COLLEGE OF ENGINEERING AND TECHNOLOGY

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Course Outcomes Semester -2020-2021

I SEMESTER

S No	Course Name with Course Code	CO NO	Course Outcomes
	Programming for problem solving	ES107CS.1	Formulate simple algorithms for arithmetic and logical problems, Translate the algorithms to programs in C language
		ES107CS.2	Test and execute the programs and correct syntax and logical errors.
1		ES107CS.3	Implement conditional branching, iteration and recursion.
1		ES107CS.4	Decompose a problem into functions and synthesize a complete program using divide and conquer approach
		ES107CS.5	Construct by using strings, arrays, pointers and structures and files to formulate algorithms and programs.
		ES107CS.6	Apply programming to solve matrix problems and searching and sorting problems

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Course Outcomes Semester -2020-2021

III SEMESTER

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
		PC252CS.1	Understand and Implement the abstract data type and reusability of a particular data structure.	Remembering
		PC252CS.2	Implement linear data structures such as stacks, queues using array and linked list.	Understanding
	Data Structures And	PC252CS.3	Understand and implements non- linear data structures such as trees, graphs.	Evaluating
1	Algorithms Lab (PC252CS)	PC252CS.4	Implement various kinds of searching, sorting and traversal techniques and know when to choose which technique.	Creating
		PC252CS.5	Understanding and implementing hashing techniques.	Analyzing
		PC252CS.6	Decide a suitable data structure and algorithm to solve a real world problem.	Applying
		PC222CS.1	.Apply Propositional and Predicate logic for a variety of problems in various domains.	Applying
		PC222CS.2	Understand Set Theory, Venn Diagrams, relations, functions and apply them to Real-world scenarios.	Creating
2	DISCRETE MATHEMATI CS (PC222CS)	PC222CS.3	Model and solve the real world problems using Generating Functions and Recurrence Relations.	Applying
	(- 322262)	PC222CS.4	Understand General properties of Algebraic systems and study lattices as partially ordered sets and their applications	Applying
		PC222CS.5	To identify the basic properties of graphs and trees and use these concepts to model simple applications.	Understanding

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		PC222CS.6	Apply the knowledge and skills obtained to investigate and solve a variety of discrete mathematics problems.	Applying
		PC221CS.1	Understand the basic OOP's concept and Understand the importance of abstract data type and implementing the concepts of data structure using abstract data type	Understanding
		PC221CS.2	Evaluate an algorithm by using algorithmic performance and measures.	Understanding
3	DATA STRUCTURE S AND ALGORITH	PC221CS.3	Distinguish between linear and non- linear data structures and their Representations in the memory using array and linked list.	Understanding
	MS(PC221CS	PC221CS.4	Develop applications using Linear and Non-linear data structures.	Applying
		PC221CS.5	Apply the suitable data structure for a real world problem and think critically for improvement in solutions.	Applying
		PC221CS.6	Determine the suitability of the standard algorithms: Searching, Sorting and Traversals.	Applying
		PC253CS.1	Implement basic syntax in python.	Creating
		PC253CS.2	Analyse and implement different kinds of OOP concept in python	Analyzing
4	ADVANCED COMPUTER SKILLS LAB (PC253CS)	PC253CS.3	Implement MATLAB operations and graphic functions	Creating
	(1 02000)	PC253CS.4	understand the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python	Understanding
		PC253CS.5	Able to implement Decision Making statements and Functions in python and MATLAB	Creating

