



## AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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NAAC "B++" Accredited Institute

Gunthapally (V), Abdullapurmet (M), RR Dist, Near Ramoji Film City, Hyderabad -501512.

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**2.6.1 Programme Outcomes (POs) and Course Outcomes (COs) for all Programmes offered by the Institution are stated and displayed on website and attainment of POs and COs are evaluated.**

**PO.1.Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO.2.Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO.3.Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO.4.Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO.5.Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

**PO.6.The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO.7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO.8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO.9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO.10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO.11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.



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**PO.12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

  
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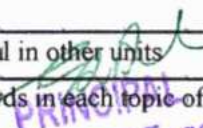
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### COMPUTER SCIENCE ENGINEERING II&I SEM COURSE OUTCOMES FOR THE ACADEMIC YEAR 2022-23

S.NO	YEAR/SEM	COURSE NAME	COURSE OUTCOMES
1	II -I	Analog and Digital Electronics	<p><b>CO1</b> : Know the characteristics of various components</p> <p><b>CO2</b> : Understand the utilization of components.</p> <p><b>CO3</b> : Design and analyze small signal amplifier circuits</p> <p><b>CO4</b> : Learn Postulates of Boolean algebra and to minimize combinational functions</p> <p><b>CO5</b> : Design and analyze combinational and sequential circuits</p> <p><b>CO6</b> : Know about the logic families and realization of logic gates</p>
2	II -I	Data Structures	<p><b>CO1</b> : Ability to select the data structures that efficiently model the information in a problem</p> <p><b>CO2</b> : Ability to assess efficiency trade-offs among different data structure implementations or combinations.</p> <p><b>CO3</b> : Implement and know the application of algorithms for sorting and pattern matching</p> <p><b>CO4</b> : Design programs using a variety of data structures, including hash tables, binary and general tree structures, search trees, tries, heaps, graphs, and AVL-trees.</p>
3	II-I	Computer Oriented Statistical Methods	<p><b>CO1</b> : Apply the concepts of probability and distributions to some case studies</p> <p><b>CO2</b> : Correlate the material of one unit to the material in other units</p> <p><b>CO3</b> : Resolve the potential misconceptions and hazards in each topic of study.</p>

  
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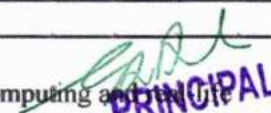
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4	II-I	Computer Organization and Architecture	CO1 : Understand the basics of instructions sets and their impact on processor design.
			CO2 : Demonstrate an understanding of the design of the functional units of a digital computer system
			CO3 : Evaluate cost performance and design trade-offs in designing and constructing a computer processor including memory.
			CO4 : Design a pipeline for consistent execution of instructions with minimum hazards.
			CO5 : Recognize and manipulate representations of numbers stored in digital computers
5	II - I	Object Oriented Programming using C++	CO1 : Able to develop programs with reusability
			CO2 : Develop programs for file handling
			CO3 : Handle exceptions in programming
			CO4 : Develop applications for a range of problems using object-oriented programming techniques
6	II-I	Analog and Digital Electronics Lab	CO1 : Know the characteristics of various components.
			CO2 : Understand the utilization of components.
			CO3 : Design and analyze small signal amplifier circuits.
			CO4 : Postulates of Boolean algebra and to minimize combinational functions
			CO5 : Design and analyze combinational and sequential circuits
			CO6 : Known about the logic families and realization of logic gates
7	II-I	Data Structures Lab	CO1 : Ability to develop C programs for computing and solving applications using basic elements like control statements, arrays, functions, pointers and strings, and data structures like stacks, queues and linked lists.
			CO2 : Ability to Implement searching and sorting algorithms

