



# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by A.I.C.T.E., New Delhi, & Permanently Affiliated to J.N.T.U-GV, Vizianagaram)

NAAC "B++" Accredited Institute

Cherukupally (Village), Near Tagarapuvalasa Bridge, Vizianagaram (Dist) -531162.

www.aietta.ac.in, principal@aietta.ac.in

## Department of Computer Science and Engineering

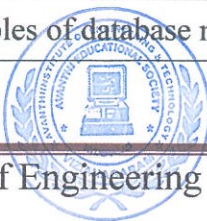
Program: M.Tech-Computer Science Engineering

Regulation: R16

Course Outcomes

No. of Courses: 19

I-I Sem	Course:Advanced Data Structures and Algorithm Analysis
CO-1	Analyze algorithms and to determine algorithm correctness and time efficiency class.
CO-2	Acquire knowledge on variety of advanced abstract data type (ADT) and data structures and their implementations.
CO-3	Know different algorithm design techniques (brute force, divide and conquer, greedy, etc).
CO-4	Apply and implement learned algorithm design techniques and data structures to solve problems.
CO-5	Ability to summarize searching and sorting techniques.
I-I Sem	Course:Mathematical Foundations of Computer Science
CO-1	Apply mathematical logic to solve problems.
CO-2	Understand sets, relations, functions, and discrete structures
CO-3	Use logical notation to define and reason about fundamental mathematical concepts such as sets, relations, and functions
CO-4	Formulate problems and solve recurrence relations.
CO-5	Analyse model and solve real-world problems using graphs and trees.
I-I Sem	Course:Computer Organization and Architecture
CO-1	Understand the basics of instructions sets and their impact on processor design
CO-2	Demonstrate an understanding of the design of the functional units of a digital computer system
CO-3	Evaluate cost performance and design trade-offs in designing and constructing a computer processor including memory
CO-4	Design a pipeline for consistent execution of instructions with minimum hazards
CO-5	Manipulate representations of numbers stored in digital computer
I-I Sem	Course:Database Management Systems
CO-1	Understand the basic principles of database management systems







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CO-2	Draw Entity-Relationship diagrams to represent simple database application scenarios
CO-3	Write SQL queries for a given context in relational database.
CO-4	Discuss normalization techniques with simple examples.
CO-5	Describe transaction processing and concurrency control concepts.
<b>I-I Sem</b>	<b>Course:Advanced Operating Systems</b>
CO-1	Describe the general architecture of computers.
CO-2	Describe, contrast and compare differing structures for operating systems.
CO-3	Analyze the high-level structure of the Linux kernel both in concept and source code.
CO-4	Acquire a detailed understanding of one aspect (the scheduler) of the Linux kernel.
CO-5	To implement the working principles of OS.
<b>I-I Sem</b>	<b>Course:Data Warehousing and Data Mining</b>
CO-1	Understand the Data Warehouses, Operational Data Stores (ODS) and OLAP characteristics.
CO-2	Understand the data mining concept, application and their usage.
CO-3	Analyze the frequent patterns using association analysis algorithms like apriori, FP-growth etc.
CO-4	Understand the concept of classification, different classification algorithms and their applications.
CO-5	Understand the concept of clustering and different cluster analysis methods.
<b>I-I Sem</b>	<b>Course:CSE LAB 1</b>
CO-1	Demonstrate in-depth Knowledge in the fundamentals of Computing.
CO-2	Critically analyze solutions, proofs and programs in the field of Computing .
CO-3	Apply in-depth knowledge in the field of computing to solve problems in the area.
<b>I-II Sem</b>	<b>Course:Cyber Security</b>
CO-1	Analyze and evaluate the cyber security needs of an organization
CO-2	Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation





