NEHRU MEMORIAL COLLEGE (AUTONOMOUS)

NATIONALLY ACCREDITED WITH "A" GRADE BY NAAC

PUTHANAMPATTI,TRICHY – 621007

DEPARTMENT OF COMPUTER APPLICATION (BCA)

COURSE OUTCOME (COS)

Course Title	COURSE OUTCOME (COS
CC-I PROGRAMMING IN C	**CO1:** Summarize the basic knowledge of programming **CO2:** Understand the syntax and semantics of C language **CO3:** Apply the concepts of functions and arrays in solving real world problems **CO4:** Demonstrate structures, union and pre-processing techniques **CO5:** Develop programs using pointers and file concept
CC-II PROGRAMMING IN C LAB	**CO1:** Develop and execute programs using Operators and control Structures **CO2:** Create programs in C to solve any kind of real world problem **CO3**: Apply the programming concepts of C in the standalone applications.
AC I- Statistical Methods	**CO 1:** Acquire the concepts of Mean, Median and Standard deviation **CO 2**: Understand the knowledge of Skewness and Kurtosis, Correlation and Regression Analysis **CO 3**: Analyze various methods to find correlation **CO 4:** Apply the knowledge of axiomatic approach to independent events **CO 5:** Evaluate the Binomial, Poisson and Normal Distribution
AC II- Operations Research for Computer Applications	**CO1**: Convert standard business problems into linear programs **CO2**: Solve linear programming problems by Graphical solution, Simplex and Big-M method. **CO3:** Apply transportation techniques to find least cost route

	CO4: Apply the fundamental concept of sequencing problem.
	CO5: Evaluate the PERT and CPM.
CC-III OBJECT ORIENTED PROGRAMMING USING C++ AND DATA STRUCTURES	**CO1:** Describe the basics of OOP and the syntax of C++ language
	CO2: Apply the knowledge of functions, classes and objects for solving problem in the real world.
	CO3: Experiment the concepts of initialization and destruction of objects and Test the usage of overloading of unary and binary operators
	CO4: Demonstrate the usage of inheritance and polymorphism while solving real time problem
	CO5: Apply file concepts and solve problems related to data files.
	CO6: Implement the fundamental data structures using C++ language
CC-IV C++ AND DATA STRUCTURES LAB	**CO1:** Apply the concepts to solve problems using C++ programming language
	CO2: Implement the basic data structures using C++
	CO3: Solve problems using OOPs concept
AC-III Algebra and Calculus	**CO1**: Understand the concepts of types of matrices, successive differentiation and Laplace transform.
	CO2: Find the Eigen values and vectors, Leibnitz's theorem and its application.
	CO3: solve problems using integration
	CO4: Apply the concepts of Laplace transforms of e^{at}, t^n and integration by parts and its properties.
	CO5: Solve the second order differential equation of the type

SKBC – I DATA ANALYTICS LAB	**CO1:** Apply built in functions of spread sheet
	CO2: Generate charts for the given data in the spreadsheet and use pivot table
	CO4: Demonstrate the data analysis using Data Analysis toolbar in spreadsheet.
CC-V PROBLEM SOLVING USING PYTHON	**CO1:** Write programs to solve simple problems
	CO2: Interpret and manipulate the data structures
	CO3: Store and manipulate data using file system and handling errors
	CO4: Solve problems using OOPs concept
	CO5: Design GUI forms using Tkinter
CC-VI PYTHON LAB	**CO1:** Develop and execute programs using Operators and control Structures
	CO2: Solve programs using sequences, functions and modules
	CO3: Design and execute programs using OOPs concepts and Kinder Module
AC-IV PRINCIPLES OF ACCOUNTANCY	**CO1:** Acquire the concepts of Accounting Concepts and conventions, Journal, Ledger, Trail Balance
	CO2: Understand the knowledge of purchase, Purchase return, Sales, Sales return and Cash Book
	CO3: Apply accounting concepts in prepaid expenses and outcomes, capital and drawings by solving problems
	CO4: Evaluate the assets and replace that are envisaged
	CO5: Exhibit the accounts of branch and departments