  
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8	II-I	IT Workshop Lab	CO1 : Distinguish software's and their installation
			CO2 : Design word documents by learning word processing
			CO3 : Create presentations by using different styles.
			CO4 : Introduce different way of hooking the PC on to the internet from home and Workplace and effectively usage of the internet
			CO5 : Define usage of web browsers, email, news groups and discussion forums would be covered
			CO6 : List of tools & modules would enable the students in crafting professional word document.
9	II-I	C++ Programming Lab	CO1 : Ability to creating simple programs using classes and objects in C++.
			CO2 : Develop applications using stream I/O and file I/O.
			CO3 : Implement simple graphical user interfaces.
			CO4 : Implement Object Oriented Programs using templates and exceptional handling concepts.
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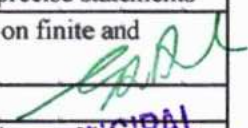
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10	II-I	Gender Sensitization Lab	CO1 : Students will have developed a better understanding of important issues related to gender in contemporary India.
			CO2 : Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film
			CO3 : Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.
			CO4 : Students will acquire insight into the gendered division of labour and its relation to politics and economics.
			CO5 : Men and women students and professionals will be better equipped to work and live together as equals.
			CO6 : Students will develop a sense of appreciation of women in all walks of life.
			Through providing accounts of studies and movements as well as the new laws that provide protection and relief to women, the textbook will empower students to understand and respond to gender violence.
11	II-II	Discrete Mathematics	CO1 : Ability to understand and construct precise mathematical proofs
			CO2 : Ability to use logic and set theory to formulate precise statements
			CO3 : Ability to analyze and solve counting problems on finite and discrete structures
			CO4 : Ability to describe and manipulate sequences
			CO5 : Ability to apply graph theory in solving computing problems

  
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12	II-II	Business Economics & Financial Analysis	CO1 : Understand the elasticity of the demand of the product, different types, and measurement of elasticity of demand and factors influencing on elasticity of demand.
			CO2 : Recognize the Production function, features of Iso-Quants and Iso-Costs, different types of internal economies, external economies and law of returns with appropriate examples.
			CO3 : Illustrate the features, merits and demerits of different forms of business organizations existing in the modern business.
			CO4 : Enumerate the concept of capital budgeting and allocations of the resources through capital budgeting methods and compute simple problems for project management.
13	II-II	Operating Systems	CO1 : Will be able to control access to a computer and the files that may be shared
			CO2 : Demonstrate the knowledge of the components of computer and their respective roles in computing.
			CO3 : Ability to recognize and resolve user problems with standard operating environments.
			CO4 : Gain practical knowledge of how programming languages, operating systems, and architectures interact and how to use each effectively
14	II-II	Database Management Systems	CO1 : Gain knowledge of fundamentals of DBMS, database design and normal forms
			CO2 : Master the basics of SQL for retrieval and management of data.
			CO3 : Be acquainted with the basics of transaction processing and concurrency control.
			CO4 : Familiarity with database storage structures and access techniques

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15	II-II	Java Programming	CO1 : Able to solve real world problems using OOP techniques
			CO2 : Able to understand the use of abstract classes.
			CO3 : Able to solve problems using java collection framework and I/o classes
			CO4 : Able to develop multithreaded applications with synchronization
			CO5 : Able to develop applets for web applications
			CO6 : Able to design GUI based applications
16	II-II	Operating Systems Lab	CO1 : Simulate and implement operating system concepts such as scheduling, deadlock management, file management and memory management
			CO2 : Able to implement C programs using Unix system calls
17	II-II	Database Management Systems Lab	CO1 : Design database schema for a given application and apply normalization
			CO2 : Acquire skills in using SQL commands for data definition and data manipulation
			CO3 : Develop solutions for database applications using procedures, cursors and triggers
18	II-II	Java Programming Lab	CO1 : Able to write programs for solving real world problems using java collection frame work.
			CO2 : Able to write programs using abstract classes.
			CO3 : Able to write multithreaded programs.
			CO4 : Able to write GUI programs using swing controls in Java
			CO1 : know the importance of Constitution and Government

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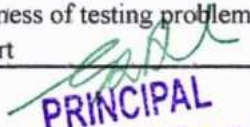
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19	II-II	Constitution of India	CO2 : become Good Citizens and know their fundamental rights, duties and principles
			CO3 : learn about the role of PM, President, Council of Ministers and Local Administration.
			CO4 : understand the importance of Election Commission.
			CO5 : Will know about Secularism, Federalism, Democracy, Liberty, Freedom of Expression, Special Status of States etc.
20	III-I	Formal Languages & Automata Theory	CO1 : Able to understand the concept of abstract machines and their power to recognize the languages.
			CO2 : Able to employ finite state machines for modeling and solving computing problems.
			CO3 : Able to design context free grammars for formal languages
			CO4 : Able to gain proficiency with mathematical tools and formal methods.
21	III-I	Software Engineering	CO1 : Ability to translate end-user requirements into system and software requirements, using e.g. UML, and structure the requirements in a Software Requirements Document (SRD)
			CO2 : Identify and apply appropriate software architectures and patterns to carry out high level design of a system and be able to critically compare alternative choices.
			CO3 : Will have experience and/or awareness of testing problems and will be able to develop a simple testing report
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22	III-I	Computer Networks	CO1 : Gain the knowledge of the basic computer network technology
			CO2 : Gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model.
			CO3 : Obtain the skills of subnetting and routing mechanisms
			CO4 : Familiarity with the essential protocols of computer networks, and how they can be applied in network design and implementation
23	III-I	Web Technologies	CO1 : gain knowledge of client-side scripting, validation of forms and AJAX programming
			CO2 : understand server-side scripting with PHP language
			CO3 : understand what is XML and how to parse and use XML Data with Java
			CO4 : To introduce Server-side programming with Java Servlets and JSP
24	III-I	Information Theory & Coding (Professional Elective - I)	CO1 : Learn measurement of information and errors
			CO2 : Obtain knowledge in designing various source codes and channel codes
			CO3 : Design encoders and decoders for block and cyclic codes
			CO4 : Understand the significance of codes in various applications
25	III-I	Advanced Computer Architecture (Professional Elective - I)	CO1 : Computational models and Computer Architectures.
			CO2 : Concepts of parallel computer models.
			CO3 : Scalable Architectures, Pipelining, Superscalar processors, multiprocessors

