



**ST. ANNE'S COLLEGE OF ENGINEERING AND TECHNOLOGY**

(Approved by AICTE, New Delhi. Affiliated to Anna University, Chennai)

Accredited by NAAC

ANGUCHETTYPALAYAM, PANRUTI – 607 106.

# **CO PO**

# **GLOSSARY**



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Program Name: B.E., Computer science Engineering			
Programme Educational Objectives			
<b>PEO1</b>	Graduates can Apply their technical competence in computer science to solve real world problems, with technical and people leadership.		
<b>PEO2</b>	Graduates can Conduct cutting edge research and develop solutions on problems of social relevance.		
<b>PEO3</b>	Graduates can Work in a business environment, exhibiting team skills, work ethics, adaptability and lifelong learning.		
Programme Specific Outcomes			
<b>PSO 1</b>	Exhibit design and programming skills to build and automate business solutions using cutting edge technologies		
<b>PSO 2</b>	Strong theoretical foundation leading to excellence and excitement towards research, to provide elegant solutions to complex problems.		
<b>PSO3</b>	Ability to work effectively with various engineering fields as a team to design, build and develop system applications		
Regulation 2021			
Course Code	Course name	Course Outcomes	
<b>GE3151</b>	<b>PROBLEM SOLVING AND PYTHON PROGRAMMING</b>	<b>CO1</b>	Develop algorithmic solutions to simple computational problems.
		<b>CO2</b>	Develop and execute simple Python programs.
		<b>CO3</b>	Write simple Python programs using conditionals and loops for solving problems.
		<b>CO4</b>	Decompose a Python program into functions.
		<b>CO5</b>	Represent compound data using Python lists, tuples, dictionaries etc.
		<b>CO6</b>	Read and write data from/to files in Python programs.
<b>HS3152</b>	<b>PROFESSIONAL ENGLISH I</b>	<b>CO1</b>	To use appropriate words in a professional context
		<b>CO2</b>	To gain understanding of basic grammatic structures and use them in right context.
		<b>CO3</b>	To read and infer the denotative and connotative meanings of technical texts
		<b>CO4</b>	To write definitions, descriptions, narrations and essays on various topics
<b>PH3151</b>	<b>ENGINEERING PHYSICS</b>	<b>CO1</b>	Understand the importance of mechanics.
		<b>CO2</b>	Express their knowledge in electromagnetic waves.
		<b>CO3</b>	Demonstrate a strong foundational knowledge in oscillations, optics and lasers
		<b>CO4</b>	Understand the importance of quantum physics.
		<b>CO5</b>	Comprehend and apply quantum mechanical principles towards the formation of energy bands.
<b>MA3151</b>	<b>MATRICES AND CALCULUS</b>	<b>CO1</b>	Use the matrix algebra methods for solving practical problems.
		<b>CO2</b>	Apply differential calculus tools in solving various application problems.
		<b>CO3</b>	Able to use differential calculus ideas on several variable functions
		<b>CO4</b>	Apply different methods of integration in solving practical problems.
		<b>CO5</b>	Apply multiple integral ideas in solving areas, volumes and other practical problems
<b>CY3151</b>	<b>ENGINEERING CHEMISTRY</b>	<b>CO1</b>	To infer the quality of water from quality parameter data and propose suitable treatment methodologies to treat water
		<b>CO2</b>	To identify and apply basic concepts of nanoscience and nanotechnology in designing the synthesis of nanomaterials for engineering and technology applications
		<b>CO3</b>	To apply the knowledge of phase rule and composites for material selection requirements
		<b>CO4</b>	To recommend suitable fuels for engineering processes and applications.