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		PC253CS.6	Able to use underastand Object oriented Principles in Python.	Understanding
		PC258CS.1	Define syntax and semantics in formal notation and elaborate the concepts like Context Free Grammar, Backus-Naur Form, Parse Tree	Creating
		PC258CS.2	Discuss Various Programming Environments	Analyzing
5	Programming	PC258CS.3	Analyse various data types, Control Structures and modular programming in different programming languages	Creating
	languages	PC258CS.4	Compare Functional and Imperative Languages	Understanding
		PC258CS.5	Illustrate the importance of Semaphores, Monitors and Message passing	Creating
		PC258CS.6	Apply scripting languages for web design	Understanding
		BS206BZ.1	Recall the diversity in the living world	Remembering
		BS206BZ.2	Differentiate between microorganisms, plants, animals and the human system.	Understanding
6	Biology for Engineers	BS206BZ.3	Classify the organism for its employment in real time design and planning applications.	Evaluating
6	(BS206BZ)	BS206BZ.4	Use of the knowledge of organism their systems and utilize to simulate, design and in planning applications.	Creating
		BS206BZ.5	Utilise the knowledge to analyze, distinguish and draw inference about the functioning of the living systems.	Analyzing
		BS206BZ.6	Able to apply this fundamental knowledge in projects related to human society.	Applying

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		HS204ME.1	Apply mathematical model (linear programming problem) for a physical situations like production, distribution of goods and economics	Creating
		HS204ME.2	Apply the concept of simplex method and its extensions to dual simplex algorithm.	Analyzing
7	Operations Research	HS204ME.3	Analyze the various methods under transportation model and apply the model for testing	Creating
,	(HS204ME)	HS204ME.4	Apply the various replacement policy and gaming strategies for arriving at optimal decision	Understanding
		HS204ME.5	Analyze and Applying the knowledge of sequencing model and to develop optimum model for job scheduling	Creating
		HS204ME.6	analyze the Queuing theory models and Optimization techniques.	Understanding
		ES214EC.1	Explain the basic knowledge on the working of various semi-conductor devices and there importance in the present electronics	Understanding
		ES214EC.2	Apply and develop analysis capability in BJT and FET Amplifier Circuits	Understanding
	BAISIC	ES214EC.3	Demonstrate data converter and strain gauge measurement	Understanding
8	ELEECTRON ICS	ES214EC.4	Examine Operational Amplifier circuits as Summer, differentiator, integrator, inverting and non inverting amplifiers as ideal and practical	Applying
		ES214EC.5	Evaluate Boolean laws and theorems. State and explain the different logic gates using truth table. Analyze and design different adder circuits.	Applying
		ES214EC.6	Design the circuit to produce pure DC using regulators, and produce sinusoidal oscillations with different frequencies using oscillator circuits	Applying



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		ES216EC.1	Understand the deign process of digital hardware and different types of logic gates	Applying
		ES216EC.2	Understand the number representation and design combinational circuits like adders, MUX etc.	Creating
	Digital	ES216EC.3	Design Combinational circuits using PLDS and write VHDL code for basic gates and combinational circuits.	Applying
9	Electronics (ES216EC)	ES216EC.4	Analyse sequential circuits using flip-flops and design registers, counters.	Applying
		ES216EC.5	Evaluate use Boolean algebra to minimize the logical expressions and optimize the implementation of logical functions.	Understanding
		ES216EC.6	Represent a sequential circuit using Finite State machine and apply state minimization techniques to design a FSM	Applying
	BE LAB	ES955EC1	Plot characteristics of semi conductor diodes	Applying
		ES955EC2	Calculate ripple factor, efficiency and % regulation of rectifier circuits	Creating
10		ES955EC3	Study and performance of linear and non linear applications of op-amp	Applying
10	(ES955EC3)	ES955EC4	Analyze feedback amplifiers and BJT oscillator circuits	Applying
		ES955EC5	Demonstrate data converter and strain gauge measurement	Understanding
		ES955EC6	Plot the characteristics of different transistor & FET Configurations.	Applying



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Course Outcomes Semester -2020-21

