

Panskura Banamali College (Autonomous)

Panskura R.S., Purba Medinipur, 721152

Department of Computer Science

Programme: B.Sc. in Computer Science

Programme Specific Outcomes (PSOs) for B.Sc. Computer Science

Description of the PLOs will be earned by Graduate:

- PSO1 Bachelor's degree in Computer Science is the culmination of in-depth knowledge of Computer Programming ,Computer Architecture and Organization, Design and Analysis of Data structure and Algorithm, Data Base Management System, Operating System, Computer Network and Communication and Network Security, Compiler Design and Computation, Software Engineering and Management and several other branches of Computer Science. This also leads to study of related areas like computer science and statistics. Thus, this programme helps learners in building a solid foundation for higher studies in Computer Science.
- PSO2 The skills and knowledge gained has intrinsic beauty, which also leads to proficiency in analytical reasoning. This can be utilized in modeling and solving real life problems.
- PSO3 Students undergoing this programme learn to logically question assertions, to recognize patterns and to distinguish between essential and irrelevant aspects of problems. They also share ideas and insights while seeking and benefitting from knowledge and insight of others. This helps them to learn behave responsibly in a rapidly changing interdependent society.
- PSO4 Students completing this programme will be able to present Computer Science clearly and precisely, make vague ideas precise by formulating them in the language of Computer Science, describe computational ideas from multiple perspectives and explain fundamental concepts of computer to others.
- PSO5 Completion of this programme will also enable the learners to join teaching profession in primary and secondary schools.
- PSO6 This programme will also help students to enhance their employability for government jobs, jobs in banking, insurance and investment sectors, data analyst jobs and jobs in various other public and private enterprises.

Course Specific Outcomes (CSOs) for B.Sc. in Computer Science

Paper-CC1: Programming Fundamentals using C/C++

After course completion the students will have the following learning outcomes:

- CO1: Understanding a functional hierarchical code organization.
- CO2: Ability to define and manage data structures based on problem subject domain.
- CO3: Ability to work with textual information, characters and strings.
- CO4: various Ability to work with arrays of complex objects.
- CO5: Understanding a concept of object thinking within the framework of functional model.
- CO6: Understanding a concept of functional hierarchical code organization.
- CO7: Understanding a defensive programming concept. Ability to handle possible errors during program execution.

Paper-CC2: Computer System Architecture

After course completion the students will have the following learning outcomes:

- CO1: Have a thorough understanding of the fundamental concepts and techniques used in digital electronics.
- CO2: To understand and examine the structure of various number system and its application in digital design.
- CO3: The ability to understand , analyze and design various combinational and sequential circuits.
- CO4: Ability to identify basic requirements for a design application and propose a cost effective solution.
- CO5: Ability to identify and prevent various hazards and timing problems in a digital design.
- CO6: To develop skill to build and troubleshoot digital circuits.

Paper-CC3: Introduction to Java

After course completion the students will have the following learning outcomes:

- CO1: Ability to work with textual information, characters and strings.
- CO2: Ability to work with arrays of complex objects.
- CO3: Understanding a concept of object thinking within the framework of functional model.
- CO4: Understanding a concept of functional hierarchical code organization.
- CO5: Understanding a defensive programming concept. Ability to handle possible errors during program execution.

Paper-CC4: Discrete Structures

After course completion the students will have the following learning outcomes:

- CO1: Students completing this course will be able to express a logic sentence in terms of predicates, quantifiers, and logical connectives.
- CO2: Students completing this course will be able to apply the rules of inference and methods of proof including direct and indirect proof forms, proof by contradiction, and mathematical induction.
- CO3: Students completing this course will be able to use tree and graph algorithms to solve problems.
- CO4: Students completing this course will be able to evaluate Boolean functions and simplify expressions using the properties of Boolean algebra.

Paper-CC5: Data Structures

After course completion the students will have the following learning outcomes:

- CO1: Ability to analyze algorithms and a algorithm correctness.
- CO2: Ability to summarize searching and sorting techniques .
- CO3: Ability to describe stack, queue and linked list operation.
- CO4: Ability to have knowledge of tree and graphs concepts.

