

Department of Computer Technology
Course Objectives and Course Outcomes
Session 2022-23

Sr. No.	Course Code	Subject	Course Objectives	Course Outcomes
Upon successful completion of the course students will be able to:				
Semester III (2018-2019 SoE)				
1	GE2201	Engineering Mathematics-III	Estimate the Calculus of Numerical Function.	Estimate the Calculus of Numerical Function.
			Determine the transforms and inverse transforms of various functions of variables and use it to solve Mathematical equations.	Determine the transforms and inverse transforms of various functions of variables and use it to solve Mathematical equations.
			Discuss the nature of periodic function and express it in terms of series.	Discuss the nature of periodic function and express it in terms of series.
			Use appropriate method/s to solve partial differential equations.	Use appropriate method/s to solve partial differential equations.
2	CT2204 CT-2205	Data Structures Data Structures Lab	Implement given problem using various programming construct. logic needed for solving given problem.	Apply the basic concepts of language constructs for problem solving
			Elaborate various abstract data types through implementation.	Demonstrate the use of loops, arrays, functions, recursion and structures for problem solving
			Use dynamic memory allocation functions.	Implement the sorting algorithms and represent given sparse matrix using array
			Summarize various file handling mechanism	Apply the technique of dynamic memory allocation to solve problems of linked list, and implement various applications of linear data structures
			Implement file operations for data manipulation and storage	
3	CT2202 CT2203	Object-Oriented Programming Object-Oriented Programming Lab	Understand the concept of object-oriented programming and modeling	Understand the concept of object-oriented programming and modelling
			Have an appreciation of the object-oriented programming concepts like reusability of code, inheritance, abstraction, and polymorphism	Apply the knowledge of object-oriented programming to solve the given problem
			Gain an understanding of generic components and how to handle the I/O stream classes	Analyze the problem to provide the object-oriented solution using advanced programming concepts
			Develop an understanding of MVC architecture and how to build the event driven solution of the problem	Design the event driven web based solution for the problem
4	CT2206	Python Programming	To make student aware about various programming frameworks of Python	Select any framework for python programming as per their understanding
			To make student familiar with syntax of various data structures and their operations along with control statements in Python	Write any python program using various data structures and control statements
			To make students comprehend concepts of file handling, classes and objects	Write program where file handling and concepts of classes and objects are needed
			To make student aware about various packages inbuilt in Python along with their usages	Develop advanced applications using functionalities provided under various packages of python
5	CT-2201	Computer Architecture & Organization	To understand Internal working of Computer System, its basic principles & execution of machine instructions	Understand basic functionality of computer system, control unit, Memory, Input- output and storage.
			To describe basic processor design using Hardwired and micro programmed control unit.	Understand issues involved in the instruction and microinstructions execution and different addressing modes.
			To observe organization of main memory, cache memory.	Understand the different types of Hazards and its mitigation, and working of computer peripherals.
			To know Various ways in which I/O operations are performed.	Apply the arithmetic operations on signed/un-signed integer and floating point operands.
				Apply the concept of memory circuits , organization of memory management and cache memory.
6	CT2207	Web Technology Laboratory	Introduction to internet technology	Understand various internet technologies
			Study of basic of web page designing and validations	Design the web pages using HTML and CSS
			Introduction to the concepts of data storage using XML	Implement the XML technology to store the data
			Learn the advance technique for designing the interactive web page	Develop the interactive web pages using JavaScript
Semester IV (2018-2019 SoE)				
1	CT-2255 CT-2256	Mathematical Foundations for Data Analysis Mathematical Foundations for Data Analysis Lab	To introduce the basic statistical formulae and visualization techniques	Apply different visualization, summarizing techniques and linear algebra to given data for its interpretation.
			To comprehend the concepts of probability and probability distribution	Solve given problem using the probability theory , random variables and apply the concept to Bayes Theorem
			To understand the concepts of sampling, sampling distribution and estimation	Perform sampling distribution to estimate the given data and predict the analysis using regression.
			To understand the concept of hypothesis testing	Formulate and test a hypothesis, using critical values to draw conclusions and determining probability of making errors in hypothesis tests.
