ADITYA COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

COURSE OUTCOMES

AY: 2021-22 **REGULATION:R20**

II B. Tech -I SEMESTER

S.NO	COURSE NAME	CO#	Course Outcomes	Bloom's taxonomy level
1	Mathematics-III(C211)	CO1	Apply the fundamental concepts of Ordinary Differential Equations and Partial Differential Equations and the basic numerical methods for their resolution	Apply
		CO2	Solve the problems choosing the most suitable method.	Understand
		CO3	Understand the difficulty of solving problems analytically and the need to use numerical approximations for their resolution.	Knowledge, Understand
		CO4	Use computational tools to solve problems and applications of Ordinary Differential Equations and Partial Differential Equations	Knowledge, Understand
		CO5	. Formulate and solve differential equation problems in the field of Industrial Organisation Engineering.	Apply
		CO6	Use an adequate scientific language to formulate the basic concepts of the course	Understand
2	**Discrete Mathematical Structures(C212)**	CO1	Ability to apply mathematical logic to solve Problems	Knowledge, Understand
		CO2	Understand sets, relations, functions and discrete Structures	Apply, Create
		CO3	Able to use logical notations to define and reason about fundamental mathematical concepts such as sets relations and functions	Evaluate
		CO4	Able to formulate problems and solve recurrence Relations	Apply, solve
		CO5	Able to model and solve real world problems using graphs and trees	Analyze
		CO6	They can produce data visualizations with the customized graphs.	Understand
3	Operating Systems(C213)	CO1	Describe the general architecture of computers, various operating Systems structures	Remembering
		CO2	Evaluate Scheduling algorithms for process management.	Analyzing
		CO3	Analysing various memory management schemes	Analyzing
		CO4	Explain about principles of deadlock.	Remembering
		CO5	Describe the file system with its implementation and mass storage structure	Remembering
		CO6	Discuss about Android operating system services	Understanding
4	Object Oriented Programming Through C++(C214)	CO1	Classify object oriented programming and procedural programming	Analyze
		CO2	Understand and Apply the concepts of Classes & Objects, friend function , constructors & destructors in program design	Understand
		CO3	Apply various forms of inheritance	Apply
		CO4	Apply and analyze operator overloading and function overloading.	Apply
		CO5	Understand dynamic memory management techniques using pointers	Understand
		CO6	Apply generic programming with templates, file I/O and exception handling on various applications	Apply
5	Data Base Management Systems(C215)	CO1	Understand the database systems, Data independence and Architecture of Database systems	Understand
		CO2	Explain ER model, Relational Model, Relational Algebra and Relational Calculus. Apply the models and Build database system for a given real world problem	Apply
		CO3	Create, Maintain and Manipulate a Relational Database using SQL.	Apply
		CO4	Discuss about redundancy issues and Solve it using Normalization in database design. Explain issues in data storage and query processing and can formulate appropriate solutions.	Analyze
		CO5	Understand the concepts of Transaction Management and Concurrent execution of transactions. Solve the issues raised due to Concurrent execution of the Transactions.	Analyze
		CO6	Describe the storage structures and indexing techniques in databases	Understand
6	Object Oriented Programming Through C++ Lab(C216)	CO1	Understand the difference between the top-down and bottom-up approach	Understand
		CO2	Describe the object-oriented programming approach in connection with C++	Understand
		CO3	Apply the concepts of object-oriented programming	Applying
		CO4	Illustrate the process of data file manipulations using C++	Applying
		CO5	Apply virtual and pure virtual function & complex programming situations	Applying
		CO6	Apply generic programming with templates, file I/O and exception handling on various applications	Applying
7	Operating Systems Lab(C217)	CO1	Demonstrate the process CPU scheduling algorithms	Understanding
		CO2	Use system calls in the operating system	Applying
		CO3	Describe and develop various page replacement algorithms.	Remember
		CO4	Explain and write programs for dead lock avoidance and prevention	Remember
		CO5	Develop C programs by applying various Linux commands like ls, cp etc.	Create
		CO6	Develop C programs for process communication, threads and synchronization	Create
8	Data Base Management Systems Lab(C218)	CO1	Understand, appreciate and effectively explain the underlying concepts of database technologies	Understand
		CO2	Design and implement a database schema for a given problem-domain	Apply
		CO3	Normalize a database	Analyse
		CO4	Populate and query a database using SQL DML/DDL commands.	Apply
		CO5	Declare and enforce integrity constraints on a database using a state-of-the-art RDBMS	Apply
		CO6	Programming PL/SQL including stored procedures, stored functions, cursors, packages.	Apply

