



## Department of Information Technology

### Course Outcomes (COs)

### TE ( Department of Information Technology)-2019 Pattern Semester-V

Course Code	Name of Subject/Course	Course Outcomes (COs)
314441	Theory of Computation	<ul style="list-style-type: none"><li><input type="checkbox"/> Construct finite state machines to solve problems in computing</li><li><input type="checkbox"/> Write mathematical expressions for the formal languages</li><li><input type="checkbox"/> Apply well defined rules for syntax verification.</li><li><input type="checkbox"/> Construct and analyze Push Down, Post and Turing Machine for formal languages.</li><li><input type="checkbox"/> Express the understanding of the decidability and decidability problems</li><li><input type="checkbox"/> Express the understanding of computational complexity</li></ul>
314442	Operating Systems	<ul style="list-style-type: none"><li><input type="checkbox"/> Explain the role of Modern Operating Systems and will be able to apply shell commands to provide solution.</li><li><input type="checkbox"/> Apply the concepts of process and thread scheduling.</li><li><input type="checkbox"/> Illustrate the concept of process synchronization, mutual exclusion and the deadlock.</li><li><input type="checkbox"/> Implement the concepts of various memory management techniques.</li><li><input type="checkbox"/> Make use of concept of I/O management and File system.</li><li><input type="checkbox"/> Understand Importance of System software.</li></ul>
314443	Machine Learning	<ul style="list-style-type: none"><li><input type="checkbox"/> Apply basic concepts of machine learning and different types of machine learning algorithms.</li><li><input type="checkbox"/> Differentiate various regression techniques and evaluate their performance.</li><li><input type="checkbox"/> Compare different types of classification models and their relevant application.</li><li><input type="checkbox"/> Illustrate the tree-based and probabilistic machine learning algorithms.</li><li><input type="checkbox"/> Identify different unsupervised learning algorithms for the related real world problems</li><li><input type="checkbox"/> Apply fundamental concepts of ANN</li></ul>

314444	Human Computer Interaction	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explain importance of HCI study and principles of user-centered design (UCD) approach.</li> <li><input type="checkbox"/> Develop understanding of human factors in HCI design.</li> <li><input type="checkbox"/> Develop understanding of models, paradigms, and context of interactions.</li> <li><input type="checkbox"/> Design effective user-interfaces following a structured and organized UCD process.</li> <li><input type="checkbox"/> Evaluate usability of a user-interface design.</li> <li><input type="checkbox"/> Apply cognitive models for predicting human-computer-interactions.</li> </ul>
314445A	Design and Analysis of Algorithm	<ul style="list-style-type: none"> <li><input type="checkbox"/> Calculate computational complexity using asymptotic notations for various algorithms.</li> <li><input type="checkbox"/> Apply Divide &amp; Conquer as well as Greedy approach to design algorithms.</li> <li><input type="checkbox"/> Understand and analyze optimization problems using dynamic programming.</li> <li><input type="checkbox"/> Illustrate different problems using Backtracking.</li> <li><input type="checkbox"/> Compare different methods of Branch and Bound strategy.</li> <li><input type="checkbox"/> Understand the concept of P, NP, NP-complete, NP-Hard problems.</li> </ul>
314446	Operating Systems Lab	<ul style="list-style-type: none"> <li><input type="checkbox"/> Apply the basics of Linux commands.</li> <li><input type="checkbox"/> Build shell scripts for various applications.</li> <li><input type="checkbox"/> Implement basic building blocks like processes, threads under the Linux.</li> <li><input type="checkbox"/> Develop various system programs for the functioning of OS concepts in user space like CPU Scheduling, concurrency control, Memory Management and Disk Scheduling in Linux.</li> <li><input type="checkbox"/> Develop system programs for Inter process communication in Linux.</li> <li><input type="checkbox"/> Embed a system call in kernel</li> </ul>
314447	Human Computer Interaction- Lab	<ul style="list-style-type: none"> <li><input type="checkbox"/> Differentiate between good design and bad design.</li> <li><input type="checkbox"/> Analyze creative design in the surrounding.</li> <li><input type="checkbox"/> Assess design based on feedback and constraint.</li> <li><input type="checkbox"/> Design paper-based prototypes and use wire frame.</li> <li><input type="checkbox"/> Implement user-interface design using web technology.</li> <li><input type="checkbox"/> Evaluate user-interface design using HCI evaluation techniques.</li> </ul>
314448	Laboratory Practice-I	<ul style="list-style-type: none"> <li><input type="checkbox"/> Understand the mathematical and statistical perspectives of machine learning algorithms through python programming.</li> <li><input type="checkbox"/> Implement different supervised and unsupervised learning algorithms.</li> <li><input type="checkbox"/> Evaluate performance of machine learning algorithms for real-world applications.</li> </ul>

		<input type="checkbox"/> Apply Greedy and Dynamic programming approach for solving various problems. <input type="checkbox"/> Apply Backtracking strategies to solve various problems. <input type="checkbox"/> Apply Branch and Bound for solving various problems.
314449	Seminar	<input type="checkbox"/> Understand, interpret and summarize technical literature. <input type="checkbox"/> Demonstrate the techniques used in the paper. <input type="checkbox"/> Distinguish the various techniques required to accomplish the task. <input type="checkbox"/> Identify intended future work based on the technical review. <input type="checkbox"/> Prepare and present the content through various presentation tools and techniques in effective manner. <input type="checkbox"/> Keep audience engaged through improved interpersonal skills.