			Understand small sample test methods and analyze various methods of Non-parametric tests	

IV	2	CT-2257 CT-2258	Database Management Systems and Lab	To learn different database system concepts	Understand database management system, through modelling and designing concepts
				To learn the designing of Entity Relationship Diagram.	Apply the knowledge of relational algebra and query language to perform the operations on database
				To know relational data model, relational algebra & SQL Queries	Apply the knowledge of database concepts to perform the transaction and concurrency control
				To understand the normalization concepts	Design database using the entity relation diagrams and relational database aspects.
				To learn transaction management, various concurrency control protocols and crash recovery methods.	
	3	CT-2253 CT-2254	Advanced Data Structures and Lab	To Get overview of fundamental data structures and their usage	Acquire the basic concepts of data structures and select appropriate data structures for solving real life problems
				To Explore different operations performed on various data structures	Demonstrate various operations on linked list, skip list and apply appropriate hashing technique on given data.
				To Understand practical implementation of different types of data structures and hashing techniques	Implement different types of trees and graph data structures and use them to solve problems dealing with non-linear data.
				To Comprehend working of advanced data structures like skip list, disjoint set, multidimensional trees and hash table	
				To Compare different data structures	
	4	GE2206	Discrete Mathematics & Probability Theory	Understand mathematical logic and set theory and their methods of solution and graph theory, group theory with simple applications and to introduce the essential concepts of probability and statistics	Explain the basic concept of classical sets, fuzzy sets, Relations, functions and logical methods.
					Identify the nature of different algebraic structures such as Group, Ring, field
					Analyze the graphs and spanning of trees
					Determine the probability, Expectations of functions of two random variables
	5	CT2251 CT2252	Operating Systems and Operating Systems Lab	To identify different types of OS & services provided by OS.	Describe the different services provided by operating systems at different level.
To infer process management and inter-process communication.				Apply knowledge of different operating systems algorithms to solve a given problem	
To interpret the deadlock concepts & deadlock avoidance algorithms.				Analyze various approaches used to improve system performance	
To understand the need of memory management.				Differentiate various disk scheduling algorithms based on their performances.	
To classify different file system organization.					

Semester V (SoE 2018-19_REV SOE)

	1	GE-2312	Fundamental of Economics	It introduced the concept of economics and provides knowledge about consumer's rational behaviour.	Recognizes consumer's behavior and pricing
				This introduced various factors of production and its role in production process, gives idea about short run and long run production constraint, types of cost and depreciation.	Extrapolates an operations in market with productions constrain.
				It provide knowledge to the students about various market structure, demand and revenue curves in it, How price and output determine in various forms of market and how price discriminate for consumer to consumer.	Describes the national income accounting and public finance.
				It gives knowledge about various national products, its counting with respect to various factors and factors causes to economic growth and development.	Interprets international trade and institutions.
				Provide knowledge of functioning of money, financial institution and various sources of public finance/revenue and its types.	
				To provide knowledge about international economics, foreign trade and its agreement, export, foreign exchange and the various international financial institution.	
	2	CT2301 CT2302	Computer Networks and Lab	The architecture and principles of today's computer networks	Understand design issues of layers and network reference model
				The protocols and their functionalities	Solve the given problems related to networking domain.
				The requirements for the future Internet and its impact on the computer network architecture.	Analyze different networking protocol at various layers
					Evaluate the performance of network using different tools
	3	CT2303	Theoretical Foundation of Computer Science	To introduce students to the mathematical foundations of computation including automata theory, regular languages	Construct automata, regular expression for any pattern.
				To understand of different types of grammars and the properties of Context Free Grammar	Construct context free grammar for various languages.
				To study the concepts of Push Down Automata and Turing machine	Construct push down automata and Turing Machine for a language.
				To understand decidable and undecidable problems	Evaluate and justify whether a problem is decidable or not.
	4	CT2327	OE I: Image Processing	Overview the Fundamental concepts of Digital Image Processing	Describe basic relationships between pixels
				Explore image enhancement techniques in spatial domain and frequency domain	Compare various image enhancement techniques in spatial domain and frequency domain
				Understand the fundamental concept of image compression	Illustrate different image compression techniques to understand the advantage of image compression

V

			Study of various similarity based, and dissimilarity-based image segmentation approaches	Demonstrate the applications of similarity based and dissimilarity-based approaches for image segmentation
			Understand the basic concepts of image representation and description	Interpret various representation techniques
5	CT2331	OE II: Soft Computing	Understand the applications of soft computing in various domains.	Review applications of soft computing to solve problems in varieties of application domains
			Have an appreciation of Fuzzy logic and its applications	Demonstrate Fuzzy logic and its applications
			Gain an understanding of Rough Set theory and its usage as soft computing	Explain Rough Set theory and its usage as soft computing
			Develop an understanding of single-objective optimization problems using GAs.	Relate single-objective optimization problems using GAs.