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II B. Tech -II SEMESTER

S.NO	COURSE NAME	CO#	Course Outcomes	Bloom's taxonomy level
1	Statistics with R(C221)	CO1	Install and Configure R and use advanced data structures and arrays.	Apply
		CO2	Apply Control Structures and R fundamental constructors to find solutions for data analysis.	Apply
		CO3	Apply statistical models to fit data and data Analysis.	Apply
		CO4	Import, review, manipulate and summarize data sets in R	Apply
		CO5	Explore data-sets to create testable hypotheses and identify appropriate statistical tests	Apply
		CO6	Perform appropriate statistical tests using R, create and edit visualizations with R	Apply
2	**Principles of Software Engineering (C222)**	CO1	Ability to understand Software Development life cycle process Models	Knowledge
		CO2	Student able to know various models in Agile	Knowledge and understand
		CO3	Student able to understand the requirement analysis and transform those requirements to executable code	Analyze
		CO4	Students will be able perform various life cycle activities like analysis ,design and implementation	Knowledge and understand
		CO5	Skills to perform to testing and execute the test cases	Knowledge and understand
		CO6	Skill to design ,Implement and execute test cases at integration level	Knowledge
3	Automata Theory and Compiler Design(C223)	CO1	Distinguish various language processors and understands about structure of compiler, Lexical Analysis	Understand
		CO2	Design Top down and Bottom up Parsers	Understand
		CO3	Develop More powerful LR Parsers and Understands Syntax Directed Definitions and Syntax Directed Translations	Apply
		CO4	Describe techniques of Intermediate Code Generator	Describe
		CO5	Discuss about runtime environment concepts and code generator with illustration	Understand
		CO6	Apply various machine independent optimization techniques	Understand
4	Java Programming (C224)	CO1	Develop java programs using basic programming constructs in java, and able to use Control structures in the program development	Apply
		CO2	Experiment with Object Oriented Concepts like classes, objects.	Apply
		CO3	Apply and create programs using Object Oriented Constructs such as Inheritance, interfaces, and exception handling.	Apply
		CO4	Construct applications using code reusability and extend the code to enhance existing programs	Apply
		CO5	Design programs using object oriented construct and handle any time of run time errors	Analyze
		CO6	Implement multithreading concepts in application development with database connectivity.	Understand
5	Managerial Economics and Financial Accountancy (C225)	CO1	Enumerate the concepts of Economics, Demand and its Forecasting methods	Remember
		CO2	Understanding the relationship among inputs, output, nature of cost, cost combinations.	Understanding
		CO3	State the nature of Markets, its structure, Price- Output decisions under different market structures & pricing strategies	Remember
		CO4	Identify various types of organizations and their characteristics based on ownership	Remember
		CO5	Illustrate financial statements by using various accounting tools	Understand
		CO6	Discuss various methods to select a financial proposal by using capital budgeting methods	Understand
6	UML Lab(C226)	CO1	Explain the Case studies and design the Model.	Understand
		CO2	Describe how design patterns solve design problems using usecase diagrams	Understand
		CO3	Create design solutions using sequence diagram.	Applying
		CO4	Create design solutions using component diagram	Applying
		CO5	Create design solutions using state chart and activity diagram	Applying
7	FOSS Lab (C227)	CO1	Demonstrate UNIX commands for file handling and process control	Understanding
		CO2	Construct regular expressions for pattern matching and apply them to various filters for a specific task.	Applying
		CO3	Analyze a given problem and apply requisite facets of shell programming in order to devise a shell script to solve the problem	Remember
		CO4	Apply C language to simulate UNIX commands	Remember
		CO5	Apply UNIX library functions and system calls.	Create
		CO6	Develop programs using AWK concepts.	Create
8	Java Programming Lab (C228)	CO1	Evaluate default value of all primitive data type,	Apply
		CO2	Demonstrate various operations using operator and expressions, experiment with various Control-flow and Strings.	Apply
		CO3	Determine Class, Objects, Methods, Inheritance, Exception, Runtime Polymorphism, User defined Exception handling mechanism	Apply
		CO4	Illustrate reusability of code using various inheritance techniques	Apply
		CO5	Experiment with run time errors and handle exceptions.	Analyze
		CO6	Construct Threads, Event Handling, implement packages, developing applets	Apply

