Telephone system, Mobile System-GSM.
- **CO4** To become familiar with the functions of a Datalink layer and Switching.
- **CO5** To acquire the knowledge of Optical Fibre Cable and its working.

### **XXXXA14- MICROPROCESSORS-ARCHITECTURE AND PROGRAMMING**

- **CO1** To study general architecture of microprocessor .
- **CO2** To write assembly language programs, both simple programs and interfacing programs.
- **CO3** To know how to interface peripheral devices with 8085 .
- **CO4** To study the architecture of 8086 microprocessor.

### **BCA4B05 – DATABASE MANAGEMENT SYSTEM AND RDBMS**

- **CO1** Gain knowledge of data base systems and data base management system software.
- **CO2** Ability to model data in applications using conceptual modelling tools such as ER Diagrams and design data base schemas based on the model.
- **CO3** Formulate, using SQL, solutions to a broad range of query and data update problems.

- **CO4** Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
- **CO5** Be acquainted with the basics of transaction processing and concurrency control.

### **BCA4B06- PROGRAMMING LABORATORY II: LAB EXAM RDBMS**

- **CO1** Make use of typical data definitions and manipulation commands.
- **CO2** Test the implementation of nested and join queries.
- **CO3** Develop simple application using views, sequences and synonyms.

### **BCA4C07- E-COMMERCE**

- **CO1** Understand basics of electronic commerce framework.
- **CO2** Understand the various models of E-Commerce.
- **CO3** Understand the basics of networks and E-marketing.
- **CO4** Understanding the security, legal and ethical issues in E Commerce.
- **CO5** Analyzing the e-payment systems and designing the payment system.

### **BCA4C08- COMPUTER GRAPHICS**

- **CO1** To understand the basics of computer graphics, different graphics systems and applications of computer graphics.
- **CO2** To learn various algorithms for scan conversion and filling of basic objects.
- **CO3** To know the use of geometric transformations on graphics objects and their application in composite form.
- **CO4** To learn different clipping methods and its transformation to graphics display device.
- **CO5** To make students familiar with different color models and image manipulation using GIMP.

## **SEMESTER V**

### **BCA5B07- COMPUTER ORGANIZATION AND ARCHITECTURE**

- **CO1** To make students understand the basic structure, operation and characteristics of a digital computer.
- **CO2** To familiarize with Computer Instruction and Interrupt Design.
- **CO3** To make students know the different types of control unit and Addressing Modes.
- **CO4** To familiarize with the Memory organization including cache memories and virtual memory .
- **CO5** To understand the I/O devices and standard I/O interfaces.

### **BCA5B08- JAVA PROGRAMMING**

- **CO1** Knowledge of the structure and model of the Java programming language.
- **CO2** Use the Java programming language for various programming technologies.
- **CO3** Develop software in the Java programming language.
- **CO4** Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements.

### **BCA6B14-PROGRAMMING LABORATORY III: LAB EXAM JAVA PROGRAMMING**

- **CO1** To learn about the Object Oriented Concepts in Java Programming.

### **BCA5B09 -Web Programming using PHP**

- **CO1** To understand basics of the Internet and World Wide Web.
- **CO2** To learn basic skill to develop responsive web applications.
- **CO3** To acquire the knowledge of HTML and CSS.
- **CO4** To understand basic concept of client side scripting language -javascript
- **CO5** To understand the server side scripting language -PHP.

### **BCA6B14-PROGRAMMING LABORATORY III: LAB EXAM PHP PROGRAMMING.**

- **CO2** To understand the practical knowledge of Web Programming using PHP.

### **BCA5B10 -PRINCIPLES OF SOFTWARE ENGINEERING**

- **CO1** To learn engineering practices in Software Development.
- **CO2** Select and implement different software development process models.
- **CO3** Extract and analyse software requirements specifications for different projects.
- **CO4** Develop some basic level of software architecture/design.
- **CO5** Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.