### Semester-VI

Course Code	Name of Subject/Course	Course Outcomes (COs)
314451	Computer Networks and Security	<input type="checkbox"/> Know Responsibilities, services offered and protocol used at application layer of network. <input type="checkbox"/> Understand wireless network and different wireless standards. <input type="checkbox"/> Recognize the Adhoc Network's MAC layer, routing protocol and Sensor network architecture. <input type="checkbox"/> Define the principal concepts of network security and Understand network security threats, security services and countermeasures. <input type="checkbox"/> Apply basic cryptographic techniques in application development. <input type="checkbox"/> Gain a good comprehension of the landscape of cyber security, Vulnerabilities & describe typical threats to modern digital systems.
314452	Data Science and Big Data Analytics	<input type="checkbox"/> Understand Big Data primitives. <input type="checkbox"/> Learn and apply different mathematical models for Big Data. <input type="checkbox"/> Demonstrate their Big Data learning skills by developing industry or research applications. <input type="checkbox"/> Analyze each learning model come from a different algorithmic approach and it will perform differently under different datasets. <input type="checkbox"/> Understand needs, challenges and techniques for big data visualization. <input type="checkbox"/> Learn different programming platforms for

		big data analytics.
314453	Web Application Development	<input type="checkbox"/> Develop Static and Dynamic website using technologies like HTML, CSS, Bootstrap. <input type="checkbox"/> Demonstrate the use of web scripting languages. <input type="checkbox"/> Develop web application with Front End Technologies. <input type="checkbox"/> Develop web application with Back End Technologies. <input type="checkbox"/> Develop mobile website using JQuery Mobile. <input type="checkbox"/> Deploy web application on cloud using AWS.
314454A	Elective-II Artificial Intelligence	<input type="checkbox"/> Apply the fundamental concepts of Artificial Intelligence <input type="checkbox"/> Choose appropriate search strategies for any AI problem <input type="checkbox"/> Illustrate knowledge reasoning and knowledge representation methods (for solving real world problems) <input type="checkbox"/> Analyze the suitable techniques of NLP to develop AI applications <input type="checkbox"/> Correlate the appropriate methods of Game Theory to design AI applications <input type="checkbox"/> Understand the concept of deep learning and AI applications
314454C	Elective-II Cloud Computing	<input type="checkbox"/> Articulate the main concepts, key technologies and fundamentals of cloud computing. <input type="checkbox"/> Understand cloud enabling technologies and virtualization <input type="checkbox"/> Analyze various cloud programming models and apply them to solve problems on the cloud. <input type="checkbox"/> Explain data storage and major security issues in the cloud. <input type="checkbox"/> Understand trends in ubiquitous cloud and internet of things <input type="checkbox"/> Explore future trends of cloud computing
314455	Internship	<input type="checkbox"/> Develop professional competence through industry internship. <input type="checkbox"/> Apply academic knowledge in a personal and professional environment <input type="checkbox"/> Build the professional network and expose students to future employees. <input type="checkbox"/> Apply professional and societal ethics in their day to day life. <input type="checkbox"/> Become a responsible professional having social, economic and administrative considerations. <input type="checkbox"/> Make own career goals and personal aspirations.
314456	Computer Networks and Security-Lab	<input type="checkbox"/> Design and configure small size network and associated networking commands.

		<input type="checkbox"/> Understand various client/server environments to use application layer protocols <input type="checkbox"/> Use basic cryptographic techniques in software and system design <input type="checkbox"/> Apply methods for authentication, access control, intrusion detection <input type="checkbox"/> Apply methods for authentication, access control. <input type="checkbox"/> Use network security services and mechanisms for intrusion detection.
314457	DS & BDA-Lab	<input type="checkbox"/> Apply Big data primitives and fundamentals for application development. <input type="checkbox"/> Explore different Big data processing techniques with use cases. <input type="checkbox"/> Apply the Analytical concept of Big data using R/Python <input type="checkbox"/> Visualize the Big Data using Tableau. <input type="checkbox"/> Design algorithms and techniques for Big data analytics. <input type="checkbox"/> Design Big data analytic application for emerging trends.
314458	Laboratory Practice-II WAD	<input type="checkbox"/> Develop Static and Dynamic responsive website using technologies HTML, CSS, Bootstrap and AJAX. <input type="checkbox"/> Create Version Control Environment. <input type="checkbox"/> Develop an application using front end technologies. <input type="checkbox"/> Develop an application using backend technologies. <input type="checkbox"/> Develop mobile website using JQuery Mobile. <input type="checkbox"/> Deploy web application on cloud using AWS.
314458	Laboratory Practice -II AI	<input type="checkbox"/> Evaluate and apply core knowledge of AI on various real world problems. <input type="checkbox"/> Apply reasoning techniques to solve real world problems <input type="checkbox"/> Illustrate and demonstrate AI tools for different dynamic applications. <input type="checkbox"/> Implement game theory algorithm to solve real world problem
314458	Laboratory Practice -II CC	<input type="checkbox"/> Design and develop cloud based applications <input type="checkbox"/> Simulate a cloud scenario using CloudSim <input type="checkbox"/> Design and deploy web applications in cloud environment.