Paper-CC6: Operating System

After course completion the students will have the following learning outcomes:

- CO1: an ability to understand basic concepts about operating system.
- CO2: an ability to describe process management ,scheduling and concurrency control mechanisms.
- CO3: an ability to analyze memory management and deadlocks.
- CO4: an ability to compare various file systems and its operating systems examples.

Paper-CC7: Computer Networks

After course completion the students will have the following learning outcomes:

- CO1: Independently understand basic computer network technology.
- CO2: Understand and explain Data Communications System and its components.
- CO3: Identify the different types of network topologies and protocols.
- CO4: Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.
- CO5: Identify the different types of network devices and their functions within a network
- CO6: Understand and building the skills of subnetting and routing mechanisms.
- CO7: Familiarity with the basic protocols of computer networks, and how they can be used to assist in network design and implementation.

Paper-CC8: Design and Analysis of Algorithms

After course completion the students will have the following learning outcomes:

- CO1: Analyze the asymptotic performance of algorithms.
- CO2: Write rigorous correctness proofs for algorithms.
- CO3: Demonstrate a familiarity with major algorithms and data structures.
- CO4: Apply important algorithmic design paradigms and methods of analysis.
- CO5: Synthesize efficient algorithms in common engineering design situations.

Paper-CC9: Software Engineering

After course completion the students will have the following learning outcomes:

- CO1: Basic knowledge and understanding of the analysis and design of complex systems.
- CO2: Ability to apply software engineering principles and techniques.
- CO3: Ability to develop, maintain and evaluate large-scale software systems.
- CO4: To produce efficient, reliable, robust and cost-effective software solutions.
- CO5: Ability to perform independent research and analysis.

Paper-CC10: Database Management Systems

After course completion the students will have the following learning outcomes:

- CO1: Understand terms related to database design and management
- CO2: Understand the objectives of data and information management
- CO3: Understand the database development process
- CO4: Understand the relational model and relational database management system

Paper-CC11: Internet Technologies

After course completion the students will have the following learning outcomes:

- CO1: Analyze a web page and identify its elements and attributes.
- CO2: Create web pages using XHTML and Cascading Style Sheets.
- CO3: Build dynamic web pages using JavaScript (Client side programming).
- CO4: Create XML documents and Schemas.
- CO5: Build interactive web applications using AJAX.

Paper-CC12: Theory of Computation

After course completion the students will have the following learning outcomes:

- CO1: introduce students to the mathematical foundations of computation including automata theory;
- CO2: the theory of formal languages and grammars;
- CO3: the notions of algorithm, decidability, complexity, and computability.

Paper-CC13: Artificial Intelligence

After course completion the students will have the following learning outcomes:

- CO1: Apply the basic principles, models, and algorithms of AI to recognize, model, and solve problems in the analysis and design of information systems.
- CO2: Analyze the structures and algorithms of a selection of techniques related to searching, reasoning, machine learning, and language processing.

Paper-CC14: Computer Graphics

After course completion the students will have the following learning outcomes:

- CO1: Explain the applications, areas, and graphic pipeline, display and hardcopy technologies.
- CO2: Apply and compare the algorithms for drawing 2D images also explain aliasing, anti aliasing and half toning techniques.
- CO3: Discuss OpenGL application programming Interface and apply it for 2D & 3D computer graphics.
- CO4: Analyze and apply clipping algorithms and transformation on 2D images.
- CO5: Solve the problems on viewing transformations and explain the projection and hidden surface removal algorithms.

Paper- DSE 1 :

After course completion the students will have the following learning outcomes:

- CO1: Obtain numerical solutions of algebraic and transcendental equations.
- CO2: Find numerical solutions of system of linear equations and check the accuracy of the solutions.
- CO3: Learn about various interpolating and extrapolating methods.
- CO4: Solve initial and boundary value problems in differential equations using numerical methods.
- CO5: Apply various numerical methods in real life problems.