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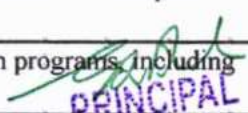
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26	III-I	Data Analytics (Professional Elective - I)	CO1 : Understand the impact of data analytics for business decisions and strategy
			CO2 : Carry out data analysis/statistical analysis
			CO3 : To carry out standard data visualization and formal inference procedures
			CO4 : Design Data Architecture
			CO5 : Understand various Data Sources
27	III-I	Image Processing (Professional Elective - I)	CO1 : Demonstrate the knowledge of the basic concepts of two-dimensional signal acquisition, sampling, and quantization
			CO2 : Demonstrate the knowledge of filtering techniques.
			CO3 : Demonstrate the knowledge of 2D transformation techniques
			CO4 : Demonstrate the knowledge of image enhancement, segmentation, restoration and compression techniques
28	III-I	Principles of Programming Languages (Professional Elective - I)	CO1 : Acquire the skills for expressing syntax and semantics in formal notation
			CO2 : Identify and apply a suitable programming paradigm for a given computing application
			CO3 : Gain knowledge of and able to compare the features of various programming languages
29	III-I	Computer Graphics (Professional Elective - II)	CO1 : Acquire familiarity with the relevant mathematics of computer graphics.
			CO2 : Be able to design basic graphics application programs, including animation
			CO3 : Be able to design applications that display graphic images to given specifications

  
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30	III-I	Advanced Operating Systems (Professional Elective - II)	CO1 : Understand the design approaches of advanced operating systems
			CO2 : Analyze the design issues of distributed operating systems
			CO3 : Evaluate design issues of multi processor operating systems.
			CO4 : Identify the requirements Distributed File System and Distributed Shared Memory.
			CO5 : Formulate the solutions to schedule the real time applications.
31	III-I	Informational Retrieval Systems (Professional Elective - II)	CO1 : Ability to apply IR principles to locate relevant information large collections of data
			CO2 : Ability to design different document clustering algorithms
			CO3 : Implement retrieval systems for web search tasks.
			CO4 : Design an Information Retrieval System for web search tasks
32	III-I	Distributed Databases (Professional Elective - II)	CO1 : Understand theoretical and practical aspects of distributed database systems.
			CO2 : Study and identify various issues related to the development of distributed database system.
			CO3 : Understand the design aspects of object-oriented database system and related development.
34	III-I	Natural Language Processing (Professional Elective - II)	CO1 : Show sensitivity to linguistic phenomena and an ability to model them with formal grammars.
			CO2 : Understand and carry out proper experimental methodology for training and evaluating empirical NLP systems
			CO3 : Able to manipulate probabilities, construct statistical models over strings and trees, and estimate parameters using supervised and unsupervised training methods.

