

## All Subject Course outcomes(CO)

Department of Computer Science &amp; Engineering upto 2024-25

Sem-I	Name of course/Code	Statement (Course outcomes)
1	ENGLISH AND COMMUNICATION SKILLS-I CODE--991001(C101)	<b>On completion of this course student will be able to:</b> 1. Use correct pronunciations. 2. To write letters, paragraph and Translation of a simple passage from Hindi to English. 3. Use grammatically correct sentence in day to day communication. 4. Understand methods of Communication: Verbal and Non verbal.
2	APPLIED MATHEMATICS – I CODE-991002 (C102)	<b>On completion of this course student will be able to:</b> 1. Apply the concepts and principles of Algebra to solve simple engineering problem. 2. Solve simple problems using concepts of Trigonometry. 3. Solve problems based on complex numbers. 4. Solve simple problems using concepts of Differential Calculus.
3	APPLIED PHYSICS-I CODE-991003 (C103)	<b>On completion of this course student will be able to:</b> 1. Understand physical quantities with their unit and dimensions for precise measurements and estimate the errors in measurements. 2. Understand the use of addition, subtraction, product, resolution of vector quantities.relationship of force with momentum and impulse to resolve the engineering applications. 3. Identify the linear motion and rotational motion. Resolution of Application of rotational motion in transport Analyses and apply the work, power, energy. 4. Analyzing the physical properties of material & their use Identify good and bad conductors of heat. 5. Understand the basic principles of heat and measure the temperature using various thermometers. concept of SHM, Wave motion and Free, forced and resonant vibration ,sound and acoustics of buildings
4	APPLIED CHEMISTRY-I CODE-991004 (C104)	<b>On completion of this course student will be able to:</b> 1. Explain various properties of material depending upon Atomic Structure, bond formation and Classification of Elements. 2. Explain the importance of pH Hard and soft water &Concept of solution and classification 3. Explain the concept of Electrochemistry and various types of catalysis and catalyst industrial applications. 4. Explain the general concept of pollution and pollutants and type of pollution.
5	COMPUTER FUNDAMENTALS CODE: 991005 (C105)	<b>On completion of this course student will be able to:</b> 1. Describe computer hardware and software. 2. Solve problems based on number system and basic concept of operating system & network and internet. 3. Use basic formatting and data entry features using MS-word. Create new presentation and apply basic formatting features: Use MS-PowerPoint, MS–Excel Work with graphics/clipart 4. U nderstand Scope and role of Information Technology, Ecommerce, e-Governance.
6	ENGINEERING GRAPHICS-I CODE-991006 (C106)	<b>On completion of this course student will be able to:</b> 1. Choose appropriate line and dimensioning style for a given geometrical entity. Use drawing equipment, instruments and materials effectively. 2. Choose appropriate scale factor for the drawing as per given situation like Projection of solids, such as cylinder, cone, cube, Prism, Pyramid. 3. Develop the ability to draw Civil engineering sanitary fitting symbols , Electrical fitting symbols for interior installations, Electronic symbols. 4. Work with Qcad Window, Drawing Tools, and Snap Tools.
7	GENERAL WORKSHOP PRACTICE CODE-991007 (C107)	<b>On completion of this course student will be able to:</b> 1. Identify different workshop related basic components and their uses. 2. Describe the tools used in fitting shop 3. Describe the tools used in carpentry shop. 4. Describe the tools used in electric shop.