Paper- DSE 2:

After course completion the students will have the following learning outcomes:

- CO1: Obtain numerical solutions of algebraic and transcendental equations.
- CO2: Find numerical solutions of system of linear equations and check the accuracy of the solutions.
- CO3: Learn about various interpolating and extrapolating methods.
- CO4: Solve initial and boundary value problems in differential equations using numerical methods.
- CO5: Apply various numerical methods in real life problems.

Paper: DSE 3

After course completion the students will have the following learning outcomes:

- CO1: Define multimedia to potential clients.
- CO2: Identify and describe the function of the general skill sets in the multimedia industry.
- CO3: Identify the basic components of a multimedia project.

CO4: Identify the basic hardware and software requirements for multimedia development and playback.

Paper- DSE 4:

After course completion the students will have the following learning outcomes:

- CO1: Introducing the fundamental theory and concepts of computational intelligence methods, in particular neural networks, fuzzy systems, genetic algorithms and their applications in the area of machine intelligence.
- CO2: This can be summarized as to understand the fundamental theory and concepts of neural networks, neuro modeling, several neural network paradigms and its applications.
- CO3: To understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic control and other machine intelligence applications of fuzzy logic.
- CO4: To understand the basics of an evolutionary computing paradigm known as genetic algorithms and its application to engineering optimization problems.
- CO5: To develop communication and problem solving skills.
- CO6: To re-engineer attitude and understand its influence on behavior

Paper- SEC 1:

After course completion the students will have the following learning outcomes:

- CO1: Students are able to develop a dynamic webpage by the use of java script and HTML/DHTML/ASP.
- CO2: Will be able to write a well formed / valid XML document
- CO3: Will be able to connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.

Paper-SEC 2:

After course completion the students will have the following learning outcomes:

- CO1: Students are able to develop a dynamic webpage by the use of java script and HTML/DHTML/ASP/PHP/ R program .
- CO2: Students will be able to write a well formed / valid XML document
- CO3: Students will be able to connect a java program to a DBMS and perform insert, update and delete
- CO4: operations on DBMS table.

Paper- GE1: Computer Fundamentals

After course completion the students will have the following learning outcomes:

- CO1: Bridge the fundamental concepts of computers with the present level of knowledge of the students.
- CO2: Familiarise operating systems, programming languages, peripheral devices, networking, multimedia and internet
- CO3: Understand binary, hexadecimal and octal number systems and their arithmetic.
- CO4: Understand how logic circuits and Boolean algebra forms as the basics of digital computer.

Paper- GE2 : Introduction to Programming

After course completion the students will have the following learning outcomes:

- CO1: Understanding a functional hierarchical code organization.
- CO2: Ability to define and manage data structures based on problem subject domain.
- CO3: Ability to work with textual information, characters and strings.
- CO4: Ability to work with arrays of complex objects.
- CO5: Understanding a concept of object thinking within the framework of functional model.
- CO6: Understanding a concept of functional hierarchical code organization.
- CO7: Understanding a defensive programming concept. Ability to handle possible errors during program execution.

Paper- GE3: Multimedia and Applications

After course completion the students will have the following learning outcomes:

- CO1: Define multimedia to potential clients.
- CO2: Identify and describe the function of the general skill sets in the multimedia industry.
- CO3: Identify the basic components of a multimedia project.
- CO4: Identify the basic hardware and software requirements for multimedia development and playback

Paper- GE4: Web and E-Commerce Technologies

After course completion the students will have the following learning outcomes:

- CO1: Students are able to develop a dynamic webpage by the use of java script and HTML/DHTML/ASP.
- CO2: Students will be able to write a well formed / valid XML document
- CO3: Students will be able to connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.
- CO4: Students will be able to write a server side java application called Servlet to catch form data sent from client and store it on database.
- CO5: Students will be able to write a server side java application called JSP to catch form data sent from
- CO6: client, process it and store it on database.

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Department of Computer Science

Programme: M.Sc. in Computer Science

Programme Specific Outcomes (PSOs) for M.Sc. in Computer Science

Description of the PLOs will be earned by master degree:

- PSO1 Enable the students to apply the computing and soft skills acquired in the
- PSO2 M.Sc. in Computer Science program and developing innovative applications for the betterment of the society.
- PSO3 Provide exposure to techniques that would enable the students to design, implement and evaluate IT solutions.
- PSO4 To enable the students to meet the challenges of research and development in computer science and applications.