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AY: 2021-2022 REGULATION: R19

B. Tech.III/I SEMESTER

S.NO	COURSE NAME	CO#	Course Outcomes	Bloom's taxonomy level
1	Advanced Data Structures(C311)	CO1	Analyze various sorting techniques and their performance	Analyze
		CO2	Applying Dictionary construction with skip lists, and hash tables for effective data/Information management	Apply
		CO3	Get an understanding of how heaps, Priority Queues can be created ,manipulated and Analyze its applications in various data structures	Understand
		CO4	Demonstrate and understanding height balancing in AVL and B trees	Demonstrate
		CO5	Ability of design considerations for constructing balanced trees and its applications	Understand
		CO6	To make the students to learn the use of Digital Search Structures and pattern matching algorithms.	Understand
2	Computer Networks(C312)	CO1	Classify various types of network topologies, protocols & enumerate the layers of the OSI model and TCP/IP Model.	Analyze
		CO2	Explain about multiplexing.	Understand
		CO3	Apply Error Detecting & Correcting methods.	Apply
		CO4	Identify collision detection and apply avoidance methods. Describe about various IEEE Standards	Remember
		CO5	Discuss various types of routing and congestion control algorithms	Understand
		CO6	Discuss about the client server communication	Understand
3	Compiler Design(C313)	CO1	Distinguish various language processors and understands about structure of compiler, Lexical Analysis	Understand
		CO2	Design Top down and Bottom up Parsers	Understand
		CO3	Develop More powerful LR Parsers and Understands Syntax Directed Definitions and Syntax Directed Translations	Apply
		CO4	Describe techniques of Intermediate Code Generator	Describe
		CO5	Discuss about runtime environment concepts and code generator with illustration	Understand
		CO6	Apply various machine independent optimization techniques	Understand
4	Artificial Inteligence(C314)	CO1	Can understand the applications and basics of AI algorithm	(Understand)
		CO2	Can implement basic algorithms using exhaustive, heuristic search	Apply
		CO3	Can solve the problems using propositional logic	(Apply)
		CO4	Will be able to build a knowledge base	(Understand)
		CO5	Can create an expert system	Apply
		CO6	Can formalize the given problem into a framework	(Understand)
5	Scripting Languages(C315)	CO1	Understand the concepts of Perl scripting languages for developing web-based projects	Understand
		CO2	Illustrates advanced Perl scripting concepts and understand the PHP scripting fundamentals	Demonstrate
		CO3	Able to create Files using PHP scripts	Understand
		CO4	Able to create web forms using PHP along with security concerns and sending email with encrypting techniques	Understand
		CO5	Understand the basics constructs of TCL Scripting languages and can Create GUI Components by using TCL/TK	Analyze
		CO6	Able to write Python scripts for and understand the web application development using python scripts	Understand
6	Design And Analysis of Algorithms(C316)	CO1	Describe asymptotic notation used for denoting performance of algorithms	Understand
		CO2	Discuss and Solve problems using Divide and Conquer approach	Demonstrate
		CO3	Discuss and Solve problems using Greedy Algorithmic approach	Understand
		CO4	Discuss and Solve problems using the Dynamic Programming approach	Understand
		CO5	Discuss and Solve problems using Backtracking approach	Analyze
		CO6	Discuss and Solve Problems using Branch and Bound approach	Understand
7	CN&CD Lab(C317)	CO1	Understand the practical approach to network communication protocols.	Understand
		CO2	Understand network layers, structure/format and role of each network layer.	Understand
		CO3	Able to design and implement various network application such as data transmission between client and server, file transfer, real-time multimedia transmission.	Demonstrate
		CO4	Understand the various Routing Protocols/Algorithms and Internetworking.	Knowledge
		CO5	Understand the basic concepts of application layer protocol design; including client/server models, peer to peer models, and network	Analysis
		CO6	Understand the structure and organization of computer networks; including the division into network layers, role of each layer, and	Application
8	Artificial Inteligence Lab(C318)	CO1	Explain artificial intelligence, its characteristics and its application areas	Knowledge
		CO2	Formulate real-world problems as state space problems, optimization problems or constraint satisfaction problems	Analysis
		CO3	Select and apply appropriate algorithms and AI techniques to solve complex problems	Application
		CO4	Design and develop an expert system by using appropriate tools and techniques	Application
		CO5	Discuss various techniques and algorithms of AI used in general problem solving, optimization problems, constraint satisfaction problems	Understand
		CO6	Able to the applications of AI and agent based approach to AI.	Demonstrate