		<b>CO5</b>	To recognize different forms of energy resources and apply them for suitable applications in energy sectors.
<b>PH3256</b>	<b>PHYSICS FOR INFORMATION SCIENCE</b>	<b>CO1</b>	Gain knowledge on classical and quantum electron theories, and energy band structures
		<b>CO2</b>	Acquire knowledge on basics of semiconductor physics and its applications in various devices
		<b>CO3</b>	Get knowledge on magnetic properties of materials and their applications in data storage,
		<b>CO4</b>	Have the necessary understanding on the functioning of optical materials for optoelectronics
		<b>CO5</b>	Understand the basics of quantum structures and their applications and basics of quantum computing
<b>HS3252</b>	<b>PROFESSIONAL ENGLISH II</b>	<b>CO1</b>	To compare and contrast products and ideas in technical texts.
		<b>CO2</b>	To identify and report cause and effects in events, industrial processes through technical texts
		<b>CO3</b>	To analyse problems in order to arrive at feasible solutions and communicate them in the written format.
		<b>CO4</b>	To present their ideas and opinions in a planned and logical manner
		<b>CO5</b>	To draft effective resumes in the context of job search
<b>MA3251</b>	<b>STATISTICAL NUMERICAL METHODS</b>	<b>CO1</b>	Apply the concept of testing of hypothesis for small and large samples in real life problems
		<b>CO2</b>	Apply the basic concepts of classifications of design of experiments in the field of agriculture.
		<b>CO3</b>	Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems.
		<b>CO4</b>	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations
		<b>CO5</b>	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications
<b>CS3251</b>	<b>PROGRAMMING IN C</b>	<b>CO1</b>	Demonstrate knowledge on C Programming constructs
		<b>CO2</b>	Develop simple applications in C using basic constructs
		<b>CO3</b>	Design and implement applications using arrays and strings
		<b>CO4</b>	Develop and implement modular applications in C using functions.
		<b>CO5</b>	Develop applications in C using structures and pointers.
<b>BE3251</b>	<b>BASIC ELECTRICAL AND ELECTRONICS ENGINEERING</b>	<b>CO1</b>	Compute the electric circuit parameters for simple problems
		<b>CO2</b>	Explain the working principle and applications of electrical machines
		<b>CO3</b>	Analyze the characteristics of analog electronic devices
		<b>CO4</b>	Explain the basic concepts of digital electronics
		<b>CO5</b>	Explain the operating principles of measuring instruments
<b>GE3251</b>	<b>ENGINEERING GRAPHICS</b>	<b>CO1</b>	Use BIS conventions and specifications for engineering drawing.
		<b>CO2</b>	Construct the conic curves, involutes and cycloid.
		<b>CO3</b>	Solve practical problems involving projection of lines.
		<b>CO4</b>	Draw the orthographic, isometric and perspective projections of simple solids.
		<b>CO5</b>	Draw the development of simple solids

MA3354	DISCRETE MATHEMATICS	CO1	Have knowledge of the concepts needed to test the logic of a program.
		CO2	Have an understanding in identifying structures on many levels
		CO3	Be aware of a class of functions which transform a finite set into another finite set which relates to input and output functions in computer science.
		CO4	Be aware of the counting principles.
		CO5	Be exposed to concepts and properties of algebraic structures such as groups, rings and fields.
CS3351	DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION	CO1	Design various combinational digital circuits using logic gates
		CO2	Design sequential circuits and analyze the design procedures
		CO3	State the fundamentals of computer systems and analyze the execution of an instruction
		CO4	Analyze different types of control design and identify hazards
		CO5	Identify the characteristics of various memory systems and I/O communication
CS3352	FOUNDATION OF DATA SCIENCE	CO1	Define the data science process
		CO2	Understand different types of data description for data science process
		CO3	Gain knowledge on relationships between data
		CO4	Use the Python Libraries for Data Wrangling
		CO5	Apply visualization Libraries in Python to interpret and explore data
CS3301	DATA STRUCTURES	CO1	Define linear and non-linear data structures.
		CO2	Implement linear and non-linear data structure operations.
		CO3	Use appropriate linear/non-linear data structure operations for solving a given problem
		CO4	Apply appropriate graph algorithms for graph applications.
		CO5	Analyze the various searching and sorting algorithms
CS3391	OBJECT ORIENTED PROGRAMMING	CO1	Apply the concepts of classes and objects to solve simple problems
		CO2	Develop programs using inheritance, packages and interfaces
		CO3	Make use of exception handling mechanisms and multithreaded model to solve real world problems
		CO4	Build Java applications with I/O packages, string classes, Collections and generics concepts
		CO5	Integrate the concepts of event handling and JavaFX components and controls for developing GUI based applications
CS3452	THEORY OF COMPUTATION	CO1	Construct automata theory using Finite Automata
		CO2	Write regular expressions for any pattern
		CO3	Design context free grammar and Pushdown Automata
		CO4	Design Turing machine for computational functions
		CO5	Differentiate between decidable and undecidable problems