			Introduce artificial neural networks and its applications.	Describe Artificial neural networks and its applications
6	CT2334	OE II: Multimedia and Animation	Gain fundamental knowledge of multimedia	Understand multimedia basics - hardware and software
			Understand the technologies in multimedia & animation	Apply skills of designing, illustration, image manipulation, graphic designing, video editing, visual effects, and game designing to create multimedia projects.
			Learn the basics of animation	Apply the principals and concepts of animation to create animation using animation software.
7	OE-1:- CT2328	Operating System Concepts	To understand the concepts of Linux and its potential	Use LINUX operating system
			To get a knowledge of shells	Write Shell scripts
8	CT2313 CT2314	PE I: Mobile Operating Systems/ Mobile Operating Systems Lab	Understand different Mobile Operating Systems and to learn the Android platform architecture.	Understand the different flavors of mobile operating system and their specific features.
			To have basic requirement & different controls for design & development of mobile app.	Design an application using different controls.
			Gain an understanding of data management & inter application communication.	Design an application which can manage data and can communicate with native application.
			To learn application configuration & publishing.	Design and publish an application which can handle multiple devices with different configurations
9	CT 2317 CT 2318	Introduction to Geographical Information System / Lab	To get an overview of fundamental concepts of GIS, applications and study	Understand various fundamental concepts of GIS and new trends in GIS
			To explore the Coordinate Systems, Map Projections metadata, spatial data, spatial analysis and new trends in GIS	Understand the concepts of coordinate systems, map projections and spatial data formats for creation of geodatabase
			To comprehend the Making and sharing of maps	Understand the procedure of map creation and analysis of spatial data using GIS.
				Apply knowledge of GIS and conduct experiments using GIS tools to create maps and make an effective report to communicate.
				Analyze and investigate various GIS problems and develop a solution using the GIS tool and submit a report in a team.
10	CT2332	OE II: Software Testing	Understand Software testing fundamentals/principles.	Formulate problem by following Software testing life cycle.
			Learn systematic approach to software testing using strategies.	Design Manual Test cases for Software Project.
			Explore Methods and tools of testing software.	Demonstrate utilization of testing automation through testing tool.
11	CT2315/ CT2316	PE I: Advanced Web Technologies/ Advanced Web Technologies Lab	To learn basic aspects of Web services, Server side scripting, Advanced CSS	Describe various concepts related to web site
			To introduce with AJAX	Apply the concepts used for web page designing
			To learn Basics of Advanced Client side programming	Create web pages and web sites
			To learn JavaScript	Develop Web pages using JavaScript
12	CT2319 /CT2320	PE I: Computer Graphics	To learn basic aspects of computer graphics	Draw lines and polygons and fill polygons using basic graphics functions
			To learn aspects of visual communication and understand presentation issues in computer graphics	Select proper imaging technology to be used for image creation
			To learn interactive handling of images and text	Handle interactive software with images & text
			To understand computer animation and design animation program	Develop animated programs for various applications
13	CT2335	OE II: Current Trends and Technologies	Gain fundamental knowledge of electronic communication	Use the basics of internet for deployment of various servers and recourses
			Understand the technologies in Internet, e-Technologies & e-Learning	Design and implement technologies for e-Commerce and e-Learning
			Learn the basics of Green Computing and its implementation in industries	Choose appropriate implementation of Green Computing
			Develop the understanding of concepts in Social Media	Make use of Social Networking properly and securely
14	CT2323/CT2324	PE I: Privacy and Security in Online Social Networks (PSOSN)	To learn the use of different APIs and tools for collecting online social networking data	Collect online social networking data using different tools and API's
			To understand privacy and policies for online social media	Review privacy and policies in social media
			To understand eCrimes and Attacks in online social media	Categorize eCrimes and Attacks in OSM
			To learn profile linking on online social media	Link profiles of user on OSM
15	CT 2310	Ind Visit and Report		Provide students an insight regarding internal working of companies in a team
				Understanding of project and product management
				Understand the importance of communication, and employment practices
			To understand basic concepts of probability calculus in algorithmic context	Apply basic concepts of probability calculus in algorithmic context
		Randomized Algorithms/	To analyze the expected running time of simple randomized algorithms	Derive good upper bounds for the expected running time of simple randomized algorithms

16	CT2312	Algorithms/ Randomized Algorithms Lab	To understand simple randomized algorithms that run fast or that return the correct output with high probability	Design simple randomized algorithms that run fast or that return the correct output with high probability
			To study the probabilistic method to show the existence of certain combinatorial objects	Apply the probabilistic method to show the existence of certain combinatorial objects
Semester VI (SoE 2018)				
1	CT2351/ CT2352	Design & Analysis of Algorithms/ Design & Analysis of Algorithms Lab	To Understand different asymptotic notations	Compare different types of asymptotic notations and find the time complexity in terms of asymptotic notations
			To Have an appreciation of different mathematical principles of algorithm analysis	Solve recurrences using various techniques.
