



Computer Science & Engineering

Course Outcome

Subject	Course Outcome
1. Applied Mathematics-I	1.Student can solve higher order linear differential equation with constant coefficient.
	2.Student can apply Laplace and inverse Laplace transforms for solving linear differential equations.
	3.Student can express a function in terms of sine's and cosines components so as to model simple periodic functions
	4.Student can solve problems on Z transform and explain its properties
	5.Student can find the relation between two variables for the given data using regression and explain various probability distribution functions.
	6.Student can solve problems based on queuing theory.
2. Discrete Mathematical Structures	1.Arrive at inference from the given premises applying mathematical logic
	2. Select the associated operations and terminologies to solve logical problems for sets, functions, and relations.
	3. Classify algebraic systems based on its properties and select an appropriate for given application
3.Data Structures	1.Describe linear and non-linear data structures
	2. Implement abstract data structures
	3. Analyze and Implement Tree and Graph data structures
	4. Identify appropriate usage of data structures for a given problem
4. Computer Graphics	1.Draw graphical elements using built-in graphic functions in 'C'.
	2. Differentiate different graphical devices.
	3. Draw lines, Circles and fill polygons.
	4. Apply simple 2D and 3D transformations to given object and create simple 2D animations
	5. Demonstrate different clipping algorithms, surfaces and different types of curves.
5. Microprocessors	1.Describe the basic building blocks, operations & the addressing modes of microprocessors.
	2. Write an assembly language program for 8086 microprocessor.



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	3. Implement interfacing programs for different peripheral devices with microprocessor
6. Python Programming	1. Write Python scripts using procedure-oriented approach of writing a computer program.
	2. Write Python scripts using Object oriented approach of writing a computer program
	3. Exhibit ability to use Python's standard library packages to provide solution to a given problem.
Class Sy B.Tech Sem II	
1. Applied Mathematics- II	1) Student can solve nonlinear algebraic and transcendental equations.
	2) Student can solve simultaneous linear and nonlinear equations.
	3) Students can apply numerical methods to evaluate definite integrals.
	4) Student can apply knowledge of basics of fuzzy set theory to solve the problems.
	5) Student can solve the fuzzy equations
	6) Students can solve a particular kind of problems arises in day to day life using simplex method and Assignment Problems.
2. Theory Of Computation	1. Build regular expression for a given language.
	2. Design different types of automata.
	3. Classify languages as regular and non regular language.
	4. Detect ambiguity in a grammar and convert into unambiguous grammar and normal forms.
	5. Design pushdown automata and Turing machine for a given language.
3. Computer Organization And Architecture	1. Describe the functional architecture of computing systems.
	2. Analyse various parallel programming model.
	3. Use ARC Processor based instructions to write assembly language program.
	4. Demonstrate the design aspects of memory, instruction level parallelism and multiprocessors.
4. Computer Networks	1. Understand the basic principles of OSI reference model and TCP/IP protocol suite for Network-communication.



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	2. Identify the different classes of IP address for network set-up. 3. Implement client-server paradigm using transport layer protocols. 4. Select and use appropriate Application Layer Protocols for a given problem.
5.Object Oriented Programming Using Java	1.Implement Object Oriented Programming paradigm using Java language. 2. Exhibit the ability to use Java runtime library APIs to provide a solution to a given problem. 3. Test and debug a Java program for a given problem.
Class TY B.Tech Sem I	
1.System Programming	1.Describe the basic principles of system software and tools. 2. Implement Assembler and Macros to provide program generation facilities. 3. Use LPDT tools for a relevant problem to generate a scanner and parser. 4. Apply linkers and loaders for execution of a program.
2. Operating Systems	1.Comprehend the features of operating system to formulate its role and responsibilities. 2. Analyze the principles of concurrency and synchronization to provide solution to the concurrent programs. 3. Simulate process scheduling and memory management techniques for CPU performance.
3.Software Engineering	1. Select and apply the appropriate lifecycle model for software development. 2. Prepare SRS and SDS accordingly for a given problem. 3. Select and apply appropriate software testing method. 4. Ensure the quality of a product by applying the quality management process.
4.Database Engineering	1.Demonstrate basics of database systems and design database using Entity-relationship model for real time application. 2. Design database using relational model for real time application and Formulate SQL. 3. Analyze a database design & apply normalization. 4. Create indices for faster retrieval. 5. Apply transaction management for maintaining database consistency.
5. Design And Analysis Of Algorithm	1.Derive time and space complexity of a given algorithm 2. Select appropriate algorithm design paradigm for a problem. 3. Apply algorithm design paradigm for a problem.



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	4. Describe and distinguish complexity classes of problem.
6. Python Programming	1. Write Python scripts using procedure and object oriented approach of writing a computer program.
	2. Exhibit ability to use Python's standard library packages to provide solution to a given problem.
	3. Test and debug python script for a given problem.
7. Java Programming	1. Implement Object Oriented Programming paradigm using Java language.
	2. Exhibit the ability to use Java runtime library APIs to provide a solution to a given problem.
	3. Test and debug a Java program for a given problem.
8. Self Learning Module – I (H.S.S.) I. Economics	1. Identify the Basic Economic problems, Resource Constraints.
	2. Apply various theories of economics for economic growth.
	3. Identify causes of Inflation consequence and remedies.
	4. To assess the impact of International Trade, foreign exchange on Indian economy.
V. Professional Ethics & Human Values	1. Inculcate the human values in their behavior.
	2. Demonstrate the Engineering ethics in their professional practice.
	3. Practice the safety and responsibility and professional rights in their professional practice.
	4. Incorporate the code of ethics of Global organizations such as ASME, ASCE, and IEEE
Class TY B.Tech Sem II	
1. Compiler Construction	1. Describe language translation and compiler design constructs.
	2. Design and develop lexical analyzer and parser.
	3. Apply optimization principles for generating code
	4. Describe storage allocation strategies for memory allocation
2. Unix Operating System	1. Describe architecture of Unix, its kernel and file system.
	2. Apply algorithms of regular file for inode assignment and disk block allocation.
	3. Use system calls and program the Shell.
	4. Describe structure of process, Memory and I/O management.
	5. Implement programs using shell script.
3. Computer Organization And Architecture	1. Describe the functional architecture of computing systems.
	2. Analyze various algorithms for arithmetic computation and arrive at fastest one.
	3. Use ARC Processor based instructions to write assembly language program.
	4. Demonstrate the design aspects of memory, instruction level parallelism and multiprocessors.
4. Artificial Intelligence	1. Formulate and solve sequence of actions for an agent as a search problem.