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35	III-I	Software Engineering Lab	CO1 : Ability to translate end-user requirements into system and software requirements
			CO2 : Ability to generate a high-level design of the system from the software requirements
			CO3 : Will have experience and/or awareness of testing problems and will be able to develop a simple testing report
36	III-I	Computer Networks & Web Technologies Lab	CO1 : Implement data link layer framing methods
			CO2 : Analyze error detection and error correction codes.
			CO3 : Implement and analyze routing and congestion issues in network design
			CO4 : Implement Encoding and Decoding techniques used in presentation layer
			□ To be able to work with different network tools
37	III-I	Advanced Communication Skills Lab	CO1 : Accomplishment of sound vocabulary and its proper use contextually.
			CO2 : Flair in Writing and felicity in written expression.
			CO3 : Enhanced job prospects.
			CO4 : Effective Speaking Abilities
38	III-I	Intellectual Property Rights	CO1 : Distinguish and Explain various forms of IPRs.
			CO2 : Identify criteria's to fit one's own intellectual work in particular form of IPRs.
			CO3 : Apply statutory provisions to protect particular form of IPRs.
			CO4 : Analyse rights and responsibilities of holder of Patent, Copyright, Trademark, Industrial Designetc.
			CO5 : Identify procedure to protect different forms of IPRs national and international level.
			CO6 : Develop skill of making search using modern tools and technics.

  
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40	III-II	Machine Learning	<p><b>CO1</b> : Understand the concepts of computational intelligence like machine learning</p> <p><b>CO2</b> : Ability to get the skill to apply machine learning techniques to address the real time problems in different areas</p> <p><b>CO3</b> : Understand the Neural Networks and its usage in machine learning application</p>
41	III-II	Compiler Design	<p><b>CO1</b> : Demonstrate the ability to design a compiler given a set of language features</p> <p><b>CO2</b> : Demonstrate the the knowledge of patterns, tokens &amp; regular expressions for lexical analysis</p> <p><b>CO3</b> : Acquire skills in using lex tool &amp; yacc tool for devleoping a scanner and parser.</p> <p><b>CO4</b> : Design and implement LL and LR parsers</p> <p><b>CO5</b> : Design algorithms to do code optimization in order to improve the performance of a program in terms of space and time complexity.</p> <p><b>CO6</b> : Design algorithms to generate machine code.</p>
42	III-II	Design and Analysis of Algorithms	<p><b>CO1</b> : Ability to analyze the performance of algorithms</p> <p><b>CO2</b> : Ability to choose appropriate data structures and algorithm design methods for a specified application</p> <p><b>CO3</b> : Ability to understand how the choice of data structures and the algorithm design methods impact the performance of programs</p>
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43	III-II	Concurrent Programming (Professional Elective – III)	CO1 : Ability to implement the mechanisms for communication and co-ordination among concurrent processes.
			CO2 : Ability to understand and reason about concurrency and concurrent objects
			CO3 : Ability to implement the locking and non-blocking mechanisms
			CO4 : Ability to understand concurrent objects
44	III-II	Network Programming (Professional Elective – III)	CO1 : To write socket API based programs
			CO2 : To design and implement client-server applications using TCP and UDP sockets
			CO3 : To analyze network programs
45	III-II	Scripting Languages (Professional Elective – III)	CO1 : Comprehend the differences between typical scripting languages and typical system and application programming languages.
			CO2 : Gain knowledge of the strengths and weakness of Perl, TCL and Ruby, and select an appropriate language for solving a given problem.
			CO3 : Acquire programming skills in scripting language
46	III-II	Mobile Application Development (Professional Elective – III)	CO1 : Student understands the working of Android OS Practically
			CO2 : Student will be able to develop Android user interfaces
			CO3 : Student will be able to develop Android user interfaces
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47	III-II	Software Testing Methodologies (Professional Elective – III)	<p>CO1 : List a range of different software testing techniques and strategies and be able to apply specific(automated) unit testing method to the projects.</p> <p>CO2 : Distinguish characteristics of structural testing methods</p> <p>CO3 : Demonstrate the integration testing which aims to uncover interaction and compatibility problems as early as possible.</p> <p>CO4 : Discuss about the functional and system testing methods</p> <p>CO5 : Demonstrate various issues for object oriented testing</p>
48	III-II	Machine Learning Lab	<p>CO1 : understand complexity of Machine Learning algorithms and their limitations;</p> <p>CO2 : understand modern notions in data analysis-oriented computing;</p> <p>CO3 : be capable of confidently applying common Machine Learning algorithms in practice and implementing their own;</p> <p>CO4 : Be capable of performing experiments in Machine Learning using real-world data.</p>
49	III-II	Compiler Design Lab	<p>CO1 : Design and develop interactive and dynamic web applications using HTML, CSS, JavaScript and XML</p> <p>CO2 : Apply client-server principles to develop scalable and enterprise web applications.</p> <p>CO3 : Ability to design, develop, and implement a compiler for any language</p> <p>CO4 : Able to use lex and yacc tools for developing a scanner and a parser.</p> <p>CO5 : Able to design and implement LL and LR parsers.</p>