2	CT2355 / CT2356	Software Engineering / Lab	To Gain an understanding and apply various algorithm design strategies like divide and conquer strategy, greedy strategy, dynamic programming strategy and backtracking strategy	Implement and analyze different algorithms like divide and conquer strategy, greedy strategy, dynamic programming algorithms and backtracking strategy
			To understand various complexity classes like P, NP, NP-complete and NP-Hard	Compare different types of complexity classes and categories algorithms into specific complexity class
			To Study software engineering best practices and different strategies applicable for software development, software requirement and its design activity.	Study software engineering best practices and different strategies applicable for software development, software requirement and its design activity.
			To Explore the various testing types and its strategies	Explore the various testing types and its strategies.
3	CT2353/CT 2353	Language Processors / Lab	To Understand configuration management, version control and change control process of Software development	Understand configuration management, version control and change control process of Software development
			To Understand project management, planning, scheduling, risk management, project and process metrics	Understand project management, planning, scheduling, risk management, project and process metrics.
			To Get an overview of open source Software Engineering tool viz. Subversion and understand some concepts such as Re-engineering and Reverse engineering	Get an overview of open source Software Engineering tool viz. Subversion and understand some concepts such as Re-engineering and Reverse engineering
4	PE- V CT2367	Introduction to NLP	To study the structure of Compiler and FLEX tool for generating lexical analyzer	Design lexical analyzer using FLEX tool
			To explore top down, Bottom up parsing approaches and YACC tool for generating syntax analyzer	Implement syntax analyzer using YACC tool
			To understand Syntax Directed Translation Scheme	Create a syntax-directed definition and an annotated parse tree
			To introduce Symbol Table Management and Error Detection and Recovery with respect to all phases of compilation	Demonstrate the use of a symbol table throughout compilation
5	CT1352	Current Trends & Technology	To understand Code optimization and Code generation techniques	Apply various code optimizing transformations and code generation techniques
			The basic aspects of Natural languages used in processing	Understand the basic concepts of natural language processing with
			The basic concepts and algorithmic description of the main The mathematical and linguistic foundations	Understand the concepts of pragmatics and discourse integration.
6	CT2372	OE:-III Essentials of IT	The underlying approaches for the various areas in NLP.	Apply and implement morphology fundamentals and parsing structures.