CS3491	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	CO1	Use appropriate search algorithms for problem solving
		CO2	Apply reasoning under uncertainty
		CO3	Build supervised learning models
		CO4	Build ensembling and unsupervised models
		CO5	Build deep learning neural network models
CS3492	DATABASE MANAGEMENT SYSTEMS	CO1	Construct SQL Queries using relational algebra
		CO2	Design database using ER model and normalize the database
		CO3	Construct queries to handle transaction processing and maintain consistency of the database
		CO4	Compare and contrast various indexing strategies and apply the knowledge to tune the performance of the database
		CO5	Appraise how advanced databases differ from Relational Databases and find a suitable database for the given requirement.
CS3401	ALGORITHMS	CO1	Analyze the efficiency of algorithms using various frameworks
		CO2	Apply graph algorithms to solve problems and analyze their efficiency.
		CO3	Make use of algorithm design techniques like divide and conquer, dynamic programming and greedy techniques to solve problems
		CO4	Use the state space tree method for solving problems.
		CO5	Solve problems using approximation algorithms and randomized algorithms
CS3451	INTRODUCTION TO OPERATING SYSTEMS	CO1	Analyze various scheduling algorithms and process synchronization.
		CO2	Explain deadlock prevention and avoidance algorithms.
		CO3	Compare and contrast various memory management schemes.
		CO4	Explain the functionality of file systems, I/O systems, and Virtualization
		CO5	Compare iOS and Android Operating Systems.
GE3451	ENVIRONMENTAL SCIENCE AND SUSTAINABILITY	CO1	To recognize and understand the functions of environment, ecosystems and biodiversity and their conservation.
		CO2	To identify the causes, effects of environmental pollution and natural disasters and contribute to the preventive measures in the society.
		CO3	To identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations.
		CO4	To recognize the different goals of sustainable development and apply them for suitable technological advancement and societal development.
		CO5	To demonstrate the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization.
CS3591	COMPUTER NETWORKS	CO1	Explain the basic layers and its functions in computer networks.
		CO2	Understand the basics of how data flows from one node to another
		CO3	Analyze routing algorithms.
		CO4	Describe protocols for various functions in the network.
		CO5	Analyze the working of various application layer protocols.