V SEMESTER

S No	Course Name With Course Code	CO NO	Course Outcomes	Taxonomy
		PW533CS.1	Understand the programming language concepts and basics of software Development Life Cycle model for the implementation of the project.	Understanding
		PW533CS.2	Identify the requirements for the real world problems.	Applying
1	Mini Project	PW533CS.3	Evaluate different solutions based on economic and technical feasibility	Evaluating
	(PW533CS)	PW533CS.4	Effectively plan a project and confidently perform all aspects of project management	Applying
		PW533CS.5	Effectively plan to distribute the workload efficiently among the team members through proper-coordination.	Applying
		PW533CS.6	Illustrate effective coding, written, presentation and oral communication skills	Understanding
		PC532CS.1	Evaluate the performance of different types of CPU scheduling algorithms	Understanding
		PC532CS.2	Implement producer-consumer problem, reader-writers problem, Dining philosopher's problem	Understanding
2	Operating System Lab	PC532CS.3	Simulate Banker's algorithm for deadlock avoidance	Understanding
2	(PC532CS)	PC532CS.4	Implement paging replacement and disk scheduling techniques	Applying
		PC532CS.5	Use different system calls for writing application programs	Applying
		PC532CS.6	Ability to implement inter process communication between two processes	Applying
3	Software Engineering	PC531CS.1	Analyze and design software requirements in an efficient manner	Understanding
3	Lab (PC531CS)	PC531CS.2	Use open source case tools to develop software	Applying

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		PC531CS.3	Implement the design, debug and test the code	Applying
		PC531CS.4	Take part in using advanced & behavioural modelling to develop a case study.	Analysing
		PC531CS.5	Design the activities with the help of behavioural modelling.	Creating
		PC531CS.6	Develop components through architectural modelling.	Creating
		PE524CS.1	Demonstrate proficiency with statistical analysis of data.	Understanding
		PE524CS.2	Develop the ability to build and assess databased models.	Understanding
	Data	PE524CS.3	Execute statistical analyses with professional statistical software.	Understanding
4	Analytics (PE524CS)	PE524CS.4	Demonstrate skill in data management.	Applying
		PE524CS.5	Apply data science concepts and methods to solve problems in real-world contexts and will communicate these solutions effectively	Applying
		PE524CS.6	Gain knowledge on Data Visualization tools.	Applying
		PE524CS.1	Understand the algorithms and techniques for information retrieval (document indexing and retrieval, query processing)	Understanding
		PE524CS.2	Evaluate Structured Text Retrieval Models, Models for Browsing, Retrieval Evaluation and Query Languages.	Evaluating
5	Information Retrieval	PE524CS.3	Understand Query Operations, Text and Multimedia Languages and Properties.	Understanding
3	Systems (PE524CS)	PE524CS.4	Analyze the Text Operations of Document Pre- processing, Clustering, Text Compression and Indexing techniques.	Analyzing
		PE524CS.5	Classify and cluster documents	Analyzing and Evaluating
		PE524CS.6	Understand the practical aspects of information retrieval such as those in web search engines.	Understanding



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		PE511CS.1	Explain the principles of Artificial Intelligence	Understanding
		PE511CS .2	Illustrate the techniques for knowledge representation and inference	Understanding
	Artificial	PE511CS .3	Identify problems that are amenable to solution by AI method.	Applying
6	Intelligence (PE511CS)	PE511CS .4	Survey different applications like Game Playing, Expert Systems, Machine Learning and Natural Language Processing	Analyzing
		PE511CS .5	Analyze working of an AI technique	Analyzing
		PE511CS .6	Explain a given problem in the language/framework of different AI methods	Evaluating
		PE527CS.1	Understand the concepts of Internet ,HTML and CSS .	Understand
		PE527CS.2	Design and develop dynamic web pages using JavaScript.	Creating
7	Web And Internet Technologies (PE527 CS)	PE527CS.3	Understand the concepts of XML and J2EE	Understand
7		PE527CS.4	Understand and apply the concepts of servlet framework	Understand and Applying
		PE527CS.5	Build interactive web applications using JSP.	Applying
		PE527CS.6	Interpret and apply the concepts of database connectivity in web applications	Understand
		PC502CS.1	Explain and compare the different types of OS, basic architectural components involved in OS design.	Understand
		PC502CS.2	Identify System calls and evaluate process scheduling criteria of OS.	Evaluate
8	Operating Systems (PC502CS)	PC502CS.3	Develop process synchronization and deadlock	Analyzing
	(2 22 32 22)	PC502CS.4	Demonstrate the concepts of memory management and of disk management	Applying
		PC502CS.5	Compare different file allocation methods and decide appropriate allocation strategies for given type of file.	Analyzing

