

Department of Computer Technology
Course Outcomes
Session 2020-21

Sr. No.	Sem	Course Code	Subject	Course Outcomes
1	3	CT-2204 CT-2205	Data Structures Data Structures Lab	Implement given problem using various programming construct. logic needed for solving given problem.
				Elaborate various abstract data types through implementation.
				Use dynamic memory allocation functions.
				Summarize various file handling mechanism
2	3	CT2202 CT2203	Object Oriented Programming Object Oriented Programming Lab	Apply the knowledge of basic concepts of object-oriented programming and modeling of the problem in terms of classes
				Apply the concepts of object-oriented concepts like encapsulation, inheritance, polymorphism, and abstraction to the specific problem
				Apply the knowledge of I/O stream and generic components in the object oriented programming
				Formulate the standardized event driven solution for the real life scenarios
3	3	GE1201	Engineering Mathematics-III	Estimate the Calculus of Numerical Function.
				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.
				Use appropriate method/s to solve partial differential equations.
4	3	CT-2201	Computer Architecture & Organization	Relate the function of the various units of computers that process data and store the information
				Write control signal for executing machine instructions for different processors.
				Design the organization of memory, memory hierarchy, other peripheral devices, and estimate the cost of computation.
				Compare among different types of I/O operation
5	3	CT2206	Python Programming	Select any framework for python programming as per their understanding
				Write any python program using various data structures and control statements
				Write program where file handling and concepts of classes and objects are needed
				Develop advanced applications using functionalities provided under various packages of python
6	3	CT2207	Web Technology Laboratory	Illustrate various internet technologies.
				Design the web pages using some basic techniques.
				Implement the XML technology to store the data.
				Develop the interactive web pages using the advanced technique.
1	4	CT-2255 CT-2256	Mathematical Foundations for Data Analysis and Lab	Implement statistical formulae and visualization techniques
				Solve the real-life problem using the probability theory
				Analyze the problem to predict the solution using the estimation theory for given samples
				Write conclusion using hypothesis testing

2	4	CT-2257 CT-2258	Database Management Systems and Lab	Compare different levels of abstraction & data independence
				Design Entity Relationship Diagram for any scenario
				Solve queries based on relational algebra & SQL
				Identify functional dependencies & normalize the database
3	4	CT2251 CT2252	Operating Systems and Lab	Analyze transaction management, various concurrency control protocols and crash recovery methods
				Explain different OS & its services.
				Illustrate CPU scheduling algorithm and different ways to synchronize the process
				Use different methods to handle deadlock.
4	4	CT-2253CT-2254	Advanced Data Structures and Lab	Articulate various memory management techniques.
				Differentiate various disk scheduling algorithms based on their performances.
				Implement the concept of linked list, skip lists, disjoint sets, trees, graph data structures for real world problem
				Design suitable hash function for the given data set
5	4	GE2206	Discrete Mathematics & Probability Theory	Perform different operations on multidimensional trees
				Select appropriate data structure for implementation of real world applications
				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
1	5	GE-2312	Fundamental of Economics	Analyze the graphs and spanning of trees
				Determine the probability, Expectations of functions of two random variables
				Recognizes consumer's behavior and pricing
				Extrapolates an operations in market with productions constrain.
2	5	CT2301/CT2302	Computer Networks and Lab	Describes the national income accounting and public finance.
				Interprets international trade and institutions.
				Identify appropriate design issues and explain network reference model.
				Select appropriate protocol at various layers for the given application.
3	5	CT 2317/CT 2318	Introduction to Geographical Information System / Lab	Solve problems in the networking domain.
				Analyze the performance of network using different tools
				Demonstrate the fundamental concepts of GIS
				Develop the apprehension of various concepts in GIS
4	5	CT2331	OE II: Soft Computing	Design and share maps
				Review applications of soft computing to solve problems in varieties of application domains
				Demonstrate Fuzzy logic and its applications
				Explain Rough Set theory and its usage as soft computing
5	5	CT2303	Theoretical Foundation of Computer Science	Relate single-objective optimization problems using GAs.
				Describe Artificial neural networks and its applications
				Construct automata, regular expression for any pattern
				Write context free grammar for various languages
				Design push down automata and Turing Machine for a language
				Derive whether a problem is decidable or not

