Progressive Education Society's
Modern College of Engineering
DEPARTMENT OF MCA

Course Outcomes

2013 Pattern

	C& C++ Programming
C101.1	**Explain the fundamentals of C programming and usage of functions.**
C101.2	**Write programs using basic features of C Language**
C101.3	**Describe Object Oriented Paradigm, classes, Constructor & destructors using C++**
C101.4	**Apply basic object oriented concepts to solve various computing problems**
C101.5	**Implement file operations in C & C++ programming for a given application.**

	Computer Organization
C102.1	**Describe function & characteristics of computer system & different Logic Gates**
C102.2	**Explain various functional units of digital computer**
C102.3	**Explain the organization of CPU**
C102.4	**Describe different processor architecture**
C102.5	**Explain basics of Parallel Computer Architecture**

	Principles of Programming Practices
C103.1	**Define fundamental concept of computer hardware, software and types of computer languages**
C103.2	**Develop analytical and logical thinking with problem solving capabilities**
C103.3	**Explain general principles of computer programming such as simple loops , decision structures and functions**
C103.4	**Design simple and complex algorithms and determine their time complexity**
C103.5	**Explain the importance of the software development process including specifications, design, implementation, testing and documentation.**

	Discrete Mathematics
C104.1	**Solve mathematical problems by using various mathematical induction approaches.**
C104.2	**Prove mathematical statements using various methods of proofs.**
C104.3	**Apply logical reasoning to solve a variety of problems.**
C104.4	**Describe and implement relations and functions.**
C104.5	**Use the basic properties of graphs and trees to model simple applications.**

	Probability and Statistics
C105.1	**Apply statistical concepts to solve basic problems**
C105.2	**Solve the problems of Discrete Distributions and Continuous Distributions.**
C105.3	**Explain various Descriptive Statistical concepts**
C105.4	**Describe Hypothesis and its estimates**
C105.5	**Analyze Categorical Data using Statistical Quality Control techniques.**
	Business Communications
C106.1	**Apply knowledge of principles of business communication.**
C106.2	**Perform self-SWOT analysis.**
C106.3	**Improve presentation skills**
C106.4	**Write technical documents and business reports**
C106.5	**Explain IT ethics & etiquette**

	C & C++ Laboratory
C107.1	**Implement basic concepts of programming using C Language**
C107.2	**Implement Modular Programming with Functions using C.**
C107.3	**Write programs using classes, Constructors & destructors using C++**
C107.4	**Apply basic Object Oriented Concepts using C++ Language.**
C107.5	**Implement File handling concepts using C and C++ language**

	Open Source tools Laboratory
C108.1	**Install various Operating Systems and implement Linux commands.**
C108.2	**Design documents using Writer, Impress and Calc.**
C108.3	**Design a web page using HTML and DHTML.**
C108.4	**Create blogs and groups for open source tools.**

	Java programming
C204.1	**Describe Software engineering, Process models and information system.**
C204.2	**Explain SDLC cycle and Requirement Engineering.**
C204.3	**Design data flow diagrams, decision tables and ERD.**
C204.4	**Describe software testing, software security, software maintenance and control and audit of information system**
C204.5	**Explain software deployment, component based software engineering, distributed software engineering and service oriented architecture.**

	Data Structures using C
C202.1	**Explain applications of basic data structures Array & Linked List**
C202.2	**Explain various data structures such as stacks, queues, trees and graphs.**
C202.3	**Describe different searching and sorting algorithms**
C202.4	**Explain file handling concepts.**

	Web Technologies
C203.1	**Explain basic components of Web Technologies.**
C203.2	**Design static web pages using HTML.**
C203.3	**Design dynamic and interactive web pages using VBScript and JavaScript.**
C203.4	**Create XML documents for web development**
C203.5	**Design dynamic website using PHP.**

	System Analysis and Design
C204.1	**Describe Software engineering, Process models and information system.**
C204.2	**Explain SDLC cycle and Requirement Engineering.**
C204.3	**Design data flow diagrams, decision tables and ERD.**
C204.4	**Describe software testing, software security, software maintenance and control and audit of information system**
C204.5	**Explain software deployment, component based software engineering, distributed software engineering and service oriented architecture.**

	Management Theory and Practices
C205.1	**Describe the Functions and activities of the Management.**
C205.2	**Explain the Organizational structure.**
C205.3	**Describe the Leadership, Team Building Models**
C205.4	**Elaborate the Conflict Management, Total Quality Management and Re-engineering Process**
C205.5	**Explain Management Information System, Customer Relationship and Supply Chain Management**
C205.6	**Elaborate Managerial Decision Making Models**

	Web Programming Laboratory
C206.1	**Design static web pages.**
C206.2	**Design dynamic and interactive web pages using VBScript and JavaScript**
C206.3	**Write scripts using XML.**
C206.4	**Create dynamic websites using PHP.**