			To Gain fundamental knowledge of electronic communication	Use the basics of internet for deployment of various servers and recourses
			To Understand the technologies in Internet, e-Technologies	Design and implement technologies for e-Commerce and e-Learning
7	CT2375	OE:-III: Introduction to Salesforce	To Learn the basics of Green Computing and its implementation	Choose appropriate implementation of Green Computing
			To Develop the understanding of concepts in Social Media	Make use of Social Networking properly and securely
			To understand basics of algorithm design, object oriented concepts and Java programming fundamentals	Develop algorithm and write pseudo code for a given problem statement
			To understand the database system concepts, relational database design basics and learn SQL for various data operations	Construct Entity-Relationship Model and design RDBMS for a given problem statement
8	CT-2367 /CT-2367	PE II: Introduction to Natural Language Processing / Introduction to Natural Language Processing Lab	To understand basics of web page design and Javascript programming fundamentals	Design static and dynamic web pages using HTML and Javascript and write simple programs in Javascript
			To understand software engineering basics and various SDLC phases	Apply software engineering concepts in any software project implementation
			To realize the concepts and principles of Salesforce CRM	Employ the knowledge of customer-centered organization and implement the integral processes within an organization that are automated and how does the automation create predictability and efficiencies
9	CT2363/ CT2364	PE II: Internet of Things/ Internet of Things Lab	To appreciate the role and changing face of Salesforce CRM as an IT enabled function	Represent a customize a CRM application for organization to suit their business needs
			To have knowledge of a CRM implementation in aura framework by understanding the business case and importance of implementing such a system in an organization	Determine CRM strategies by understanding customers' preferences for the long-term sustainability of the Organizations
			To understand basic aspects of Natural languages used in processing of text	Describe linguistic phenomena with formal grammars
			To get acquainted with the basic concepts and algorithmic description of the main levels of language levels: morphology, syntax, semantics, and pragmatics	Illustrate and test algorithms for NLP problems
9	CT2363/ CT2364	PE II: Internet of Things/ Internet of Things Lab	To Learn the mathematical and linguistic foundations	Examine NLP applications
			To appreciate underlying approaches for the various areas in NLP	Devise real world NLP applications using NLP techniques
			To Get acquainted with various IOT environments	Develop various IOT environments
9	CT2363/ CT2364	PE II: Internet of Things/ Internet of Things Lab	To Study IOT architecture and its enabling technologies	Demonstrate IOT architecture and its enabling technologies
			To Acquire hands on laboratory experience, utilizing IOT kit	Analyze IOT environments using various communication technologies

		Images Lab		Apply various IOT enabling technologies for creation of IOT environments
			To Overview the Fundamental concepts of Digital Image Processing	Describe basic relationships between pixels
10	CT2373	OE III: Image Processing	To Explore image enhancement techniques in spatial domain and frequency domain	Compare various image enhancement techniques in spatial domain and frequency domain
			To Understand the fundamental concept of image compression	Illustrate different image compression techniques to understand the advantage of image compression
			To Study of various similarity based, and dissimilarity-based image segmentation approaches	Demonstrate the applications of similarity based and dissimilarity-based approaches for image segmentation
			To Understand the basic concepts of image representation and description	Interpret various representation techniques
11	CT2381	OE IV: Soft Computing	To Understand the applications of soft computing in various domains	Review different applications of soft computing to solve problems from different domains
			To Have an appreciation of Fuzzy logic and its applications	Demonstrate Fuzzy logic and its applications
			To Gain an understanding of Rough Set theory and its usage	Explain Rough Set theory and its usage as soft computing
			To Develop an understanding of single-objective optimization	Relate single-objective optimization problems using Genetic Algorithms
			To Introduce artificial neural networks and its applications	Describe Artificial neural networks and its applications
12	CT2382	OE IV: Software Testing	To Understand Software testing fundamentals/principles	Formulate problem by following Software testing life cycle
			To Learn systematic approach of software testing	Design Manual Test cases for Software testing approaches
			To Explore methods and tools of testing software	Demonstrate utilization of testing automation through testing tool
13	GE: 2311	FUNDAMENTAL OF MANAGEMENT	The objective of this course is to endow the student with a broad perspective on themes and issues of Human Resource Management, Human Resource Development, Training and Development activities, Job Analysis, Performance Appraisal, disciplinary and grievance	Explain the Legal provision and Functions of Management. Analyze the role of Human Resource and Financial Management in the organization. Analyze the project life cycles. Identify tools and techniques for the marketing of goods and services
14	CT2361/CT2362	PE II: Digital Image Processing/Digital Image Processing Lab	To Explore image enhancement techniques in spatial domain and frequency domain	Compare various image enhancement techniques in spatial domain and frequency domain
			To Understand the fundamental concept of image compression	Illustrate different image compression techniques to understand the advantage of image compression
			To Study various similarity based, and dissimilarity-based image segmentation approaches	Demonstrate the applications of similarity based and dissimilarity-based approaches for image segmentation
			To Understand the basic concepts of image representation and description	Interpret various representation techniques
15	CT2369/CT2370	PE I: Customer Relationship Management(CRM)/Customer Relationship Management(CRM) Lab	To Understand the concepts and principles of Salesforce CRM	Apply the knowledge of customer-centered organization and implement the integral processes within an organization that are automated and how does the automation create predictability and efficiencies.