AC-V ACCOUNTS PACKAGE LAB	**CO1:** Acquire the skills of computerized accounting system
	CO2: Enhance to create the company, groups and ledgers
	CO3: Apply the skills to preparation of final accounts with adjustments
	CO4: Evaluate the concept of inventory management.
	CO5: Analyze the report of cost centers and cost categories.
SKBC-II IMAGE EDITING LAB	**CO1:** Apply various animation techniques
	CO2: Apply various concepts of image editing using GIMP tool
	CO3: Design and execute programs using Animation concepts and different styles.
CC-VII DATABASE SYSTEMS	**CO1:** Understand the fundamentals of database system.
	CO2: Design and create tables in database and execute queries.
	CO3: Apply knowledge about file system.
	CO4: Design a database based on a data models using normalization.
	CO5: Have knowledge in network and hierarchical data base system.
CC-VIII RDBMS LAB	**CO1:** Design and implement database schema for the given problem
	CO2: Populate and query using DDL,DML,DCL,TCL prepare SQL reports
	CO3: Create implicit and explicit cursor. and create triggers, procedures and function to manipulate with required data

AC-V ROGRAMMING USING _R' LAB	**CO1:** Solve simple problems using R scripts
	CO2: Apply data structures to solve the given problem
	CO3: Parse data files using built-in functions and apply the various statistical functions and to produce high quality graphics
AC-VI DIGITAL PRINCIPLES AND FUNDAMENTALS	**CO1:** Understand the fundamentals of number system and its conversions.
	CO2: Design simplified circuits using Boolean laws and map simplifications.
	CO3: Apply the functions of basic gates to design combinational circuits.
	CO4: Describe the functions of sequential circuits.
	CO5: Categorize memory types and its functions.
NMEC-I INTERNET AND WEB DESIGN	**CO1:** Understand various text formatting tags
	CO2: Categorize head and body section tags
	CO3: Explain list and table tags
	CO4: design and develop a static HTML page
	CO5: create a user interface using HTML forms
NMEC-I BPO AND HEALTH CARE	**CO1:** explain the basics of outsourcing with its applications.
	CO2: describe the skill sets required and types of BPO in Industry perspective.
	CO3: apply various output formats and layouts.
	CO4: describe quality concepts and SPC
	CO5: illustrate outsourcing trends and HR activities of BPO.

CC-IX PROGRAMMING IN JAVA	**CO1**: Identify the distinct properties and features of Object Orientations using JAVA
	CO2: Analyze the name space, Exception conditions and concurrency condition in JAVA using package and Exception handling and Thread.
	CO3: Discuss Input/output functions with file manipulations using I/O Streams.
	CO4: Analyze GUI programming applications using AWT packages.
	CO5: Plan to Develop Java based Applications using GUI and user interface and database Connectivity
CC-X PRINCIPLES OF OPERATING SYSTEMS	**CO1:** Understand the types, design, implementation of operating system and I/O programming concepts.
	CO2: Recognize the management of main and virtual memory schemes.
	CO3: Analyze different scheduling algorithms.
	CO4: Analyze the management of devices.
	CO5: Understand information management

CC-XI DATA and COMMUNICATION NETWORKS	**CO1:** Recognize the basic concepts of computer Network throw OSI Model
	CO2: Acquire the knowledge about Signals and conversions
	CO3: Analyze the concepts of Data link Protocols and Networking switching and devices
	CO4: Illustrate the Internet communication technology and its protocols
	CO5: Describe various protocols in TCP/IP suite

CC-XII JAVA AND SYSTEM ADMINISTRATION LAB	**CO1:** Solve programs using the basic concepts in JAVA
	CO2: Apply JDBC to work with back end and build simple applications
	CO3: Apply basic commands and solve simple administrative tasks using LINUX

EC-I- MOBILE COMMERCE	**CO1:** Understand the concepts of e-Commerce
	CO2: Explain the basic terminology and techniques of mobile commerce
	CO3: Analyze the usage of mobile commerce.
	CO4: Apply the mobile commerce concepts in applications.
	CO5: Illustrate the services of business-to-business m-commerce
EC-I- CLOUD COMPUTING	**CO1:** Explain the characteristics, features and virtualization required for cloud computing
	CO2: Illustrate the basic terminology and techniques of cloud computing
	CO3: Analyze the usage and security of cloud.
	CO4: Explain collaboration on word, presentation and project management
	CO5: Apply and understand the different types of cloud apps