## Semester-II-CO

II SEMESTER	Name of course	Statement (Course outcomes)
1	ENGLISH AND COMMUNICATION SKILLS-II CODE-992001 (C108)	<b>On completion of this course student will be able to:</b> 1. Develop skills to Reading Literature: Fiction and Poetry 2. Advanced Specific writing skills 3. Barriers to Communication. Listening as a Tool of Communication.
2	APPLIED MATHEMATICS-II CODE-992002 (C109)	<b>On completion of this course student will be able to:</b> 1. Solve mathematical problems based on Integral Calculus. 2. Solve mathematical problems based on Co-ordinate Geometry 3. Solve mathematical problems based on Ordinary Differential. 4. Solve mathematical problems based on Statistics.
3	APPLIED PHYSICS-II CODE-992003 (C110)	<b>On completion of this course student will be able to:</b> 1. Understand the properties of Structure of atom, Origin of Spectra and optics their application 2. Basics of electrostatics, capacitance and electricity and their application. 3. Basic concept of electromagnetism and its application. 4. Understand basic concept of semiconductor and devices like diode and rectifier. 5. Understand basic concept of electromagnetic spectrum, lasers fibre optics.
4	APPLIED CHEMISTRY-II CODE-992004 (C111)	<b>On completion of this course student will be able to:</b> 1. Introduction of Metallurgy, Fuels and combustion and Corrosion and its Prevention. 2. Identifies different types of lubricants and Importance of additives in lubricants. 3. Understand Silicate Technology like cement and glass. 4. Classification of Organic Compounds, functional group, Homologous Series. IUPAC system of nomenclature 5. Introduction and Definition of Polymers like plastic and rubber.
5	ENVIRONMENTAL SCIENCE & ENERGY MANAGEMENT (CODE:992005) (C112)	<b>On completion of this course student will be able to:</b> 1. Take care of issues related to environment conservation and disaster management while working as diploma engineer. 2. State the major cause so far, water and noise pollution 3. Enhance knowledge about engineering aspects of Environment 4. Explain the concepts of Energy Conservation efficiency and energy Audit. 5. Describe the working of Renewable Energy source.
6	ENGINEERING GRAPHICS- II CODE-992006 (C113)	<b>On completion of this course student will be able to:</b> 1. Introduction to Section and development of surface of Solids like Prisms, cube etc. 2. Nomenclature and drawing of threads, Nuts & Bolts, Screws, Studs & Washers, Keys and Cotters. 3. Free hand sketching Rivets and Riveted Joints. 4. Drawing Lines, Circles or Arcs and blocks using QCAD Window.
7	GENERAL WORKSHOP PRACTICE-II (CODE-992007) (C114)	<b>On completion of this course student will be able to:</b> 1. Understand the function and Sketch & Label Details of sheet metal shop 2. Understand the function and Sketch & Label Details of welding shop 3. Understand the function and Sketch & Label Details of black smithy shop 4. Understand the function and Sketch & Label Details of electronic shop. 5. Understand the function and Sketch & Label Details of plastic moulding.

III SEMESTER	Name of course	Statement (Course outcomes)
1	INTERNET OF THINGS Code- 053001	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Interface and maintain key-board, printer, and mouse, monitored along with the other computer system related device.</li> <li>2. Understand building blocks of Internet of Things and characteristics.</li> <li>3. Understand the concepts of Internet of Things and can able to build IOT applications</li> </ol>
2	DATA COMMUNICATION  Code- 053002	<p><b>On completion of this course student will be able to:</b></p> <p>The course provides the student with:</p> <ol style="list-style-type: none"> <li>1. Principles of Computer Communication and Network Software's TCP/IP and OSI reference models.</li> <li>2. Principle of digital data transmission, types of Network Topologies, Errors in Communication and deal it.</li> <li>3. Network Device involved in Data Communication. Describe routing and congestion in network layer with routing algorithms and classify IPV4 addressing scheme</li> <li>4. Concept of transport layer Network Device involved in Data Communication</li> </ol>
3	DIGITAL TECHNIQUES  Code- 053003	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Understand Semi Conductors Basics and Number representation.</li> <li>2. Apply logic gates and solve problems using Boolean Algebra.</li> <li>3. Understand and apply Arithmetic Circuits and Combinational logic circuits</li> <li>4. Understand basic principle of operation of flip flops, Counters and registers</li> </ol>
4	OFFICE APPLICATION  Code- 053004	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Create and format MS word document.</li> <li>2. Create and format MS excel sheet.</li> <li>3. Create and format MS access data base.</li> <li>4. Create and format MS power point presentation.</li> <li>5. Create e-mail and google docs using internet.</li> </ol>
5	OPERATING SYSTEMS  Code- 053005	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Understand the basics of operating systems like types and views of operating systems</li> <li>2. Describe the various CPU scheduling algorithm sand remove dead locks.</li> <li>3. Explain various memory management techniques and concept to thrashing</li> <li>4. Recognize files interface, protection and security mechanisms.</li> <li>5. Explain the various features of distributed OS like UNIX, Linux, windows etc.</li> </ol>
6	PROGRAMMING IN C  Code- 053006	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Define Program, Algorithm and flowchart and Describe the concepts of Constants, Variables, Data types and operators in C.</li> <li>2. Develop programs using input and output operations. Understand the structure and usage of different looping and branching statements.</li> <li>3. Implement arrays and string handling functions. in your C program.</li> <li>4. Develop user-defined functions, structures &amp; union and pointer.</li> <li>5. To understand the dynamic data structure and memory management.</li> </ol>