	Java Programming Laboratory
C207.1	**Implement OOPs concepts using Java programming.**
C207.2	**Implement the concept of multithreading.**
C207.3	**Design GUI using Java Program.**
C207.4	**Write Client Side Programs**
C207.5	**Implement file handling using Java.**
C207.6	**Create connectivity using JDBC and networking concepts.**

	Data Structures Laboratory
C208.1	**Implement elementary data structures such as Arrays, linked lists using C.**
C208.2	**Demonstrate practical knowledge on the applications of stacks, queues, trees and graph.**
C208.3	**Implement different searching and sorting algorithms.**
C208.4	**Implement file handling with data structure in C Programming.**

	Advanced Java
C301.1	**Describe the use of various types of JDBC drivers.**
C301.2	**Develop web application using Servlet & JSP.**
C301.3	**Implement business logic using EJB.**
C301.4	**Develop web application with Spring MVC.**
C301.5	**Perform database operations using HQL**

	Database Management System
C302.1	**Describe the basic concepts of DBMS.**
C302.2	**Design E-R model for real world applications.**
C302.3	**Apply concepts of relational model & relational database design for database applications.**
C302.4	**Create database applications using nonprocedural & procedural query languages.**
C302.5	**Explain non-relational databases.**

	Operating Systems
C303.1	**Describe the basics of System Softwares like Assembler, Complier, Linker, Loader**
C303.2	**Evaluate the various CPU scheduling algorithms and deadlock algorithms**
C303.3	**Illustrate various memory management techniques and page replacement algorithm.**
C303.4	**Apply disk management and disk scheduling algorithms for better utilization of external memory.**
C303.5	**Explain the basic concepts of Linux OS and implement basic Shell commands.**

	Object oriented Analysis and Design
C304.1	**Describe different object oriented software development methodologies.**
C304.2	**Analyse software requirements using Use cases.**
C304.3	**Produce initial software Design using class and Object diagrams.**
C304.4	**Apply concept to produce detailed design using various UML diagrams.**

	Operations Research
C305.1	**Apply various methods of Linear Programming Problem for real world problems.**
C305.2	**Implement Transportation and Assignment Problems to map real world problems.**
C305.3	**Analyse Project management Techniques.**
C305.4	**Apply various Strategies for decision making.**
C305.5	**Use Simulation and Random numbers techniques for statistical analysis.**

	Hbase Laboratory
C306.1	**Design and implement a database schema for a real world application using entity relationship diagram as well as normalization**
C306.2	**Manipulate data from relational database using SQL Queries.**
C306.3	**Apply stored procedures and functions to access and manipulate database using PL/SQL**
C306.4	**Execute queries of non-relational database using Hbase.**
C306.5	**Explain distributed database system.**

	Advanced Java Laboratory
C307.1	**Get acquainted with J2EE environment and JDBC**
C307.2	**Implement server side application.**
C307.3	**Design Information management and processing system.**
C307.4	**Implement Enterprise level application.**
C307.5	**Build web application using Spring MVC.**
C307.6	**Apply basic concepts of Hibernate and HQL.**

	UML-Lab Umbrello
C308.1	**Implement requirement analysis by designing Use Case Diagram using UML tool for real world application.**
C308.2	**Design static structure of real world application using UML tool.**
C308.3	**Design dynamic and behavioral structure of real world application using UML tool.**

	Advanced Web Technology
C401.1	**Describe the concept of .NET Framework**
C401.2	**Explain the role of C# in .NET Framework.**
C401.3	**Define the importance of ASP.NET in .NET Framework.**
C401.4	**Describe Silverlight application.**
C401.5	**DemonstrateADO.NET applications.**
C401.6	**Describe the concept of LINQ.**

	Banking and Financial Accounting Management
C402.1	**Implement the basic Accounting concepts in the banking and financial applications**
C402.2	**Apply the basics of cost accounting concepts in real world problem**
C402.3	**Implement the working capital concepts.**
C402.4	**Use the concepts of banking domain**

	Computer Networks and Information Security
C403.1	**Describe various data communication devices and their functions.**
C403.2	**Explain the roles and services of protocols in networking.**
C403.3	**Explain security and cryptographic algorithms.**
C403.4	**Explain Secure binding of public and private values and network infrastructure services.**

	Elective-I Information System Audit
C404.1	**Describe Information System audit concepts and purpose of controls in information system environment.**
C404.2	**Evaluate General and Business Process Application and Management Controls of Information System environment**
C404.3	**Recognize the susceptibility of errors and remedies in processes involving Information Technology**
C404.4	**Provide assurance regarding IS Audit objectives to IT Enabled services by using ISA guidelines.**
C404.5	**Use of Information systems audit standards with COBIT framework**

