

## **Course Outcomes**

### **Course Code –CS-101- Computer Fundamental**

- CO-1:** Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming
- CO-2:** Understanding of basic computer hardware architecture and be able to design fundamental logic circuits.
- CO -3:** gain knowledge about five generations of computer system.
- CO-4:** understand the concept and need of primary and secondary memory.

### **Course Code –CS-102- Digital Electronic**

- CO-1:** Understand the concept of Number System, Logic Gates, Boolean Laws, Theorems, flip flops and counter.
- CO-2:** Use De Morgans Theorem to simplify a negated expression.
- CO-3:** Create circuits to solve problems using gates to replicate all logic functions.

### **Course Code –CS-103- Microprocessor-I**

- CO- 1:** Design system using memory chips and peripheral chips for 16 bit 8086 Microprocessor.
- CO-2:** Understand and devise techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.
- CO-3:** The program prepares students to successfully compete for employment in Electronics, Manufacturing and Embedded fields.

### **Course Code –CS-104- C Programming-I**

- CO-1:** Illustrate the flowchart and design an algorithm for a given problem and to develop IC programs using operators
- CO -2:** Exercise user defined functions to solve real time problems
- CO -3:** Inscribe C programs that use Pointers to access arrays, strings and functions
- CO -4:** Exercise files concept to show input and output of files in C

**Course Code –CS- 105- Communication skill-I**

- CO- 1:** Describe the breadth and depth of the communication studies discipline
- CO -2:** Effectively deliver oral presentations for various audiences and contexts
- CO -3:** Engage in critical thinking with regard to message analysis

**Course Code –CS- 106-Mathematical Foundation**

- CO- 1:** apply mathematical foundations to the discipline of computer science
- CO - 2:** analyze the complexity and computability of algorithmic solutions

**B.Sc.(C.S.)F.Y.(Sem-II)**

**Course Code –CS- 201-Data Structure**

- CO- 1:** Ability to analyze algorithms and a algorithm correctness.
- CO-2:** Students will be able to use linear and non-linear data structures like stacks, queues , linked list etc

**Course Code –CS- 202- Operating System**

- CO- 1:** To understand the services provided by and the design of an operating system.
- CO -2:** To understand the structure and organization of the file system.
- CO -3:** Students should understand the data structures and algorithms used to implement an OS.

**Course Code –CS- 206- Numerical Computational Method**

- CO- 1:** Solve an algebraic or transcendental equation using an appropriate numerical method.
- CO -2:** Perform an error analysis for a given numerical method.
- CO -3:** calculate a definite integral using an appropriate numerical method

**B.Sc.(C.S.)S.Y.(Sem-III)**

**Course Code –CS- 301-Advance Data Structure**

**CO-1:** Design and analyze programming problem statements.

**CO-2:** Choose appropriate data structures and algorithms, understand the ADT/libraries, and use it to design algorithms for a specific problem.

**CO-3:** Describe the hash function and concepts of collision and its resolution methods

**Course Code –CS- 302- Unix Operating System**

**CO - 1:** Documentation will demonstrate good organization and readability.

**CO -2:** Ability to read and understand specifications, scripts and programs.

**CO-3:** Be able to demonstrate knowledge in applying system software and tools available in modern operating system (such as threads, system calls, semaphores, etc.) for software development.

**Course Code –CS- 303- Pc Maintenance**

**CO-1:** Learn about power supplies and the skills to trouble-shoot various power-related problems.

**CO-2:** understand basic concept & structure of computer hardware & networking

**CO-3:** integrate the PCs into Local Area Network & re-install operating systems and various shipboard applications.

**Course Code –CS- 304- Programming in C++**

**CO-1:** Demonstrate a thorough understanding of modular programming by designing programs that require the use of programmer-defined functions.

**CO-2:** Demonstrate a thorough understanding of the object-oriented programming concepts of encapsulation, data abstraction and composition by designing and implementing classes including the use of overloaded functions and constructors.

**CO -3:** Demonstrate a thorough understanding of the concept of pointers and dynamic memory allocation by designing and implementing programs using pointers and dynamic memory allocation.

**CO-4:** Demonstrate proficiency in implementing data validation code, performing unit testing, and developing test plans while implementing robust solutions to the assignments in this course.

### **Course Code –CS- 305- Database Management System**

- CO- 1:**Differentiate database systems from file systems by enumerating the features provided by database systems and describe each in both function and benefit.
- CO -2:**Formulate, using SQL, solutions to a broad range of query and data update problems.
- CO -3:**Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
- CO-4:**Use an SQL interface of a multi-user relational DBMS package to create, secure, populate, maintain, and query a database.

### **Course Code –CS- 306- Database Management System**

- CO-1:** How to apply discrete and continuous probability distributions to various business problems.
- CO-2:** demonstrate knowledge of, and a critical understanding of, statistical methodologies .
- CO -3:**understand and apply a range of statistical techniques based on the main theories and concepts which comprise the syllabus, including the central limit theorem
- CO -4:**find/calculate moments and expected values of random variables and functions of random variables; use generating functions.

### **B.Sc. (C.S.) S.Y.( Sem-IV)**

### **Course Code –CS- 401- Software Engineering**

- CO- 1:**Model the structure and behavior a software system the UML class diagrams and state diagrams.
- CO -2:**Design a solution to a given problem using one or more design patterns and implement the design in a programming language.
- CO-3:**Apply software testing and quality assurance techniques at the module level, and understand these techniques at the system and organization level.
- CO -4 :** Work collaboratively in a small team environment to develop a moderate-sized software system from conceptualization to completion, including requirements elicitation, system modeling, system design, implementation, unit and system testing, integration, source code management configuration management, and release management.