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		PC502CS.6	Explain the mechanisms available in OS to control access to resource and provide system security.	Evaluating
		PC501CS.1	Relate an appropriate process model for assessing software project development.	Understanding
		PC501CS.2	Build necessary requirements for project development eventually composing SRS	Applying
9	Software Engineering	PC501CS.3	Analyze various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance.	Analyzing
9	(PC501CS)	PC501CS.4	Survey visual models to describe (non-) algorithmic solutions for project build out.	Analyzing
		PC501CS.5	Choose solutions for recurring problems development exerting knowledge on design principles and patterns.	Evaluating
		PC501CS.6	Determine product quality through testing techniques, employing appropriate metrics.	Evaluating
	ALC	PC503CS.1	Explain the basic concepts of finite automata and regular expressions	Understanding
		PC503CS.2	Describe the types of grammar and derivation tree.	Understanding
10		PC503CS.3	Test the equivalence of pushdown automata and CFL.	Evaluating
10	(C503CS)	PC503CS.4	Develop a computational model using Turing machine for the given problem	Creating
		PC503CS.5	Use Chomsky hierarchy to solve given problems	Applying
		PC503CS.6	Examine the complexity for P and NP completeness for the given problem.	Evaluating

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Course Outcomes Semester -2020-21

VII SEMESTER

S No	Course Name With Course Code	CO NO	Course Outcomes	Taxonomy
		PC701CS.1	Create Lexical rules and grammars for a given language	Creating
		PC701CS.2	Generate Scanners and Parsers from declarative specifications	Creating
1	Compiler Construction	PC701CS.3	Describe an Abstract syntax tree for a small language	Understanding
1	(PC701CS)	PC701CS.4	Use Program analysis techniques for code optimization	Applying
		PC701CS.5	Develop the compiler for a subset of a given language	Creating
		PC701CS.6	Build the LEX and YACC tools to implement Analysis of Compilation	Creating
2	Entrepreneurs hip (OE775ME)	OE775ME.1	Explain the Indian Industrial Environment, Entrepreneurship and Economic growth, Small and Large Scale Industries, Types and forms of enterprises	Understanding
		OE775ME.2	Identify the characteristics of entrepreneurs, challenges of first generation entrepreneurs, environmental influences; and able choose and evaluate the idea and the choice of technology.	Applying
		OE775ME.3	Demonstrate the principles of project formulation, analysis of market demand, Financial and profitability analysis and Technical analysis and able to evaluate the technical feasibility and financial viability of a project.	Understanding

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		OE775ME.4	Apply the concepts of Project Management, CPM & PERT techniques, and explain the tax assessment burden.	Understanding
		OE775ME.5	Identify the Behavioural aspects of entrepreneurs, Personality determinants and attributes, Leadership concepts and models, values and attitudes and motivation aspects.	Understanding
		OE775ME.6	Demonstrate and apply Time Management principles	Understanding
		PC703CS.1	Describe the steps in Security Systems development life cycle (SecSDLC)	Understanding
	Information Security (PC703CS)	PC703CS.2	Understand the common threats and attack to information systems	Understanding
		PC703CS.3	Understand the legal and ethical issues of information technology	Understanding
3		PC703CS.4	Identify security needs using risk management and choose the appropriate risk control strategy based on business needs	Applying
		PC703CS.5	Use the basic knowledge of security frameworks in preparing security blue print for the organization	Applying
		PC703CS.6	Usage of reactive solutions, network perimeter solution tools such as firewalls, host solutions such as antivirus software and Intrusion Detection techniques and knowledge of ethical hacking tools	Applying