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50	III-II	Network Programming (Professional Elective-III Lab)	CO1 : To write socket API based programs
			CO2 : To design and implement client-server applications using TCP and UDP sockets
			CO3 : To analyze network programs
51	III-II	Scripting Languages (Professional Elective-III Lab)	CO1 : Ability to understand the differences between Scripting languages and programming languages
			CO2 : Able to gain some fluency programming in Ruby, Perl, TCL
52	III-II	Mobile Application Development (Professional Elective-III Lab)	CO1 : Student understands the working of Android OS Practically.
			CO2 : Student will be able to develop user interfaces.
			CO3 : Student will be able to develop, deploy and maintain the Android Applications.
53	III-II	Environmental Science	CO1 : Understand key concepts from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions.
			CO2 : Appreciate concepts and methods from ecological and physical sciences and their application in environmental problem solving.
			CO3 : Appreciate the ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems.
			CO4 : Reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world.

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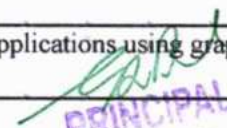
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54	IV - I	Cryptography & Network Security	CO1 : Student will be able to understand basic cryptographic algorithms, message and web authentication and security issues.
			CO2 : Ability to identify information system requirements for both of them such as client and server.
			CO3 : Ability to understand the current legal issues towards information security
55	IV - I	Data Mining	CO1 : Ability to understand the types of the data to be mined and present a general classification of tasks and primitives to integrate a data mining system.
			CO2 : Apply preprocessing methods for any given raw data.
			CO3 : Extract interesting patterns from large amounts of data
			CO4 : Discover the role played by data mining in various fields
			CO5 : Choose and employ suitable data mining algorithms to build analytical applications
			CO6 : Evaluate the accuracy of supervised and unsupervised models and algorithms.
56	IV - I	Graph Theory (Professional Elective -IV)	CO1 : Understand and explore the basics of graph theory.
			CO2 : Analyse the significance of graph theory in different engineering disciplines
			CO3 : Demonstrate algorithms used in interdisciplinary engineering domains.
			CO4 : Evaluate or synthesize any real world applications using graph theory.

  
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57	IV-I	Introduction to Embedded Systems (Professional Elective - IV)	<p><b>CO1</b> : Expected to understand the selection procedure of processors in the embedded domain.</p> <p><b>CO2</b> : Design procedure of embedded firm ware.</p> <p><b>CO3</b> : Expected to visualize the role of realtime operating systems in embedded systems.</p> <p><b>CO4</b> : Expected to evaluate the correlation between task synchronization and latency issues</p>
58	IV-I	Artificial Intelligence (Professional Elective -IV)	<p><b>CO1</b> : Ability to formulate an efficient problem space for a problem expressed in natural language</p> <p><b>CO2</b> : Select a search algorithm for a problem and estimate its time and space complexities.</p> <p><b>CO3</b> : Possess the skill for representing knowledge using the appropriate technique for a given problem.</p> <p><b>CO4</b> : Possess the ability to apply AI techniques to solve problems of game playing, and machine learning.</p>
59	IV -I	Cloud Computing (Professional Elective -IV)	<p><b>CO1</b> : Ability to understand various service delivery models of a cloud computing architecture.</p> <p><b>CO2</b> : Ability to understand the ways in which the cloud can be programmed and deployed.</p> <p><b>CO3</b> : Understanding cloud service providers</p>
60	IV -I	Ad-hoc & Sensor Networks (Professional Elective -IV)	<p><b>CO1</b> : Ability to understand the state-of-the-art research in the emerging subject of Ad Hoc and Wireless Sensor Networks</p> <p><b>CO2</b> : Ability to solve the issues in real-time application development based on ASN</p> <p><b>CO3</b> : Ability to conduct further research in the domain of ASN</p>