	Elective-I Cyberlaws
C405.1	**Describe the concept and Social issues of Cyber space.**
C405.2	**Discuss the different IT-Act.**
C405.3	**Explain the various cybercrimes.**
C405.4	**Distinguish the Intellectual Property Protection of Cyberspace**
C405.5	**Explain the concept of Privacy and data protection.**

	Advanced Database Management System
C406.1	**Implement query processing techniques and respective algorithms**
C406.2	**Characterize Centralized databases and Parallel Databases applications**
C406.3	**Identify Distributed Database Process, Architecture, and Design Principles.**
C406.4	**Design, Develop and analyze Object Based Database**
C406.5	**Design and code data transfer scripts using XML languages**
C406.6	**Analyze and evaluate variety of NoSQL databases**

	Web Technology Laboratory
C407.1	**Explain .NET Framework.**
C407.2	**Develop C#.Net Applications.**
C407.3	**Design Web Applications using ASP.NET**
C407.4	**Process data in ASP.NET using XML.**
C407.5	**Describe SilverLite and LINQ.**

	Advanced DBMS Laboratory
C408.1	**Implement the basic concepts of database using RDBMS & SQL**
C408.2	**Solve the complex queries of SQL**
C408.3	**Explain the setup of distributed Database environment.**
C408.4	**Implement object oriented queries using SQL**
C408.5	**Design the database using XML and solve XML queries**

	Network and Security Laboratory
C409.1	**Implement different networking commands using CISCO packet writers.**
C409.2	**Describe campus LAN Design and testing of LAN using ping command.**
C409.3	**Implement Echo server using C/C++/Java programming language.**
C409.4	**Configure Web Server and Client.**
C409.5	**Implement Symmetric and Asymmetric key cryptographic algorithm using C Programming.**

	Recent Technologies in IT
C501.1	**Describe LAMP Technology.**
C501.2	**Illustrate various CRUD Operations.**
C501.3	**Implement concept of OOP using PHP.**
C501.4	**Apply file handling concepts using PHP.**
C501.5	**Develop session Management and cookies using PHP.**

	Software Testing and Quality Assurance
C502.1	**Describe software quality, Quality control, quality assurance and process improvement.**
C502.2	**Design Test Plan, manual Test Cases for software projects.**
C502.3	**Apply software testing Methodologies like White Box and Black Box.**
C502.4	**Explain various software testing types.**
C502.5	**Describe Defect management for software system.**
C502.6	**Explain software testing automation.**

	Software Engineering
C503.1	**Describe various software development and process models.**
C503.2	**Explain the Preliminary Planning of an IT Project.**
C503.3	**Explain software Project Management.**
C503.4	**Explain the dependability properties and security specification in software development.**
C503.5	**Explain different software architectures and product matrices used for software development.**

	Data warehousing, Data mining And Business Intelligence
C504.1	**Perform operations on Data Warehouse using OLAP tool.**
C504.2	**Describe process of data mining and different statistical techniques to know the data.**
C504.3	**Solve real data mining problems by using the right tools to find interesting patterns.**
C504.4	**Describe a Business Intelligence Fundamentals, Architecture .**
C504.5	**Identify the different Business intelligence reporting tools.**

	Elective-II Animation and Gaming
C505.1	**Explain concept of graphics and its algorithms.**
C505.2	**Describe the basics of types, techniques and principles required to develop animation application.**
C505.3	**Describe basic concepts and development platform of Gaming applications**
C505.4	**Explain structure of game and core architecture using state controls in Java.**

	Elective-II Mobile Computing
C506.1	**Describe the concept and technique of Wireless telephony.**
C506.2	**Explain the concept of wireless networking.**
C506.3	**Describe data management issue of mobile wireless network.**
C506.4	**Design and create mobile application.**
C506.1	**Describe the concept and technique of Wireless telephony.**

	Recent Technologies in IT Laboratory
C507.1	**Install and configure LAMP server.**
C507.2	**Implement CRUD Operations using MySQL, HTML.**
C507.3	**Develop an application using session management.**
C507.4	**Implement PHP Program using File handling.**
C507.5	**Create a program using Google API.**

	Software Testing and Quality Assurance Laboratory

C508.1	**Design Test Plan, manual Test Cases for given real world applications.**
C508.2	**Design White Box and Black Box testing test cases for real world applications**
C508.3	**Prepare Defect Repository for real world applications**
C508.4	**Use Open Source testing tools such as selenium IDE for GUI testing.**

	Mini Project
C509.1	**Develop team building skills.**
C509.2	**Apply software development life cycle to real life projects**
C509.3	**Apply technologies learnt during program to real life projects.**

	Major Project
C601.1	**Analyze real life projects.**
C601.2	**Provide solutions to real life projects.**
C601.3	**Develop team building skill and communicate effectively with stakeholders of project**

	Seminar on domain of Major Project
C602.1	**Review the literature.**
C602.2	**Improve the presentation and communication skill.**
C602.3	**Enhance domain knowledge.**
C602.4	**Improve Technical writing skills.**