## Course Outcomes
## Academic Year 2018-19

| 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. |

## Course Outcomes
## Academic Year 2018-19

| 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. |

## Course Outcomes
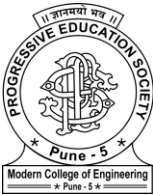## Academic Year 2018-19

| 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. |

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## Course Outcomes
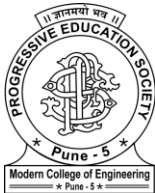## Academic Year 2018-19

| 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. |

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## Course Outcomes
## Academic Year 2018-19

| 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. |

## Course Outcomes
## Academic Year 2018-19

| 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. |
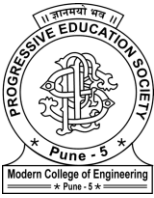
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## Course Outcomes
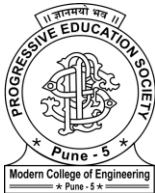## Academic Year 2018-19

| 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 |
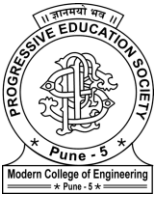
## Course Outcomes
## Academic Year 2018-19

| 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 |

## Course Outcomes
## Academic Year 2018-19

| 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.** |

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## Course Outcomes
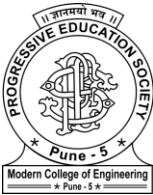## Academic Year 2018-19

| 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. |

## Course Outcomes
## Academic Year 2018-19

| 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. |