EC-I- BIG DATA ANALYTICS	**CO1:**Understand the concepts and characteristics of Big data
	CO2: Analysis the basic terminology and techniques
	CO3: Understand database with big data.
	CO4: Manipulate Hadoop frame work
	CO5: Discuss map reduce and Yarn
NMEC-II OFFICE AUTOMATION LAB	**CO1:** Create documents, apply formatting, editing text and paragraphs
	CO2: Create document with tables and mail merge
	CO3: Use spreadsheet for calculations and apply formatting
	CO4: Apply macro concept
	CO5: Prepare a presentation for a seminar
NMEC-II IMAGE EDITING TOOLS LAB	**CO1:** Apply various animation techniques
	CO2: Apply various concepts of image editing using GIMP tool
	CO3: Design and execute programs using Animation concepts and different styles.
CC- XII MOBILE APPS DEVELOPMENT	**CO1:** Student has the knowledge on architecture of Android software stock.
	CO2: Student get the exposure about different types of project resources
	CO3: Student can create their own application.
	CO4: Student able to enhance the application with LBS, Network features, etc.
	CO5: Students can generate the APK and Market it in.

CC- XIV WEB TECHNOLOGY	**CO1:** Design a static web page using HTML
	CO2: Validate the HTML form data using JavaScript
	CO3: Develop server side scripts using PHP
	CO4: Communicate with MySQL database from PHP
	CO5: Demonstrate mist functions and avoiding errors
CC-XV MOBILE APPS AND WEB TECHNOLOGY LAB	**CO1:** Design a static web page using HTML
	CO2: Validate the HTML form data using JavaScript
	CO3: Develop server side scripts using PHP
	CO4: Communicate with MySQL database from PHP
	CO5: Implement an application using Mobile Apps Layouts and Events
	CO6: Understand the concepts of Slide
EC-II SOFTWARE ENGINEERING	**CO1:** Illustrate basics of software engineering, various factors and planning for development process.
	CO2: Analyze the software for cost, time and effort and prepare SRS
	CO3 : Classify various design techniques and Criteria's for software development
	CO4: Apply coding standards and guidelines to create a software
	CO5: Understand various quality measures and metrics
EC-II ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEM	**CO1:**Understand AI problems and techniques
	CO2: Categorize various searching techniques.
	CO3: explain knowledge representation issues
	CO4: apply predicate logics
	CO5:illustrate expert system life cycle

EC-II COMPUTER GRAPHICS	**CO1:** design two dimensional graphics.
	CO2: apply two dimensional transformations.
	CO3: design three dimensional graphics.
	CO4: apply three dimensional transformations.
	CO5: apply clipping techniques to graphics.
	CO6: design animation sequences.
EC-III DISTRIBUTED APPLICATIONS USING .NET	**CO1:** The student will use Visual Basic.Net to build Windows applications using structured and object-based programming techniques.
	CO2: Design/develop programs with GUI interfaces
	CO3: Perform tests, resolve defects and revise existing code
	CO4: Develop dynamic web applications, create and consume web services
	CO 5: Create applications that use ADO. NET
	CO6: Use appropriate data sources and data bindings in VB.NET / ASP.Net.
EC-III SOFTCOMPUTING	**CO1:** acquire the concepts of Fuzzy and SET theory
	CO2: understand the knowledge of Optimization techniques
	CO3: illustrate the various learning methods of learning in neural networks
	CO4: apply the knowledge of neuro fuzzy models.
	CO5: identify and specify different soft computing Applications.
EC-III INTERNET OF THINGS	**CO1:** recognize the fundamentals of IOT
	CO2: acquire the knowledge of IOT architecture
	CO3: interpret the protocols used in Data link and Network layer in IOT
	CO4: classify different protocols used in different layers of IOT
	CO5: relate the service layer and application layer protocols in IoT architecture.