			To Appreciate the role and changing face of Salesforce CRM as an IT enabled function	Analyze business intelligence, cross selling/up selling, customer loyalty, continuous improvement and quality programs that have been the direct and ongoing result of implementing CRM applications.
			To Implement a CRM using apex aura framework by understanding the business case and importance of implementing such a system in an organization	Design and customize a CRM application for organization to suit their business needs
Semester VII (SoE 2018-19)				
1	CT2401 CT2402	Artificial Intelligence Artificial Intelligence Lab	To understand fundamental concepts in Artificial Intelligence, its applications, techniques, related fields and different types of AI agents.	Develop an understanding to identify performance measures for given intelligent agent
			To describe different searching algorithms in AI (uninformed, informed, heuristic, constraint satisfaction)	Apply searching techniques for problem solving and planning
			To explain different knowledge representation approaches and their fundamentals	Apply different knowledge representation techniques on given facts
			To comprehend various non-monotonic reasoning techniques and its applications.	Solve AI problems using the techniques of uncertainty
			To explain different learning methods along with fundamentals of expert systems.	
2	CT 2403	Network Security	Understand the security threats aimed at computer network and describe various security mechanisms and services to counter them.	Identify threats to network security, associated attacks and countermeasures against attack.
			Study cryptographic mathematics to solve network security problems.	Use appropriate mathematical techniques in cryptography.
			Study of various cryptographic algorithms.	Apply various algorithms/ mechanisms to formulate appropriate solution.
			Understand different security protocols at various layers of network model.	Use of different security protocols at various networking layers.
3	PE-III CT2411	Neural Network & Fuzzy Logic	Understand the fundamentals of biological neural network and artificial neural network	Identify threats to network security, associated attacks and countermeasures against attack.
			Understand the architecture of feed forward and feedback word neural networks	Use appropriate mathematical techniques in cryptography.
			Understand the operations and properties of classical crisp set and fuzzy set theory with arithmetic operations	Apply various algorithms/ mechanisms to formulate appropriate solution.
			Understand defuzzification methods used in fuzzy controller system	Use of different security protocols at various networking layers.
4	PE-III CT2412	Adhoc Wireless Network	Understand the design issues and application areas of Adhoc Wireless Network	Compare the differences between cellular and ad hoc networks and summarize the protocols used at different layers of Adhoc network.
			Understand design issues and operation of protocols at different layers of Adhoc network	Identify the various types of attack in ad hoc network.
			Introduce Quality of Service and energy management	Classify QoS approaches and Identify the need of energy management
5	PE-III CT2413	PE III: Information Retrieval System	To provide an overview of Information Retrieval.	Understand different Information retrieval models.
			To introduce students about insights of the several topics	Know about evaluation methods of the information retrieval model.

VII	6	PE-III CT2414	PE III: Human Computer Interaction	To provide comprehensive details about various	Know the challenges associated with each topic
				To study and understand interface design tools, and	Apply the knowledge of human components for interaction with
	7	PE IV: CT2415	Business Intelligence	To study and understand the screen designing and its	Understand basics of Computer components functions regarding
				To study and understand software tools related to HCI	Demonstrate Understanding of Interaction between the human and
	8	PE-IV CT2421 CT2422	PE IV: Pattern Recognition PE IV: Lab: Pattern Recognition	To understand the interaction devices.	Produce Implementation supports for HCI by using various tools.
				The different concepts of business intelligence.	Understand the basic concepts of Business Intelligence, digital data types, multidimensional modelling
	9	PE-IV CT2423 CT2424	PE IV: Cyber Forensic PE IV: Cyber Forensic Lab	The process to design the Multidimensional data model.	Apply the ETL process to absorb the data in MDDM.
				The business processes assessment concepts and its	Analyze the data to identify digital data types and multidimensional
	10	PE-IV CT2425 CT2426	PE IV: Machine Learning PE IV: Machine Learning Lab	The BI applications in different technology domains.	Design the MDDM and reports using the business concepts.
				The study of Pattern Recognition to equip the students with the brief knowledge of Statistical.	Apply Pattern Recognition techniques for recognition.