6	5	CT2327	OE I: Image Processing	Describe basic relationships between pixels
				Compare various image enhancement techniques in spatial domain and frequency domain
				Illustrate different image compression techniques to understand the advantage of image compression
				Demonstrate the applications of similarity based and dissimilarity-based approaches for image segmentation
7	5	CT2334	OE II:Multimedia and Animation	Interpret various representation techniques
				Understand multimedia basics - hardware and software
				Develop skills in design, illustration, image manipulation, graphic designing, video editing, visual effects and game designing
8	5	CT1343	Operating System Concepts	Develop the skills in Animation software.
				Use LINUX operating system
9	5	CT2332	OE II: Software Testing	Write Shell scripts
				Formulate problem by following Software testing life cycle.
10	5	CT2313/CT2314	PE I:Mobile Operating Systems/ Mobile Operating Systems Lab	Design Manual Test cases for Software Project.
				Demonstrate utilization of testing automation through testing tool.
				Compare different characteristics of mobile operating system and their specific features.
				Create an application using different controls
11	5	CT2315/ CT2316	PE I: Advanced Web Technologies/ Advanced Web Technologies Lab	Prepare a project which can manage data and can communicate with native application
				Publish the designed application which can handle multiple devices with different configurations.
				Design Web pages using HTML5, CSS3
				Perform various operations using AJAX
1	6	CT2319 /CT2320	PE I :Computer Graphics	Use features of Client side programming
				Develop Web pages using JavaScript
				Draw lines and polygons and fill polygons using basic graphics functions
				Select proper imaging technology to be used for image creation
2	6	CT2335	OE II:CurrentTrendsand Technologies	Handle interactive software with images & text
				Develop animated programs for various applications
				Use the basics of internet for deployment of various servers and recourses
				Design and implement technologies for e-Commerce and e-Learning
3	6	CT2323/CT2324	PE I : Privacy and Security in Online Social Networks (PSOSN)	Choose appropriate implementation of Green Computing
				Make use of Social Networking properly and securely
				Collect online social networking data using different tools and API's
				Review privacy and policies in social media
4	6	CT2311 /CT2312	Randomized Algorithms/Randomized Algorithms Lab	Categorize eCrimes and Attacks in OSM
				Link profiles of user on OSM
				Apply basic concepts of probability calculus in algorithmic context
				Derive good upper bounds for the expected running time of simple randomized algorithms
				Design simple randomized algorithms that run fast or that return the correct output with high probability
				Apply the probabilistic method to show the existence of certain combinatorial objects

5	6	CT2351/ CT2352	Design & Analysis of Algorithms/ Design & Analysis of Algorithms Lab	Analyze algorithms to find the time complexity in terms of asymptotic notations
				Solve recurrences using various techniques.
				Implement and analyze different algorithms like divide and conquer strategy, greedy strategy, dynamic programming algorithms and backtracking strategy
6	6	CT2355 / CT2356	Software Engineering / Lab	Compare different types of complexity classes and categories algorithms into specific complexity class
				Choose appropriate software engineering process model, requirement engineering principles and software designing fundamentals for a given project
				Select appropriate testing strategy and apply testing principles for testing a given application
				Apply basics of software configuration management, version control and change control in software development
				Evaluate cost estimation, effort and severity of software risk for given application
7	6	CT2353/CT 2353	Language Processors / Lab	Perform basic operations on Sub-version for software version control
				Design lexical analyzer using FLEX tool
				Implement syntax analyzer using YACC tool
				Create a syntax-directed definition and an annotated parse tree
				Demonstrate the use of a symbol table throughout compilation
8	6	CT2365/CT2366	Business Intelligence and its Applications / Lab	Apply various code optimizing transformations and code generation techniques
				Explain the basic concepts of Business Intelligence and multidimensional modelling and able to compare digital data types.
				Build and operate the multidimensional data model for the specific scenario to extract the information.
				Analyze the business information to construct the reports from it
9	6	CT2372	OE-Essentials of IT	Decide the mode / channel to implement the business intelligence solution for the specific problem.
				Develop algorithm and write pseudo code for a given problem statement
				Construct Entity-Relationship Model and design RDBMS for a given problem statement
				Design static and dynamic web pages using HTML and Javascript and write simple programs in Javascript
10	6	CT1352	OE-Current Trends & Technology	Apply software engineering concepts in any software project implementation
				Use the basics of internet for deployment of various servers and recourses
				Design and implement technologies for e-Commerce and e-Learning
				Choose appropriate implementation of Green Computing
11	6	CT2363/CT2364	PE II: Internet of Things/Lab	Make use of Social Networking properly and securely
				Develop various IOT environments
				Demonstrate IOT architecture and its enabling technologies
				Analyze IOT environments using various communication technologies
12	6	CT2323	OE I: Image Processing	Apply various IOT enabling technologies for creation of IOT environments
				Describe basic relationships between pixels
				Compare various image enhancement techniques in spatial domain and frequency domain
				Illustrate different image compression techniques to understand the advantage of image compression
				Demonstrate the applications of similarity based and dissimilarity-based approaches for image segmentation
				Interpret various representation techniques