**CO -5:**Prepare technical documentations and make presentations on various aspects of a software development project, including the technical aspects (architecture, design, quality assurance) as well as the managerial aspects (planning, scheduling, and delivery).

**Course Code –CS- 402- Fedora**

**CO- 1:** to study the concept of kernel shell and file system structure.

**CO- 2:** understand the Linux operating system

**Course Code –CS- 403- Basic of Networking**

**CO- 1:**Importance of data networks and the Internet in supporting business communications and everyday activities

**CO- 2:** Communication works in data networks and the Internet

**CO -3:**Describe the operation of protocols at the OSI data link layer and explain how they support communications

**CO -4:**Analyze the operations and features of common application layer protocols such as HTTP, Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP), Simple Mail Transfer Protocol (SMTP), Telnet, and FTP.

**Course Code –CS- 404- Core Java**

**CO- 1:** Implement Object Oriented Programming Concepts

**CO- 2:** Use and create packages and interfaces in a Java program

**CO -3:** Use graphical user interface in Java programs

**CO -4:** Implement exception handling in Java

**Course Code –CS- 405- Web fundamental**

**CO- 1:**Select and apply markup languages for processing, identifying, and presenting of information in web pages.

**CO- 2:** Create and manipulate web media objects using editing software.

**CO -3:** Use fundamental skills to maintain web server services required to host a website.

**B.Sc. (C.S.) T.Y. ( Sem-V)**

**Course Code –CS- 501- Software Cost Estimation**

**CO- 1:** Apply the principles and processes of software engineering project enactment.

**CO- 2:** Perform a comprehensive feasibility analysis.

**CO -3:** Execute a complete requirements negotiation process.

**Course Code –CS- 502- Basic of Android O.S**

**CO- 1:** Understand how Android™ applications work, their life cycle, manifest, Intents, and using external resources

**CO- 2:** Use Android's communication APIs for SMS, telephony, network management, and internet resources

**CO -3:** Utilize the power of background services, threads, and notifications

**Course Code –CS- 503- Core Java**

**CO- 1:** Implement Object Oriented Programming Concepts

**CO- 2:** Use and create packages and interfaces in a Java program

**CO -3:** Use graphical user interface in Java programs Create Applets

**CO -4:** Implement exception handling in Java

**CO -5:** Implement Multithreading

**Course Code –CS- 504- Basic of Computer Graphics**

**CO- 1:** Understand the structure of modern computer graphics systems

**CO- 2:** Understand the basic principles of implementing computer graphics primitives

**CO -3:** Familiarity with key algorithms for modeling and rendering graphical data

**CO -4:** Develop design and problem solving skills with application to computer graphics

**Course Code –CS- 505- prog. With PHP**

**CO- 1:** Understand how server-side programming works on the web.

**CO- 2:** PHP Basic syntax for variable types and calculations.

**CO- 3:** Creating conditional structures

- CO- 4:** Storing data in arrays
- CO- 5:** Using PHP built-in functions and creating custom functions
- CO- 6:** Understanding POST and GET in form submission.
- CO- 7:** How to receive and process form submission data.

### **B.Sc. (C.S.) T.Y( Sem-VI)**

#### **Course Code –CS- 601- Software Quality and Testing**

- CO- 1:** Create test strategies and plans, design test cases prioritize and execute them.
- CO- 2:** Manage incidents and risks within a project.
- CO- 3:**Contribute to efficient delivery of software solute ones and implement improvements in the software development processes.
- CO-4:** To gain expertise in designing, implementation and development of computer based systems and IT processes.

#### **Course Code –CS- 602- Android Application development**

- CO- 1:** Install and configure Android application development tools.
- CO- 2:** Design and develop user Interfaces for the Android platform.
- CO- 3:** Save state information across important operating system events.
- CO- 4:** Apply Java programming concepts to Android application development.

#### **Course Code –CS- 603- Theory Of Computation**

- CO-1:** Master regular languages and finite automata.
- CO-2:** Master Context-free languages, push-down automata, and Turing recognizable languages.
- CO-3:** Be exposed to a broad overview of the theoretical foundations of computer science.
- CO-4:** Be familiar with thinking analytically and intuitively for problem- solving situations in related areas of theory in computer science.

### **Course Code –CS- 607-e-Commerce**

**CO-1:** Demonstrate an understanding of the foundations and importance of E-commerce

**CO-2:** Analyze the impact of E-commerce on business models and strategy

**CO-3:** Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra-organizational.

**CO-4:** describe the key features of Internet, Intranets and Extranets and explain how they relate to each other.

### **Course Code –CS- 608- Ethics And Cyber Law**

**CO-1:** Students identify and analyze statutory, regulatory, constitutional, and organizational laws that affect the information technology professional.

**CO-2:** Evaluate how doing business on the Internet may subject you and your company to the laws, regulatory agencies, and judicial systems of multiple states and/or foreign countries.

### **Course Code –CS- 610- Major Project**

**CO-1:** formulate a research project complete with aims and goals

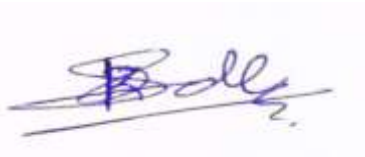
**CO-2:** conduct a thorough literature survey for research project and write a report

**CO-3:** identify major problems and obstacles to be overcome in completing project

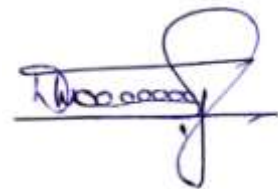
**CO-4:** Longitudinal view of the student experience from 1st to final year including key decision-making episodes

**CO-5:** Dissemination activities including conferences, papers and final report

**CO-6:** Integrated data set related to retention and methodology for continued analysis



Head



Principal