	11	PE-IV CT2427 CT2428	PE IV: Design Patterns PE IV: Design Patterns Lab	Decision Theory, Image processing, clustering, different	Know and Apply knowledge of Statistical Decision Theory
					Perform Image processing concepts on images.
	12	PE IV: CT2429 CT2429	PE IV: Mobile Communication PE IV: Mobile Communication Lab	To Comprehend different modern techniques with respect to Computer System and various accepts of Information security	Understand the fundamentals of Computer & Digital Forensics
				To Comprehend different forensic tools used in cyber	Describe the usage of tools to collect data useful for investigation
	13	PE-IV CT2431 CT2432	PE IV: Software Project Management PE IV: Software Project Management Lab	To Understand different legal techniques and aspects for	Use forensic tools to collect evidence and generate report of
				To Understand the process of compilation of report	
	14	PE-IV CT2433 CT2434	PE IV: Numerical Computing PE IV: Numerical Computing Lab	The concepts of machine learning and the relative strengths and weaknesses of different machine learning methods.	Understand the fundamental principles of machine learning and design methods
				The concept of different type of machines learning and	Apply various machine learning algorithms on a given problem and
	15	PE-IV CT2429 CT2429	PE IV: Mobile Communication PE IV: Mobile Communication Lab	The different methods of evaluation of machine learning	Evaluate the performance of various machine learning algorithms on
				Different ensembling methods and new techniques.	Implement various machine learning algorithms on a given dataset
16	PE-IV CT2427 CT2428	PE IV: Design Patterns PE IV: Design Patterns Lab	The aim of the course is to appreciate the idea behind Design Patterns in handling common problems faced during building an application	Create software designs that are scalable and easily maintainable	
			This course covers all pattern types from creational to	Use creational design patterns in software design for class instantiation	
17	PE IV: CT2429 CT2429	PE IV: Mobile Communication PE IV: Mobile Communication Lab	Use structural design patterns for better class and object composition		
			Use behavioral patterns for better organization and communication	Use refactoring to compose the methods for proper code packaging, to	
18	PE-IV CT2431 CT2432	PE IV: Software Project Management PE IV: Software Project Management Lab	Use refactoring to compose the methods for proper code packaging, to	Select appropriate standards for the given situation	
			To study wireless networks its standards and protocol	Illustrate the generations of telecommunication systems in wireless	
19	PE-IV CT2433 CT2434	PE IV: Numerical Computing PE IV: Numerical Computing Lab	2. Understand different generations of wireless network	Develop an application using different tools	
20	PE-IV CT2431 CT2432	PE IV: Software Project Management PE IV: Software Project Management Lab	To learn basic concepts project contract and to get an overview of various activities under project planning.	Understand basic concepts about project, project management and project planning.	
			To understand techniques for cost benefit analysis And	Assess given requirements and perform cost benefit analysis.	
21	PE-IV CT2433 CT2434	PE IV: Numerical Computing PE IV: Numerical Computing Lab	To understand project scheduling and various network	Create a project schedule using some network planning model for given	
			To understand Risk Management, Risk Planning and	Identify and create a risk management plan for given requirements.	
22	PE-IV CT2431 CT2432	PE IV: Software Project Management PE IV: Software Project Management Lab	To understand various activities like visualizing progress.	Perform earned value analysis for given requirements and current	
			To understand the role of continuing training and learning.	Form teams for any given exercise, work as a team and understand	
23	PE-IV CT2433 CT2434	PE IV: Numerical Computing PE IV: Numerical Computing Lab	To understand basics of error induced in numerical computation	Apply appropriate formula to find different types of error in numerical computation and mitigate it.	