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COURSE OUTCOMES

AY: 2021-2022 REGULATION: R19

B. Tech.III/I SEMESTER

S.NO	COURSE NAME	CO#	Course Outcomes	Bloom's taxonomy level
1	Data Warehousing and Data Mining(C321)	**CO1**	**Design** a Data warehouse system and perform business analysis with OLAP tools	Create
		CO2	**Apply** suitable pre-processing and visualization techniques for data analysis	Apply
		CO3	**Apply** frequent pattern and association rule mining techniques for data analysis	Apply
		CO4	**Understand** and implement pattern mining in multilevel and multi-dimensional space	Understand
		CO5	**Apply** appropriate classification techniques for data analysis	Analyze
		CO6	**Apply** appropriate clustering techniques for data analysis	Analyze
2	Priniciples of Communications(C322)	**CO1**	Understand the basic building blocks in analog communication systems and analyze Amplitude Modulation and Demodulation.	Analyze
		CO2	Analyze the modulation and demodulation schemes in FM.	Understand
		CO3	Analyze the modulation and demodulation schemes in FM.	Apply
		CO4	Understand the random variables and random processess concept with noise	Remember
		CO5	Model various noise distributions for given modulation techniques.	Understand
		CO6	Understand the various pulse modulation techniques and compare FDM and TDM techniques.	Understand
3	Web Technologies(C323)	**CO1**	Create Static Web pages using HTML elements and CSS Styles	Apply
		CO2	Write JavaScript code to validate the forms and create forms using Angular & demonstrate the Node JS modules and file system	Apply
		CO3	Develop XML Documents and use Document Object Model,	Apply
		CO4	Apply AJAX UI tags and integrate PHP and AJAX for web application development.	Apply
		CO5	Create and run server-side scripts using PHP scripting constructs	Apply
		CO6	Create Server-Side Scripts using Servlet and JSP and connect with Database, Understand the fundamentals of MongoDB, jQuery and Ruby Scripting	Apply
5	anagerial Economics and Financial Accountancy(C325)	**CO1**	Enumerate the concepts of Economics, Demand and its Forecasting methods	Remember
		CO2	Understanding the relationship among inputs, output, nature of cost, cost combinations.	Understanding
		CO3	State the nature of Markets, its structure, Price- Output decisions under different market structures & pricing strategies	Remember
		CO4	Identify various types of organizations and their characteristics based on ownership	Remember
		CO5	Illustrate financial statements by using various accounting tools	Understand
		CO6	Discuss various methods to select a financial proposal by using capital budgeting methods	Understand
6	Web Technologies Lab (C326)	**CO1**	Develop static web pages by using HTML	Create
		CO2	Construct Web pages with different style sheets	Create
		CO3	Develop XML and XSLT for webapplications	Create
		CO4	Demonstrate the constructs of Ruby scripting Language	Understand
		CO5	Demonstrate the use of Perl language elements	Understand
		CO6	Build dynamic client server web applications with PHP	Create
7	Data Mining Lab(C327)	**CO1**	To develop an understanding of the various concepts and tools behind data warehousing and mining data for business intelligence	Application
		CO2	To understand the need of need of preprocessing and convert raw data into preprocessed data	Application
		CO3	Extract knowledge using data mining techniques	Application
		CO4	Apply classification algorithms for prediction unknown classes	Application
		CO5	Extract association rules on frequent items in transaction data	Application
		CO6	Categorize major clustering methods.	Application