Course Specific Outcomes (CSOs) for M.Sc. in Computer Science

Semester-I

COS-101: Data Structure and algorithm

After course completion the students will have the following learning outcomes:

- CO1: recall the fundamentals of data structure with their implementation and its applications.
- CO2: infer the complexity of algorithms.
- CO3: apply the Greedy methods to solve real time problems.
- CO4: compare different sorting and searching techniques.
- CO5: design new algorithms with Dynamic Programming Techniques for Analytical Problems.

COS-102: Advanced Computer Architecture

After course completion the students will have the following learning outcomes:

- CO1: define the principles of Parallel Algorithm Design.
- CO2: understand the fundamental concepts, techniques in Parallel Computation Structuring and Design.
- CO3: solve the algorithms using Parallel Programming Principle
- CO4: distinguish various architectures of high-performance computing systems.
- CO5: interpret modern design structures of pipelined and multiprocessors systems.

COS-103: Data Communication and Computer Network

After course completion the students will have the following learning outcomes:

- CO1: Understand computer network basics, network architecture, TCP/IP and OSI reference models.
- CO2: Identify and understand various techniques and modes of transmission.
- CO3: Describe data link protocols, multi-channel access protocols and IEEE 802 standards for LAN
- CO4: Describe routing and congestion in network layer with routing algorithms and classify IPV4 addressing scheme.

CO5: Discuss the elements and protocols of transport layer.

CO6: Understand network security and define various protocols such as FTP, HTTP, Telnet, DNS

COS-104: Software Engineering and project management

After course completion the students will have the following learning outcomes:

CO1: Know how to develop the code from the design and effectively apply relevant standards and perform testing, and quality management and practice.

CO2: Able to use modern engineering tools necessary for software project management, time management and software reuse.

CO3: Plan a software engineering process life cycle, including the specification, design, implementation, and testing of software systems that meet specification, performance, maintenance and quality requirements.

CO4: Able to elicit, analyze and specify software requirements through a productive working relationship with various stakeholders of the project

CO5: Analyze and translate a specification into a design, and then realize that design practically, using an appropriate software engineering methodology.

COS-191: Data Structure Lab

After course completion the students will have the following learning outcomes:

CO1: implement the recall the fundamentals of data structure with their implementation and its applications.

CO2: implement the infer the complexity of algorithms.

CO3: implement the apply the Greedy methods to solve real time problems.

CO4: implement the compare different sorting and searching techniques.

CO5: implement the design new algorithms with Dynamic Programming Techniques for Analytical Problems.

COS-192: Network Programming Lab

After course completion the students will have the following learning outcomes:

CO1: Practice the Understand computer network basics, network architecture, TCP/IP and OSI reference models.

CO2: Practice the Identify and understand various techniques and modes of transmission.

CO3: Practice the Describe data link protocols, multi-channel access protocols and IEEE 802 standards for LAN

CO4: Practice the Describe routing and congestion in network layer with routing algorithms and classify IPV4 addressing scheme.

CO5: Practice the Discuss the elements and protocols of transport layer.

CO6: Practice the Understand network security and define various protocols such as FTP, HTTP, Telnet, DNS

Semester-II

COS-201: Advanced Database Management System

After course completion the students will have the following learning outcomes:

CO1: Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models.

CO2: Identify basic database storage structures and access techniques such as file organizations, indexing methods including B - tree, and hashing.

CO3: Learn and apply Structured query language (SQL) for database definition and database manipulation.

- CO4: Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
- CO5: Understand various transaction processing, concurrency control mechanisms and database protection mechanisms.

COS-202:M1: Automata Theory M2: Compiler Construction

After course completion the students will have the following learning outcomes:

- CO1: Understand the basic concepts of formal languages, automata and grammar types, as well as the use of formal languages and reduction in normal forms
- CO2: Demonstrate the relation between regular expressions, automata, languages and grammar with formal mathematical methods
- CO3: Design push down automata, cellular automata and turing machines performing tasks of moderate complexity
- CO4: Analyze the syntax and formal properties, parsing of various grammars such as LL(k) and LR(k)
- CO5: Describe the rewriting systems and derivation languages
- CO6: Define the Loop Optimization and DAG for source code.
- CO7: Explain the data structures for Block Structured Languages.
- CO8: Apply various parsing and conversion techniques for the design of a compiler.
- CO9: Analyze the concept of parsing techniques.
- CO10: Evaluate the Code Optimization and code generation techniques.