			To develop numerical algorithms and skills to implement	Choose and apply appropriate numerical techniques for problem solving	
24	PE-IV CT2433 CT2434	PE IV: Numerical Computing PE IV: Numerical Computing Lab	Learn technologies to solve integration nuUnderstand	Apply appropriate techniques for numerical integration	
			Understand the basic concepts of distributed systems and	Demonstrate basics of conditioning of problems and stability of	
25	PE-V CT2435	PE V: Cloud Computing	Understand the basic concepts of distributed systems and	Understand the basic concepts of distributed systems and cloud	
			Understand the concepts, characteristics, delivery models	Understand the concepts, characteristics, delivery models and benefits	
26	PE-V CT2435	PE V: Cloud Computing	To enable students exploring some important cloud	Enable students exploring some important cloud computing driven	
			To expose the students to frontier areas of Cloud	Expose the students to frontier areas of Cloud Computing and	
27	PE-V CT2436	PE V: Parallel Programming	To provide basics of concepts of parallel computing	Identify areas where parallel computing is applicable	
			To understand principles of parallel algorithm design	Implement parallel version of different algorithms using thread	
28	PE-V CT2436	PE V: Parallel Programming	To understand performance measuring metrics for parallel	Find the speedup factor by analyzing parallel programs	
			To understand basics of thread programming	Develop real life applications using parallel programming	
29	PE-V CT2436	PE V: Parallel Programming	To familiarize with different directives of parallel		
			To understand concepts of Dynamic Programming		
30	PE-V CT2437	PE V: Data Mining	Understand the fundamentals of data mining techniques	Understand the concepts related to data preparation, data modeling, and	
			Comprehend the various data mining algorithms and	Apply the techniques for data pre-processing and modeling for	
31	PE-V CT2437	PE V: Data Mining	To understand the different methods of evaluation	Apply the supervised and unsupervised data mining techniques for	
			To understand new advanced techniques to extract the	Analyze the data to apply appropriate data modeling and mining	
32	PE-V CT2438	PE V: Embedded Systems	To understand the types of processors & architectures	Understand the concept of Embedded System and different	
			To empower students to perform a rigorous analysis of a	Distinguish real-time embedded systems from other systems	
33	PE-V CT2438	PE V: Embedded Systems	To understand the concepts of Real Time Operating	Understand the design process of Embedded System. Inter-process	
			To make students capable of deciding the type of	Understand the architectural support of ARM processor, function of	
34	PE-V CT2438	PE V: Embedded Systems	5. Provide skills in embedded C programming		
			To understand the meaning, purpose and tools of	Describe at an intuitive level, the process of operations research.	
35	PE-V CT2439	PE V: Operations Research	To understand and formulate Linear Programming	Solve Linear Programming problems from the description of the real	
			To understand the concepts of duality in Linear	Solve Linear Programming problem using duality and find alternative	
36	PE-V CT2439	PE V: Operations Research	To understand different Allocation models (Assignment	Solve Assignment and Transportation problem so as to optimize the	
			To understand different kind of restrictions on	Solve sequencing and scheduling problem.	
37	PE-V CT2440	PE V: Bioinformatics	To understand and solve the problem of constrained		
			To understand various kinds of biological data	Interpret various kinds of biological data for understanding etiology of	
38	PE-V CT2440	PE V: Bioinformatics	To provide concepts of mathematics and statistics for	Develop algorithms for handling biological data	
			To understand working computational algorithms and biological tools	Use various biological tools for handling biological data	

VIII	1	CT2451	Major Project Phase II	To apply knowledge of mathematics, science and engineering in a global, economic, environmental and societal context and engage in life-long learning.model	Acquire the domain knowledge and analyze the implemented model
				To design a model, a system or components considering environmental, economic, social, political, ethical and sustainability and analyze and interpret the data.	Design and develop the solution using appropriate tools and techniques for betterment of society and industry
				To work on multidisciplinary teams, tackle engineering problems, understand professional and ethical responsibility and communicate effectively.	Communicate the work done through paper presentation or participation in competition as a team.
				To apply knowledge of contemporary issues and use the techniques, skills, and modern engineering tools necessary for engineering practices.	
				To analyze and design RCC & steel structures, draw and prepare cost estimates of civil engineering structures.	
	2	CT2452	Extra curricular Activity Evaluation	To expose to culture and tradition.	An ability to work initially as well as part of team to achieve set goals.
				To provide opportunity for student to perform and present their hidden talent, still and art.	Develop his hobbies and interests
				To nurture hobbies.	Communicate and work in team
				To organize co-curricular activities to make competitive spirit, cooperation, leadership, diligence, punctuality, team spirits.	Develop the sense of responsibility
				To develop creative talent, self-confidence, sense of achievement.	
To be able to design process on environmental, social, political, ethical, health and safety.					
To develop broad education to understand the impact of engineering solution in a global economic, environmental, society.					

Total Subjects 64