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61	IV-I	Advanced Algorithms (Professional Elective -V)	<p>CO1 : Ability to analyze the performance of algorithms</p> <p>CO2 : Ability to choose appropriate data structures and algorithm design methods for a specified application</p> <p>CO3 : Ability to understand how the choice of data structures and the algorithm design methods impact the performance of programs</p>
62	IV-I	Real Time Systems (Professional Elective -V)	<p>CO1 : Be able to explain real-time concepts such as preemptive multitasking, task priorities, priority inversions, mutual exclusion, context switching, and synchronization, interrupt latency and response time, and semaphores.</p> <p>CO2 : Able describe how a real-time operating system kernel is implemented</p> <p>CO3 : Able explain how tasks are managed.</p> <p>CO4 : Explain how the real-time operating system implements time management</p> <p>CO5 : Discuss how tasks can communicate using semaphores, mailboxes, and queues.</p> <p>CO6 : Be able to implement a real-time system on an embedded processor.</p> <p>CO7 : Be able to work with real time operating systems like RT Linux, Vx Works, MicroC /OSII, Tiny Os</p>
63	IV - I	Soft Computing (Professional Elective -V)	<p>CO1 : Interpret the impact and challenges posed by IoT networks leading to new architectural models.</p> <p>CO2 : Compare and contrast the deployment of smart objects and the technologies to connect them to network.</p> <p>CO3 : Appraise the role of IoT protocols for efficient network communication.</p> <p>CO4 : Elaborate the need for Data Analytics and Security in IoT</p> <p>CO5 : Illustrate different sensor technologies for sensing the world entities and identify the applications of IoT in Industry.</p>

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64	IV-I	Internet of Things (Professional Elective -V)	<p><b>CO1</b> : Interpret the impact and challenges posed by IoT networks leading to new architectural models.</p> <p><b>CO2</b> : Compare and contrast the deployment of smart objects and the technologies to connect them to network.</p> <p><b>CO3</b> : Appraise the role of IoT protocols for efficient network communication.</p> <p><b>CO4</b> : Elaborate the need for Data Analytics and Security in IoT.</p> <p><b>CO5</b> : Illustrate different sensor technologies for sensing real world entities and identify the applications of IoT in Industry.</p>
65	IV -I	Software Process & Project Management (Professional Elective -V)	<p><b>CO1</b> : Gain knowledge of software economics, phases in the life cycle of software development, project organization, project control and process instrumentation</p> <p><b>CO2</b> : Analyze the major and minor milestones, artifacts and metrics from management and technical perspective</p> <p><b>CO3</b> : Design and develop software product using conventional and modern principles of software project management</p>
66	IV -I	Cryptography & Network Security Lab	<p><b>CO1</b> : Understand computer security principles and discuss ethical issues for theft of information. Identify threat models and common computer network security goals</p> <p><b>CO2</b> : Explain various encryption algorithms, hashing functions, one-way authentication and public key cryptology</p> <p><b>CO3</b> : Analyze firewalls, DOS attacks and defense types. Dramatize example scenarios in DNS and IPSec applications</p>
			<p style="text-align: right;">Principal Avanthi Institute of Engg. &amp; Tec. Gunthapally (V), Abdullapurmet (M), R.R. Dist</p>



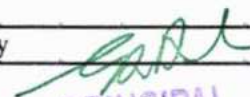
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65	IV-II	Organizational Behaviour	CO1 : Analyze the behavior of individuals and groups in organizations in terms of the key factors that influence organization behavior.
			CO2 : Critically evaluate the potential effects of important developments in the external environment on organizational behavior.
			CO3 : Critically evaluate the potential effects of important developments in the external environment on organizational behavior.
			CO4 : Manage conflict in organizational context and deal with stress.
			CO5 : Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behavior of people in the organization.
66	IV-II	Computational Complexity (Professional Elective – VI)	CO1 : Introduces to theory of computational complexity classes
			CO2 : Discuss about algorithmic techniques and application of these techniques to problems
			CO3 : Introduce to randomized algorithms and discuss how effective they are in reducing time and space complexity
			CO4 : Discuss about Graph based algorithms and approximation algorithms
			CO5 : Discuss about search trees
67	IV-II	Distributed Systems	CO1 : Ability to understand Transactions and Concurrency control.
			CO2 : Ability to understand Security issues.
			CO3 : Understanding Distributed shared memory
			CO4 : Ability to design distributed systems for basic level applications.
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68	IV-II	Neural Networks & Deep Learning	CO1 : Ability to understand the concepts of Neural Networks
			CO2 : Ability to select the Learning Networks in modeling real world systems
			CO3 : Ability to use an efficient algorithm for Deep Models
			CO4 : Ability to apply optimization strategies for large scale applications
69	IV-II	Human Computer Interaction	CO1 : Ability to apply HCI and principles to interaction design
			CO2 : Ability to design certain tools for blind or PH people.
70	IV-II	Cyber Forensics	CO1 : Students will understand the usage of computers in forensic, and how to use various forensic tools for a wide variety of investigations.
			CO2 : It gives an opportunity to students to continue their zeal in research in computer forensics

  
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