COS-203:M1: OOPS using JAVA M2: Programming in R

After course completion the students will have the following learning outcomes:

- CO1: Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.
- CO2: Understand dynamic memory management techniques using pointers, constructors, destructors, etc
- CO3: Describe the concept of function overloading, operator overloading, virtual functions and
- CO4: polymorphism.
- CO5: Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming.
- CO6: Demonstrate the use of various OOPs concepts with the help of program
- CO7: Demonstrate the use of various implementation of R program language.

COS-204: M1: Computer Fundamentals M2: Programming Concepts

After course completion the students will have the following learning outcomes:

- CO1: Bridge the fundamental concepts of computers with the present level of knowledge of the students.
- CO2: Familiarise operating systems, programming languages, peripheral devices, networking, multimedia and internet
- CO3: Understand binary, hexadecimal and octal number systems and their arithmetic.
- CO4: Understand how logic circuits and Boolean algebra forms as the basics of digital computer.
- CO5: Understanding a functional hierarchical code organization.
- CO6: Ability to define and manage data structures based on problem subject domain.
- CO7: Ability to work with textual information, characters and strings.
- CO8: Ability to work with arrays of complex objects.
- CO9: Understanding a concept of object thinking within the framework of functional model.
- CO10: Understanding a concept of functional hierarchical code organization.
- CO11: Understanding a defensive programming concept. Ability to handle possible errors during program execution.

COS-291: DBMS Lab

After course completion the students will have the following learning outcomes:

- CO12: connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.
- CO13: develop a dynamic webpage by the use of java script and HTML/ DHTML/ASP.
- CO14: write a well formed / valid XML document
- CO15: write a server side java application called Servlet to catch form data sent from
- CO16: client and store it on database.
- CO17: write a server side java application called JSP to catch form data sent from client, process it and store it on database.

COS-292: M1: OOPS Lab M2: R Lab

After course completion the students will have the following learning outcomes:

- CO1: design and implement programs in the Java programming language that make strong use of classes and objects.
- CO2: print formatted text to the console output and read/parse console input text using a Scanner object.
- CO3: apply logical constructs for branching and loops as well as use integrator objects when appropriate.
- CO4: define classes and methods.
- CO5: implement R programming logic.

Semester-III

COS-301: Advanced operating System

After course completion the students will have the following learning outcomes:

- CO1: Describe the architecture and features of UNIX Operating System and distinguish it from other Operating System
- CO2: Demonstrate UNIX commands for file handling and process control
- CO3: Write Regular expressions for pattern matching and apply them to various filters for a specific task
- CO4: Analyze a given problem and apply requisite facets of SHELL programming in order to devise a SHELL script to solve the problem

COS-302:M1: Computer Graphics M2: Image Processing

After course completion the students will have the following learning outcomes:

- CO1: Understand the basics of computer graphics, different graphics systems and applications of computer graphics.
- CO2: Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.
- CO3: Use of geometric transformations on graphics objects and their application in composite form.
- CO4: Extract scene with different clipping methods and its transformation to graphics display device.
- CO5: Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.
- CO6: Render projected objects to naturalize the scene in 2D view and use of illumination models for this.
- CO7: Review the fundamental concepts of a digital image processing system.
- CO8: Analyze images in the frequency domain using various transforms.
- CO9: Evaluate the techniques for image enhancement and image restoration.
- CO10: Categorize various compression techniques.
- CO11: Interpret Image compression standards.
- CO12: Interpret image segmentation and representation techniques.