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COURSE OUTCOMES

AY: 2021-2022				REGULATION: R16
B. Tech.IV/I SEMESTER				
S.NO	**COURSE NAME**	**CO#**	**Course Outcomes**	Bloom's taxonomy level
1	Cryptography and Network Security(C411)	**CO1**	Tell about information security awareness and a clear understanding of its importance.	Remember
		CO2	Review symmetric key cryptography by sharing key	Apply
		CO3	Illustrate Asymmetric key cryptography by sharing information	Apply
		CO4	Interpret digital signatures in documents and generate MAC using hashing functions	Understand
		CO5	Review of network security designs using available secure solutions (such as PGP, SSL, IPSec, etc)	Understand
		CO6	Relate security at network layer	Analyze
2	Data Mining(C412)	**CO1**	Identify the key processes of data mining, data warehousing and knowledge discovery process.	Remember
		CO2	Understand the need and importance of preprocessing techniques	Apply
		CO3	Analyse and deploy appropriate classification techniques	Analyse
		CO4	Analyze Advanced Classification algorithms	Analyse
		CO5	Analyze and evaluate performance of algorithms for Association Rules.	Analyse
		CO6	Cluster the high dimensional data for better organization of the data	Understand
3	Internet of Things(C413)	**CO1**	Describe what IoT is and how it works today	Analyse
		CO2	Recognise the factors that contributed to the emergence of IoT	Analyse
		CO3	Design and program IoT devices	Remember
		CO4	Secure the elements of an IoT device	Analyse
		CO5	Design an IoT device to work with a Cloud Computing infrastructure.	Remember
		CO6	Define the infrastructure for supporting IoT deployments	Understand
4	Managerial Economics and Financial Analysis(C414)	**CO1**	Enumerate the concepts of Economics, Demand and its Forecasting methods	Remember
		CO2	Understanding the relationship among inputs, output, nature of cost, cost combinations.	Understanding
		CO3	State the nature of Markets, its structure, Price- Output decisions under different market structures & pricing strategies	Remember
		CO4	Identify various types of organizations and their characteristics based on ownership	Remember
		CO5	Illustrate financial statements by using various accounting tools	Understand
		CO6	Discuss various methods to select a financial proposal by using capital budgeting methods	Understand
5	Mobile Computing(C415)	**CO1**	Illustrate the basic comcepts, techniques,protocols related to GSM & GPRS architecture to perform requirement analysis	Understand
		CO2	Summarize different Medium access control mechanisms	Understand
		CO3	Explain the major concepts of mobile IP to improve the service quality of network	Understand
		CO4	Explain the TCP protocol & the data bases issues in mobile environment & data delivery models	Understand
		CO5	Analyze classification of data delivery mechanisms, data dissemination & broadcast models	Analyze
		CO6	Survey of Mobile Ad-hoc network protocols for distinguishing them from infrastructure-based networks.	Analyze
6	Cloud Computing(C416)	**CO1**	Distinguish between different cloud offerings, cloud environments, and distributed and grid computing technologies.	Understand
		CO2	Differentiate between various virtualization strategies.	Understand
		CO3	Determine a cloud architecture that addresses resource management and security management for a real-world scenario.	Analyses
		CO4	Design, develop, and deploy a small application on a commercial cloud platform such as Amazon Web Services (AWS), Microsoft Azure, or others.	Apply
		CO5	Examine resource management, performance, and scheduling policies and mechanisms.	Analyses
		CO6	Choose from a variety of cloud storage systems like as DFS, GFS, HDFS, S#, Big Table, and others.	Analyses
7	Cryptography and Network Security Lab (C417)	**CO1**	Identify basic security attacks and services	Understanding
		CO2	Use symmetric and asymmetric key algorithms for cryptography	Analyzing
		CO3	Make use of Authentication functions	Analyzing
		CO4	Describe network security services and mechanisms.	Applying
		CO5	able to Data integrity, Authentication, Digital Signatures.	Applying
8	Mobile Computing Lab(C418)	**CO1**	Understand and identify the GSM, GPRS and Bluetooth software model for mobile computing	Create
		CO2	The ability to develop applications that are mobile-device specific and demonstrate current practice in mobile computing contexts.	Create
		CO3	Understanding of the characteristics and limitations of mobile hardware devices including their user-interface modalities	Create
		CO4	Analyze QoS over wire and wireless channels	Understand
		CO5	Able to promote the awareness of the life-long learning,business ethics, professional ethics and currentmarketing scenarios.	Understand