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CO-3	Measure the performance and troubleshoot cyber security systems.
CO-4	Implement cyber security solutions and use of cyber security, information assurance, and cyber/computer forensics software/tools.
CO-5	Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators
<b>I-II Sem Course: Computer Networks</b>	
CO-1	Explain basic concepts, OSI reference model, services and role of each layer of OSI model and TCP/IP, networks devices and transmission media, Analog and digital data transmission
CO-2	Apply channel allocation, framing, error and flow control techniques.
CO-3	Describe the functions of Network Layer i.e. Logical addressing, subnetting & Routing Mechanism.
CO-4	Explain the different Transport Layer function i.e. Port addressing, Connection Management, Error control and Flow control mechanism.
CO-5	Explain the functions offered by session and presentation layer and their Implementation
<b>I-II Sem Course: Big Data Analytics</b>	
CO-1	Identify Big Data and its Business Implications.
CO-2	List the components of Hadoop and Hadoop Eco-System
CO-3	Access and Process Data on Distributed File System
CO-4	Manage Job Execution in Hadoop Environment
CO-5	Analyze Infosphere BigInsights Big Data Recommendations.
<b>I-II Sem Course: Advanced Unix Programming</b>	
CO-1	Understand the basic concepts of UNIX Architecture and basic Commands.
CO-2	Apply different types of Files, File system and basic file system commands.
CO-3	Understand the commands related to Shell basics, vi editor and regular expression commands.
CO-4	Acquire knowledge on the concepts of advance file concepts, commands related to Shell script and filter commands.
CO-5	Understand the concepts of process and commands related to Perl script.
<b>I-II Sem Course: Software Engineering (Elective – I)</b>	





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CO-1	Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
CO-2	Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
CO-3	To communicate effectively with a range of audiences.
CO-4	Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
CO-5	Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
<b>I-II Sem Course:Artificial Intelligence(Elective – I)</b>	
CO-1	Understand the informed and uninformed problem types and apply search strategies to solve them.
CO-2	Apply difficult real life problems in a state space representation so as to solve them using AI techniques like searching and game playing
CO-3	Design and evaluate intelligent expert models for perception and prediction from intelligent environment.
CO-4	Formulate valid solutions for problems involving uncertain inputs or outcomes by using decision making techniques
CO-5	Demonstrate and enrich knowledge to select and apply AI tools to synthesize information and develop models within constraints of application area.
<b>I-II Sem Course:Compiler Design (Elective – 1)</b>	
CO-1	Discuss the major phases of compilers and use the knowledge of the Lex tool.
CO-2	Develop the parsers and experiment with the knowledge of different parsers design without automated tools.
CO-3	Describe intermediate code representations using syntax trees and DAG's as well as use this knowledge to generate intermediate code in the form of three address code representations.
CO-4	Classify various storage allocation strategies and explain various data structures used in symbol tables.
CO-5	Summarize various optimization techniques used for dataflow analysis and generate machine code from the source code of a novel language.
<b>I-II Sem Course:Machine Learning (Elective – 1)</b>	
CO-1	Learn the basics of learning problems with hypothesis and version spaces.
CO-2	Understand the features of machine learning to apply on real world problems.





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CO-3	Characterize the machine learning algorithms as supervised learning and unsupervised learning and Apply and analyze the various algorithms of supervised and unsupervised learning.
CO-4	Analyze the concept of neural networks for learning linear and non-linear activation functions.
CO-5	Learn the concepts in Bayesian analysis from probability models and methods.
<b>I-II Sem Course: Image Processing (Elective -2)</b>	
CO-1	Discuss Digital Image Fundamentals.
CO-2	Review of Image Enhancement in the Frequency Domain.
CO-3	Deal with Image Restoration.
CO-4	Understand Image Segmentation, Representation and Object recognition.
CO-5	Design algorithms to solve image processing problems and meet design specifications.
<b>I-II Sem Course: Parallel Algorithms (Elective – 2)</b>	
CO-1	Develop parallel algorithms for standard problems and applications.
CO-2	Analyse efficiency of different parallel algorithms.
CO-3	Understand different parallel architectures and models of computation.
CO-4	Introduce the various classes of parallel algorithms.
CO-5	Study parallel algorithms for basic problems.
<b>I-II Sem Course: Cloud Computing (Elective -2)</b>	
CO-1	Develop an understanding of computing paradigms and compare them.
CO-2	Choose a particular deployment model according to scenario.
CO-3	Design and develop cloud and implement various services on cloud.
CO-4	Develop an understating of virtualization technology and its different dimensions.
CO-5	Investigate the issues and challenges in implementing cloud security and mobile cloud security.
<b>I-II Sem Course: Mobile Computing (Elective -2)</b>	
CO-1	Explain the basics of mobile Computing.



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CO-2	Describe the functionality of Mobile IP and Transport Layer.
CO-3	Classify different types of mobile telecommunication systems.
CO-4	Demonstrate the Adhoc networks concepts and its routing protocols.
CO-5	Make use of mobile operating systems in developing mobile applications.



Principal  
PRINCIPAL

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