### **OPEN COURSES (XXX5DXX)**

### **BCA5D01-INTRODUCTION TO COMPUTERS AND OFFICE AUTOMATION**

- **CO1** Understand different types of computers
- **CO2** Learn documentation using Word processing software such as MS word and Open Office Writer
- **CO3** Learn calculations using spreadsheet MS Excel and Open Office Writer
- **CO4** Learn presentations using Open Office Impress/MS-Power Point

### **BCA5D02 - WEB DESIGNING**

- **CO1** Learn Hypertext markup language
- **CO2** Learn Web designing using HTML, Dhtml
- **CO3** Familiarize with Javascript and HTML Editor (Frontpage/Bluefish)

### **BCA5D03 -INTRODUCTION TO PROBLEM SOLVING AND C PROGRAMMING**

- **CO1** Learn problem solving and programming concept
- **CO2** Learn C programming concepts
- **CO3** Learn looping constructs
- **CO4** Acquire skills in programming using arrays, functions, structures and unions.

### **BCA5D04 -INTRODUCTION TO DATA ANALYSIS USING SPREAD SHEET**

- **CO1** Familiarize with MS Excel.
- **CO2** Acquire knowledge about Pivot Table application.

## **SEMESTER VI**

### **BCA6B11- ANDROID PROGRAMMING**

- **CO1** To gain knowledge of developing end user application using Android SDK
- **CO2** To familiarize with Android Resources
- **CO3** To acquaint with user interfaces development in Android
- **CO4** To acquire knowledge about creating menus and operating files in Android.

### **BCA6B15-PROGRAMMING LABORATORY IV: LAB EXAM OF ANDROID PROGRAMMING**

- **CO1** To learn the practical knowledge of Android Programming

### **BCA6B12- OPERATING SYSTEMS**

- **CO1** To understand the objectives, functions and types of Operating System
- **CO2** To have a basic knowledge about process, Threads, Deadlock
- **CO3** To understand the knowledge of Linux shell programming
- **CO4** To learn about CPU scheduling and memory management.

### **BCA6B15-PROGRAMMING LABORATORY IV: LAB EXAM OF SHELL PROGRAMMING**

- **CO1** To familiarize with the practical knowledge of shell programming.

### **BCA6B13- COMPUTER NETWORKS**

- **CO1** To understand about different network terminologies

- **CO2** To familiarize with different layers of network
- **CO3** To understand the functions of data link layer and network layer
- **CO4** To familiarize with the functions of Transport layer
- **CO5** To understand the concept of network security and Cryptography.

### **BCA6B17- (PROJECT WORK OR RESEARCH METHODOLOGY) AND INDUSTRIAL VISIT**

- **CO1** To acquire the implementation level knowledge and interaction with industry.

**OR**

### **BCA6B17- RESEARCH METHODOLOGY (IN LIEU OF PROJECT WORK)**

- **CO1** To acquire Research skills.
- **CO2** To define a Research problem.
- **CO3** To familiarize with the Data Collection Methods.

### **ELECTIVES**

#### **BCA6B16A -SYSTEM SOFTWARE**

- **CO1** To learn about the concept of system software
- **CO2** To understand the knowledge of Macros and macro processors
- **CO3** To Familiarize with Loaders and Linkers

#### **BCA6B16B -MACHINE LEARNING**

- **CO1** The students will be able to understand the machine learning concepts.
- **CO2** To acquire the essential mathematical and statistical foundations of machine learning.

#### **BCA6B16C- SOFTWARE TESTING & QUALITY ASSURANCE**

- **CO1** To Familiarize with the concepts of Phases of Software Project.
- **CO2** To Understand the various testing types.
- **CO3** To Understand test planning and reporting.

#### **BCA6B16D - TECHNICAL WRITING**

- **CO1** To understand the basics of technical communication
- **CO2** To learn constituents of technical written communication
- **CO3** To learn forms of technical communication.

#### **BCA6B16E -FUNDAMENTALS OF LIFE SKILL EDUCATION**

- **CO1** To familiarize with life skill education.
- **CO2** To acquire the communication skills, plan career, self-management.