13	6	CT2381	OE IV: Soft Computing	Review different applications of soft computing to solve problems from different domains
				Demonstrate Fuzzy logic and its applications
				Explain Rough Set theory and its usage as soft computing
				Relate single-objective optimization problems using Gas
14	6	CT2382	OE IV: Software Testing	Describe Artificial neural networks and its applications
				Formulate problem by following Software testing life cycle
				Design Manual Test cases for Software testing approaches
				Demonstrate utilization of testing automation through testing tool
15	6	GE: 2311	FUNDAMENTAL OF MANAGEMENT	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
16	6	CT2369/CT2370	PE1: Customer Relationship Management(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
				Design a customize a CRM application for organization to suit their business needs
				Analyze the result of developed CRM application from various perspectives for implementing it
				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
17	6	CT2329	OE-I: Introduction to Salesforce	Represent a customize a CRM application for organization to suit their business needs
				Determine CRM strategies by understanding customers' preferences for the long-term sustainability of the Organizations
				Describe linguistic phenomena with formal grammars
				Illustrate and test algorithms for NLP problems
18	6	CT-2367	PE II: Introduction to Natural Language Processing	Examine NLP applications
				Devise real world NLP applications using NLP techniques
				Describe Basic relationships between pixels
				Compare various image enhancement techniques in spatial domain and frequency domain
1	7	CT2361	PE II: Digital Image Processing	Illustrate different image compression techniques to understand the advantage of image compression
				Demonstrate the applications of similarity based and dissimilarity-based approaches for image segmentation
				Interpret various representation techniques
				Describe different concepts of AI, and illustrate working of different types of intelligent agents and co-relate them in real life.
2	7	CT1451/1452	Artificial Intelligence /Lab	Differentiate between searching algorithms and apply appropriate algorithm to solve real life problems as well as in gaming domain.
				Select appropriate knowledge representation technique to represent real life facts.
				Demonstrate the working knowledge of reasoning in the presence of incomplete and/or uncertain information.
				Analyze learning approaches and recall AI basics for expert system.
3	7	CT 1415	Network Security	Identify threats to network security, associated attacks and countermeasures against attack.
				Use appropriate mathematical techniques in cryptography
				Apply various algorithms/ mechanisms to formulate appropriate solution.
				Use of different security protocols at various networking layers.

4	7	CT1408	Cloud Computing	Explain software and hardware support for enterprise and cloud computing
				Perform data modeling for enterprise and cloud knowledge bases
				Design enterprise and cloud software applications
				Implement and run distributed and cloud applications
5	7	CT1405	Embedded System	Ensure security and privacy in enterprise and cloud application while implementing cloud applications methodologies
				Use the Basics of ES and decide the components of an ES
				Develop understanding of the hardware & software integration to develop the final device
				Choose appropriate processors and Real Time operating system for ES design
6	7	CT1454	Machine Learning Techniques	Choose appropriate instruction sets to develop programs for communication of Embedded system with other devices
				Interpret machine learning techniques suitable for a given problem
				Apply machine learning techniques to solve the problems
				Compare machine learning techniques
7	7	CT 1437	Parallel Computing	Evaluate different machine learning techniques
				Identify areas where parallel computing is applicable
				Implement parallel version of different algorithms using thread programming and openMp
				Find the speedup factor by analyzing parallel programs
8	7	CT1406	Neural Network and Fuzzy Logic	Develop real life applications using parallel programming
				Illustrate the fundamentals of Biological Neural Network and Artificial Neural Network with its working
				Develop the solution for problem based on ANN using feed forward and Feed backward architecture
				Comprehend the various concepts of fuzziness involved in fuzzy set theory and solve the problems based on it
9	7	CT1453	Probabilistic Statistical and Data Analysis	Formulate fuzzy inference system using fuzzification and defuzzification methods
				Identify the hidden meaning in the data by applying some basic statistical formulae and probability distribution concepts using the tool 'R'
				Employ the sampling techniques to find the estimates and test its validity using hypotheses testing
				Analyze sample data to make inference about the population data.
10	7	CT1457	Fundamentals of Parallel Computing	Design the predictive model using simple and multiple regression technique
				Identify areas where parallel computing is applicable
				Implement parallel version of different algorithms using thread programming and openMp
				Find the speedup factor by analyzing parallel programs
11	7	CT 1414	Major Project Phase I	Develop real life applications using parallel programming
				Identify real life technical problem, conduct literature survey, and find limitations in existing solutions to address societal and industrial concerns.
				Analyze the problem and identify suitable tools and technologies for finding solution to the problem.
12	7	CT1413	Student Training	Communicate proposed solution effectively with proper presentation methods.
				Infer the Knowledge about current trends in industry
				Deliver Technical presentation
				Communicate effectively