COS-303: Elective – I

After course completion the students will have the following learning outcomes:

- CO1: Describe important types of combinatorial optimization problems
- CO2: Formulate combinatorial optimization problems as mathematical models and determine the
- CO3: difficulty of the problems with the help of complexity theory
- CO4: Explain the design of and the principles behind efficient solution methods and use the methods for
- CO5: solving combinatorial optimization problems
- CO6: Use available software for solving optimization problems take part of development of software for
- CO7: optimization problems

COS-304: M1: DBMS M2: Internet Technology (CBCS)

After course completion the students will have the following learning outcomes:

- CO1: Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models.
- CO2: Identify basic database storage structures and access techniques such as file organizations, indexing methods including B - tree, and hashing.
- CO3: Learn and apply Structured query language (SQL) for database definition and database manipulation.
- CO4: Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
- CO5: Understand various transaction processing, concurrency control mechanisms and database protection mechanisms.
- CO6: develop a dynamic webpage by the use of java script and DHTML.
- CO7: write a well formed / valid XML document.
- CO8: connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.

COS-391: M1: Graphics Lab M2: OS Lab

After course completion the students will have the following learning outcomes:

- CO1: Understand the fundamental concepts of mobile devices and types of mobile operating systems to know about comprehensive knowledge in the field of computer science.
- CO2: Extract scene with different clipping methods and its transformation to graphics display
- CO3: device.
- CO4: Explore projections and visible surface detection techniques for display of 3D scene on 2D
- CO5: screen.
- CO6: Implement various field of computer graphics and Operating system application

COS-392: M1: Industrial Tour M2: Term Paper

After course completion the students will have the following learning outcomes:

- CO1: comprehend the state-of-the-art requirements of the Industry.
- CO2: apply critical thinking, reasoning and creative thinking for Software Design in an industry as an individual or as a part of a team.
- CO3: analyze the problem and provide Solution by Decision Making.
- CO4: develop Interpersonal, Communication and Presentation skills.
- CO5: build the modules for a specific problem.

Semester-IV

COS-401: Artificial Intelligence

After course completion the students will have the following learning outcomes:

- CO1: Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations.
- CO2: Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.
- CO3: Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.
- CO4: Demonstrate proficiency developing applications in an 'AI language', expert system shell, or data mining tool.
- CO5: Demonstrate proficiency in applying scientific method to models of machine learning.
- CO6: Demonstrate an ability to share in discussions of AI, its current scope and limitations, and societal implications.
- CO7: implications.

COS-402: Elective – II

After course completion the students will have the following learning outcomes:

- CO1: develop a dynamic webpage by the use of java script and DHTML.
- CO2: write a well formed / valid XML document.
- CO3: connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.
- CO4: write a server side java application called Servlet to catch form data sent from client, process it and store it on database.
- CO5: write a server side java application called JSP to catch form data sent from client and store it on database.

COS-403: Elective - III

After course completion the students will have the following learning outcomes:

- CO1: Understand the Importance of IT and its acts in India.
- CO2: Understanding the basic concept of computer fundamentals and number systems
- CO3: Describe about the basic components of computer.
- CO4: Understand the applications of MS Word, MS Excel and MS Power Point in documentation and other areas.
- CO5: Understanding the concept of DBMS and its importance in record maintenance.
- CO6: Describe important types of combinatorial optimization problems
- CO7: Formulate combinatorial optimization problems as mathematical models and determine the difficulty of the problems with the help of complexity theory

COS-491: AI Lab

After course completion the students will have the following learning outcomes:

- CO1: Learn programming concept in PROLOG platform
- CO2: Improve logic building for programming

COS-492: Project work

After course completion the students will have the following learning outcomes:

- CO1: understand how to work at corporate field.
- CO2: comprehend the state-of-the-art requirements of the Industry.

- CO3: apply critical thinking, reasoning and creative thinking for Software Design in an industry as an individual or as a part of a team.
- CO4: analyze the problem and provide Solution by Decision Making.
- CO5: develop Interpersonal, Communication and Presentation skills.
- CO6: build the modules for a specific problem.

COS-493 Grand Viva

After course completion the students will have the following learning outcomes:

- CO1: analyze the problem and provide Solution by Decision Making.
- CO2: develop Interpersonal, Communication and Presentation skills.
- CO3: build the modules for a specific problem.