IV SEMESTER	Name of course	Statement (Course outcomes)
1	COMPUTER NETWORK AND SECURITY  Code-054001	<b>On completion of this course student will be able to:</b> 1. Identify and analyze security risks associated with networked systems. 2. Study about Cryptography and different Cryptography Algorithms. 3. Know the applications of Network Security. 4. know about Cyber Security and Indian IT Act
2	COMPUTER SYSTEM ORGANISATION AND ARCHITECTURE  Code- 054002	<b>On completion of this course student will be able to:</b> 1. Know the fundamental blocks of computer and Register Transfer and Micro Operations. 2. Programming the basic Computer as Micro Programmed Control 3. Understand the theory and architecture of central processing unit. 4. Know about the computer arithmetic 5. Realize the function of I/O in different operation modes.
3	DATA STRUCTURES USING C  Code- 054003	<b>On completion of this course student will be able to:</b> 1. Understand the concept of top down, bottom up approach of algorithm design, space and time complexity. 2. Understand basic data structures such as arrays, linked lists, stacks and queues. Properties of Recursive algorithms/functions 3. Explain Linked lists and its implementation 4. Solve problem involving graphs, trees and heaps 5. Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data.
4	INTERNET AND WEB TECHNOLOGY  Code- 054004	<b>On completion of this course student will be able to:</b> 1. Explain the history of the internet and related internet concepts and Demonstrate the important HTML tags for designing static pages. 2. Design and develop basic web pages using HTML5 and CSS. 3. Utilize the concepts of client side scripting using Java Script. 4. Utilize the concepts of server side scripting (JSP)
5	RELATIONAL DATA BASE MANAGEMENT SYSTEMS  Code- 054005	<b>On completion of this course student will be able to:</b> 1. Define data, database, database Management systems and Study about architecture of DBMS. 2. Know about Data Modeling using E.R. Model (Entity Relationship Model) and Relational Model. 3. Explain normalization and explain different types of Normal Forms. Create Normalized Database structure files. 4. Learn and apply structured query language (SQL) for database definition and database manipulation.
6	OBJECT ORIENTED CONCEPTS  Code-054006	<b>On completion of this course student will be able to:</b> 1. Know the paradigms of programming languages and understand the concepts of Object Oriented Programming. 2. Describe the concepts of data, functions, classes & objects. 3. Classify inheritance with the understanding of early and late binding, usage of exception handling, generic/programming. 4. Describe the concept of function overloading, operator overloading, virtual functions and polymorphism. 5. concept of File and Streams