13	7	CT1407	Ad-hoc Wireless Network	Compare the differences between cellular and ad hoc networks and identify the design issues at various layers
				Summarize the protocols used at different layers of Adhoc network. Also compare the different protocols in each category
				Identify the various types of attack in ad hoc network
14	7	CT1445 / CT1446	Numerical Computing / Lab	Classify QoS approaches and Identify the need of energy management in ad hoc network
				Apply appropriate formula to find different types of error in numerical computation and mitigate it.
				Choose appropriate numerical techniques for problem solving interpret the results and assess accuracy
1	8	GE1408	Cyber Laws	Apply appropriate techniques for numerical integration.
				Demonstrate basics of conditioning of problems and stability of numerical algorithms
				Describe the laws governing the national/international cyber space, IT Act scope and applications against Cyber Crimes, Data privacy and security (Act & Audits)
				Recognize the importance of digital evidence/licensing regulations and develop a implementation strategy through legal provisions through computer crime investigations.
2	8	CT1450	Object Oriented Modeling	Understand offences and penalties for cybercrimes under IT Act through case studies
				Identify/recognize implications of cyber laws on issues related to intellectual property rights, commercial transactions and develop a strategy to deal with them.
				Analyze the object-oriented modeling technique and able to create & analyze the class model, state diagram and interaction diagram
				Identify, analyze, and model structural and behavioral concepts of the system.
3	8	CT-1455 / CT1456	Cyber Forensics / Lab	Analyze & implement system design, database management, handling global resources etc
				Implement designed model using the object-oriented language & object-oriented databases concepts
				Investigate hardware parts of a computer system for evidences
				Use different tools for data acquisition and duplication for forensic study
4	8	CT1420 / CT1421	Pattern Recognition /Lab	Securely store data and evidence collected
				Create report of forensic investigation made
				Demonstrate the concepts of pattern recognition, probability, random variable, density function, different feature extraction techniques and solve problems for the given data
				Compute the parameters for different density functions and interpret it
5	8	CT1418 / CT1419	Digital Image Processing /Lab	Design appropriate pattern recognition solutions to classification, regression, and clustering problems.
				Evaluate and interpret the results of the applied techniques to solve pattern recognition problem
				Describe Basic relationships between pixels.
				Compare various image enhancement techniques in spatial domain and frequency domain.
				Illustrate different image compression techniques to understand the advantage of image compression
				Demonstrate the applications of similarity based and dissimilarity-based approaches for image segmentation.
				Interpret various representation techniques

6	8	CT1458 / CT1459	Introduction to Internet of things / Lab	Design and evaluate various IOT environments.
				Describe IOT architecture and its enabling technologies.
				Analysis IOT environments using various communication technologies.
				Apply various IOT enabling technologies for creation of IOT environments
7	8	CT 1426	Major Project Phase II	Acquire the domain knowledge and analyze the implemented model
				Design and develop the solution using appropriate tools and techniques for betterment of society and industry
				Communicate the work done through paper presentation or participation in competition as a team.
8	8	CT1427	Extra Curricular Activities	Develop his hobbies and interests
				Communicate and work in team
				Develop the sense of responsibility
9	8	CT1425	Comprehensive Viva	Comprehend various subjects applications to computer technology
				Performance in campus recruitments