CS3501	COMPILER DESIGN	CO1	Understand the techniques in different phases of a compiler.
		CO2	Design a lexical analyser for a sample language and learn to use the LEX tool.
		CO3	Apply different parsing algorithms to develop a parser and learn to use YACC tool
		CO4	Understand semantics rules (SDT), intermediate code generation and run-time environment.
		CO5	Implement code generation and apply code optimization techniques.
CB3491	CRYPTOGRAPHY AND CYBER SECURITY	CO1	Understand the fundamentals of networks security, security architecture, threats and vulnerabilities
		CO2	Apply the different cryptographic operations of symmetric cryptographic algorithms
		CO3	Apply the different cryptographic operations of public key cryptography
		CO4	Apply the various Authentication schemes to simulate different applications.
		CO5	Understand various cyber crimes and cyber security.
CS3551	DISTRIBUTED COMPUTING	CO1	Explain the foundations of distributed systems
		CO2	Solve synchronization and state consistency problems
		CO3	Use resource sharing techniques in distributed systems
		CO4	Apply working model of consensus and reliability of distributed systems
		CO5	Explain the fundamentals of cloud computing
CCS335	CLOUD COMPUTING	CO1	Compare various Software Development Lifecycle Models
		CO2	Evaluate project management approaches as well as cost and schedule estimation strategies.
		CO3	Perform formal analysis on specifications.
		CO4	Use UML diagrams for analysis and design
		CO5	Architect and design using architectural styles and design patterns, and test the system
CCW332	DIGITAL MARKETING	CO1	To examine and explore the role and importance of digital marketing in today's rapidly changing business environment..
		CO2	To focuses on how digital marketing can be utilized by organizations and how its effectiveness can be measured.
		CO3	To know the key elements of a digital marketing strategy.
		CO4	To study how the effectiveness of a digital marketing campaign can be measured
		CO5	To demonstrate advanced practical skills in common digital marketing tools such as SEO, SEM, Social media and Blogs.
MX3084	DISASTER RISK REDUCTION AND MANAGEMENT	CO1	To impart knowledge on the concepts of Disaster, Vulnerability and Disaster Risk reduction (DRR)
		CO2	To enhance understanding on Hazards, Vulnerability and Disaster Risk Assessment prevention and risk reduction
		CO3	To develop disaster response skills by adopting relevant tools and technology
		CO4	Enhance awareness of institutional processes for Disaster response in the country and
		CO5	Develop rudimentary ability to respond to their surroundings with potential Disaster response in areas where they live, with due sensitivity
CCS356	OBJECT ORIENTED SOFTWARE ENGINEERING	CO1	Compare various Software Development Lifecycle Models
		CO2	Evaluate project management approaches as well as cost and schedule estimation strategies.
		CO3	Perform formal analysis on specifications.
		CO4	Use UML diagrams for analysis and design.
		CO5	Architect and design using architectural styles and design patterns, and test the system

MX3085	WELL BEING WITH TRADITIONAL PRACTICES - YOGA, AYURVEDA, SIDDHA	CO1	Learn the importance of different components of health
		CO2	Gain confidence to lead a healthy life
		CO3	Learn new techniques to prevent lifestyle health disorders
		CO4	Understand the importance of diet and workouts in maintaining health
GE3791	HUMAN VALUES AND ETHICS	CO1	Identify the importance of democratic, secular and scientific values in harmonious functioning of social life
		CO2	Practice democratic and scientific values in both their personal and professional life.
		CO3	Find rational solutions to social problems.
		CO4	Behave in an ethical manner in society
		CO5	Practice critical thinking and the pursuit of truth.
GE3751	PRINCIPLES OF MANAGEMENT	CO1	Ability to apply TQM concepts in a selected enterprise.
		CO2	Ability to apply TQM principles in a selected enterprise.
		CO3	Ability to understand Six Sigma and apply Traditional tools,
		CO4	Ability to understand Taguchi's Quality Loss Function, Performance Measures and apply QFD, TPM, COQ and BPR.
		CO5	Ability to apply QMS and EMS in any organization.
OBT356	LIFESTYLE DISEASE	CO1	To aware about all the lifestyle diseases and its prevention
		CO2	To understand the Remedial measures for potential health risks and to study the significance of healthy lifestyle.
		CO3	Understand the importance of diet and workouts in maintaining health
		CO4	Learn new techniques to prevent lifestyle health disorders
		CO5	To adapt a few lifestyle and To provide proper test and treatment for LSD.
AI3021	IT IN AGRICULTURAL SYSTEM	CO1	The students shall be able to understand the applications of IT in remote sensing applications such as Drones etc.
		CO2	The students will be able to get a clear understanding of how a greenhouse can be automated and its advantages
		CO3	The students will be able to apply IT principles and concepts for management of field operations.
		CO4	The students will get an understanding about weather models, their inputs and applications.
		CO5	The students will get an understanding of how IT can be used for e-governance in agriculture.
CS3811	PROJECT WORK	CO1	Gain Domain knowledge and technical skill set required for solving industry / research problems
		CO2	Provide solution architecture, module level designs, algorithms
		CO3	Implement, test and deploy the solution for the target platform
		CO4	Prepare detailed technical report, demonstrate and present the work

  
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