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AY: 2020-2021 REGULATION: R16

B. Tech.IV/II SEMESTER

S.NO	COURSE NAME	CO#	Course Outcomes	Bloom's taxonomy level
1	Distributed Systems	CO1	Demonstrate distributed systems concept and system models	Understanding
		CO2	Implement inter process communication to make a shared communication between client and server	Applying
		CO3	Implement remote invocation methods for distributed object communication	Applying
		CO4	Analyze operating system support with respect to processes and threads	Analyzing
		CO5	List out the components of file service architecture	Remembering
		CO6	Discuss various types of replications	Understanding
2	Management Science	CO1	Able to understand and apply the concept of management and administration, functions of management	Understanding
		CO2	Discuss and analyze operations management and inventory management techniques.	Understanding
		CO3	Determine & analyze the importance of human resources and their functions and marketing strategies to promote the products	Apply
		CO4	Illustrate to apply the knowledge of project management techniques to complete the project in optimum cost and time.	Understand
		CO5	Formulate to analyze components of strategic management	Create
		CO6	to apply various contemporary management practices.	Understand
3	Management Information System(C423)	CO1	Describe the role of information technology and information systems in business	Understand
		CO2	Appraise the knowledge previously acquired of Microsoft Office	Understand
		CO3	Analyze how information technology impacts a firm	Analyze
		CO4	Interpret how to use information technology to solve business problems	Apply
		CO5	Illustrate the impact of information systems in society	Analyze
		CO6	Reproduce a working knowledge of concepts and terminology related to information technology	Apply
4	Cyber Security(C424)	CO1	InterpretCyber Crime fundamental concepts	(Understand)
		CO2	Identify different classes of attacks	(Remember)
		CO3	Recognize threats and vulnerabilities of Mobile and wireless devices and their security issues	(Understand)
		CO4	Apply Tools and techniques Used in Cybercrime	(Apply)
		CO5	Analyze risk management processes and legal practices	(Analyze)
		CO6	Illustrate computer forensic concepts, challenges, tools and techniques	(Understand)
5	Seminar(C425)	CO1	Students can understand the existing and latest technologies in the computer science domain.	Understand
		CO2	They can characterize, evaluate various technologies in computer science and decide their area of interest.	Analyze
		CO3	Students can able toimprove their communication skills.	Analyze
		CO4	They can able prepare technical presentations.	Understand
		CO5	Students can able to write technical reports.	Understand
		CO6	Graduates will get an opportunity to improve their public speaking skills through knowledge sharing.	Understand
6	Project(C426)	CO1	identify and define problems in the area of computer science	Analyse
		CO2	Skills regarding Analyse the problem and developing designs	Analyse
		CO3	Selections of platform for development suitable to problem	Apply
		CO4	Testing, Deployment , maintenance and documentation	Apply
		CO5	Handle multidisciplinary projects	Analyse
		CO6	Engineering and project management	Apply