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4	Distributed Systems (PC702CS)	PC702CS.1	Find solutions for issues in architectures by applying the concepts of distributed systems	Creating
		PC702CS.2	Illustrate client/server, p2p algorithms, RPC and RMI communication methodologies	Understanding
		PC702CS.3	Understand synchronization among processes through various coordination algorithms	Analyze
		PC702CS.4	Apply distributed transaction control algorithms for optimistic concurrency control along with fault tolerance recovery mechanisms	Applying
		PC702CS.5	Differentiate client and data centric consistency models in a Distributed System.	Creating
		PC702CS.6	Interpret the knowledge over shared memory and file systems in distributed environment.	Creating
5	Road Safety Engineering (OE781CE)	OE781CE.1	Demonstrate about road accidents and its study objectives. Prepare accident investigation reports and database based on data collected.	Understanding
		OE781CE.2	Apply design principles for roadway geometrics improvement with various types of traffic safety appurtenances/tools	Applying
		OE781CE.3	Explain the road safety design operations, counter measures & characteristics to manage traffic including incident management	Understanding
		OE781CE.4	Illustrate the concept of Road Safety Auditing its principles, procedures and code of good practice and checklists	Understanding
		OE781CE.5	Explainabout design and working principles of road signs and traffic signals	Understanding
		OE781CE.6	Describe applications of ITS in effectively managing the traffic incidents.	Understanding

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6	Data Mining (PE704CS)	PE704CS.1	Define knowledge discovery process and identify different kinds of data that can be mined.	Remembering
		PE704CS.2	Organize and Prepare the data needed for data mining using prep reprocessing techniques	Understanding
		PE704CS.3	Understand association rules for mining frequent patterns.	Analyzing
		PE704CS.4	Apply Eager & Lazy Classification methods and estimate accuracy of different models.	Creating
		PE704CS.5	Distinguish clustering algorithms and evaluate the performance.	Applying
		PE704CS.6	Explore recent trends in data mining to solve real world problems	Analyzing
7	Compiler Construction Lab (PC751CS)	PC751CS.1	Develop hand written lexical analyzers or scanners for a sample C code	Creating
		PC751CS.2	Apply the knowledge of LEX to develop a C scanner.	Applying
		PC751CS.3	Develop hand written top down parsers like recursive descent parser and construct first and follow sets for a given grammar.	Creating
		PC751CS.4	Explain hand written shift reduce parser for a given grammar.	Understanding
		PC751CS.5	Apply the knowledge of YACC to syntax directed translations for generating intermediate code – 3 address code.	Applying

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		PC751CS.6	Estimate and Optimize target code.	Evaluating
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	Distributed Systems Lab (PC752CS)	PC752CS.1	Write programs that communicate data between two hosts	Creating
		PC752CS.2	Configure Network File Systems	Understanding
		PC752CS.3	Use distributed data processing frameworks and mobile application tool kits	Applying
		PC752CS.4	Trace Communication protocols in distributed systems	Analyze
		PC752CS.5	Develop an application using a technology from distributed system	Creating
		PC752CS.6	Design of algorithm distributed system	Creating
	Data Mining Lab (PC753CS)	PC753CS.1	Apply data pre-processing techniques	Understanding
		PC753CS.2	Apply Frequent Item-set Mining methods to generate association rules.	Evaluating
		PC753CS.3	Identify and perform appropriate classification for given dataset.	Analyzing
		PC753CS.4	Categorize and apply appropriate clustering for given dataset.	Understanding

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		PC753CS.5	Evaluate models/algorithms with respect to their accuracy.	Creating
		PC753CS.6	Construct a data mining solution to a practical problem	Creating
	Project Work-I (PW761CS)	PW761CS.1	Demonstrate the ability to apply the knowledge and skills acquired in the academic program to the real-world problems	Understanding
		PW761CS.2	Evaluate different solutions based on feasibility study	Evaluating
		PW761CS.3	Effectively plan a project.	Analyzing
		PW761CS.4	Demonstrate effective written and oral communication skills	Understanding
		PW761CS.5	Undertake problem identification, formulation and execution	Creating
		PW761CS.6	Plan, analyze, design, implement and test a software project.	Creating