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	<ol style="list-style-type: none"> Infer from represented knowledge using logical and probabilistic reasoning methods Solve agent decision problems using probability theory Comprehend forms of learning and demonstrate their working.
5. Mobile Application Development	<ol style="list-style-type: none"> Select suitable development practices for a mobile application Build cross platform mobile application for a given problem scenario. Choose suitable method of testing, signing, packaging and distribution for a mobile application.
6. Object Oriented Modeling & Design	<ol style="list-style-type: none"> Demonstrate basics of Object Oriented Modeling. Design models for real world problems using Object Modeling Technique. Design UML Diagrams for real world problems.
7. Mini Project	<ol style="list-style-type: none"> Select mini project problem of societal relevance in selected domain Design system architecture with due consideration of environment, sustainability and ethics. Develop the solution to the problem using tools, resources and frameworks. Engage in teamwork and communicate effectively, while observing professional ethics. Inculcate habit of self study and lifelong learning.
8. Self Learning Module II (Technical) A. Ui / Ux Technology	<ol style="list-style-type: none"> Design, develop and apply styling to a web-based application. To be able to design responsive web design. Build efficient and scalable web API and application. Develop lightweight browser based functionalities leveraging client side scripting framework.
Class Be B.Tech Sem I	
1. Distributed Systems	<ol style="list-style-type: none"> Describe the basics of distributed systems and middleware. Design and simulate distributed system software modules using various methods, strategies, and techniques presented in the course that fulfils requirements for desired properties. Apply principles of distributed systems in a real world setting across multidisciplinary areas. Apply knowledge of Hadoop Distributed File system, its architecture and working for active research at the forefront of these areas.
2. Machine Learning	<ol style="list-style-type: none"> Interpret the need and applications of machine learning. Build machine learning model for a given problem. Analyze machine learning model to improve their accuracy.



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3. Modern Database System	1. Implement principles of parallel and distributed database.
	2. Apply object-oriented design principles for the database design.
	3. Apply OLAP operations on a given data and use data mining algorithms for prediction.
	4. Use query evaluation and query optimization algorithms for query processing.
	5. Describe modern database technologies for Bigdata.
4. Software Testing & Quality Assurance	1. Identify what a software bug is, how serious they can be, and why they occur.
	2. Test software to meet quality objectives & requirements.
	3. Apply testing skills to common testing tasks.
	4. Perform the planning and documentation of test efforts.
	5. Describe software quality concepts, assurance & standards.
	6. Use testing tools to test software in order to improve test efficiency with automation.
5. Data Mining	1. Examine the types of the data to be mined for a particular application.
	2. Apply preprocessing statistical methods for any given raw data.
	3. Select and apply proper data mining algorithms to build analytical applications
	4. Comprehend the roles that data mining plays in various fields and manipulate different data mining techniques.
	5. Demonstrate and apply a wide range of Clustering, Classification and association rule mining Algorithms
	4. Develop and document, real-time operating systems , Programming Languages for Real-Time and Software Design Approaches of Real-Time Systems
	5. Recognize communication techniques and Databases required for Real-Time Systems
5. Web Technology	1. Design web pages using HTML, CSS and Javascript.
	2. Analyze client/server side scripting technologies to meet requirements of web application and choose an appropriate one.
	3. Develop web application using client/server side scripting technologies for a given problem.
Class Be B.Tech Sem II	
1. Management Information System	1) Student can elaborate basic infrastructure and strategies used in information systems.
	2) Student can apply professional ethical codes of conduct as appropriate to industry and organizational environments
	3) Students can design information systems using principles of Communication Technologies.
	4) Students will be able to develop secure information systems.



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2. Information & Cyber Security	1. Apply security technologies and policies to protect digital information.
	2. Identify & evaluate Information security threats & vulnerabilities in information system and apply security measures to real time scenario.
	3. Demonstrate the use of standards and cyber laws to enhance information security in the development process and infrastructure protection.
	4. Understand emerging abstract models for Blockchain Technology.
3. Big Data Analytics	1. Comprehend limitations of conventional DBMS and recognize need for Big Data Analytics.
	2. Compare Big data processing technologies and choose appropriate one for a given scenario.
	3. Use Various Big data technologies for Big data analytics
	4. Write Map Reduce program to process Big Data.
	5. Address Security and Privacy concerns for a given cloud application scenario.
4. Deep Learning	1) Students will be able to describe the deep neural network.
	2) Students will be able to design a deep neural network for a given problem.
	3) Students will be able to design a convolutional neural network for a given problem.
	4) Students will be able to design a recurrent neural network for a given problem.
	5) Students will be able to choose appropriate deep neural network architecture for a given problem.