Sem-V	Name of course	Statement (Course outcomes)
1	<p style="text-align: center;">JAVA PROGRAMMING</p> <p style="text-align: center;">Code- 055001</p>	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Understand Java Fundamentals like Object-Oriented Programming (OOP) Concepts: classes, objects, inheritance, polymorphism, and encapsulation.</li> <li>2. Design and explain about the control structures used in Java. Use of Arrays to implement Java programs.</li> <li>3. Define Class with the attributes and methods. Understand the need for interfaces. Implement Interfaces in classes.</li> <li>4. Design Applets and AWT Controls.</li> <li>5. Understand the concepts of multithreading and I/O Streams in Java, know connecting Java applications with databases using Java Database Connectivity (JDBC).</li> </ol>
2	<p style="text-align: center;">SOFTWARE ENGINEERING</p> <p style="text-align: center;">Code- 055002</p>	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Define Software Engineering. Understand the characteristics of Software Engineering. Explain different software development models.</li> <li>2. Plan a software engineering process life cycle, including the specification, design, and implementation.</li> <li>3. Understand the concepts of Software quality assurance and Maintenance. Identify and manage risks.</li> <li>4. Describe testing and types of testing used in software engg. like black box and white box testing.</li> </ol>
3	<p style="text-align: center;">COMPUTER HARDWARE AND SERVICING</p> <p style="text-align: center;">Code- 055003</p>	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Know and explain the major components that make up the system unit.</li> <li>2. Install and maintains Keyboard, Mouse, Printer and Scanners, Primary and Secondary Memory, Displays and Graphic Cards etc. along with the computer system.</li> <li>3. Know power supply unit of system like SMPS, BIOS and POST.</li> <li>4. Required background of installation, maintenance and testing of peripheral with Laptops.</li> <li>5. Understand the basic components and tools used in servicing of Mobile phones. Know to install the software required for mobile phones and to maintain it. Troubleshoot the problems in Mobile Phones</li> </ol>
4	<p style="text-align: center;">ANDROID APPLICATION DEVELOPMENT</p> <p style="text-align: center;">Code- 055004</p>	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Explain the concept of Open source mobile technology.</li> <li>2. Describe Android architecture framework.</li> <li>3. Design Android UI Layout and Develop Event driven Programming in Android</li> <li>4. Develop application with menus and dialog boxes</li> <li>5. Develop applications with database.</li> </ol>
5	<p style="text-align: center;">MINOR PROJECT WORK</p> <p style="text-align: center;">Code- 055005</p>	<p><b>On completion of this course student will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Implement the theoretical and practical knowledge gained through the curriculum into an application suitable for a real practical working environment preferably in an industrial environment</li> <li>2. Develop software packages or applications to implement the actual needs of the community.</li> <li>3. Get exposure on industrial environment and its work ethics. Understand what entrepreneurship is and how to become an entrepreneur.</li> <li>4. Learn and understand the gap between the technological knowledge acquired through curriculum and the actual industrial need and to compensate it by acquiring additional knowledge as required.</li> <li>5. Carry out cooperative learning through synchronous guided discussions within the class in key dates, asynchronous document sharing and discussions, as well as to prepare collaborative edition of the final project report.</li> </ol>

VI SEMESTER	Name of course	Statement (Course outcomes)
1	CONCEPT OF .NET TECHNOLOGY Code-056001	<b>On completion of this course student will be able to:</b> 1. Describe the architecture of Dot Net Technology. List the major elements of the .NET Framework 2. Describe the basic structure of a C# .NET project and use the main features 3. Develop multiple form and menu based .Net applications 4. Develop small ADO.net based database related .Net application 5. Develop Window applications using XML as back end database
2	DATA MINING & Warehousing Code- 056002	<b>On completion of this course student will be able to:</b> 1. Develop clear understanding of data warehousing and mining. 2. Know Data Mining Functions, Techniques and application. 3. Know Data Mining Techniques and application.
3	MULTIMEDIA SYSTEM code: 056003	<b>On completion of this course student will be able to:</b> 1. Understand Basic concepts of Multimedia 2. Defining Objects For Multimedia Systems 3. Understand fundamentals of multimedia Data And Standards. 4. Understand fundamentals of multimedia devices and Making Multimedia 5. Understand fundamentals of Multimedia For Internet
4	OPEN SOURCE TECHNOLOGY (CODE: 056004 )	<b>On completion of this course student will be able to:</b> 1. Understand the need, advantages and disadvantages of Open Source software. 2. Install and Configure of PHP on Windows. Understand the basic concepts of PHP. 3. Know how to connect MY SQL database and closing connection. Write Simple MY SQL Programs. 4. Understand the basics of Python. Knowing the building blocks of python language Knowing the development process of a Python program, Understanding file handling using python 5. Discuss about the Apache Web Server and Configuring the server.
5	MAJOR PROJECT (CODE: 056005)	<b>On completion of this course student will be able to:</b> 1. Project work aims to develop innovative skills in student to the various industries dealing with computer and software's. 2. In Major project student will develop software packages or applications to implement the actual need of the community. 3. Work in a group and plan and organize the task allotted within a given stipulated time.
6	Employable Skills Code: 016055	<b>On completion of this course student will be able to:</b> 1. Communicate effectively. 2. Develop competent qualities required of an engineer. 3. Lead a project and Enhance the ability of problem solving. 4. Work in a group and plan and organize the task allotted within a given stipulated time. 5. Know about Rules & Ethics.

HOD(Deptt of CSE)