METHODIST
COLLEGE OF ENGINEERING AND TECHNOLOGY
Approved by AICTE New Delhi | Affiliated to Osmania University, Hyderabad

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Course Outcomes Semester -2019-2020   **I SEMESTER**

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

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Course Outcomes Semester -2019-2020   **II SEMESTER**

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

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Course Outcomes Semester -2019-2020   **III SEMESTER**

S No	Course Name	CO NO	Course Outcomes	Taxonomy
1	Environmental Science (MC112CE)	MC112CE.1	Synthesize popular media reports/articles discussing environmental issues, and verbally discuss and defend their positions on scientific issues	Creating
		MC112CE.2	Able to list common and adverse human impacts on biotic communities, soil, water, and air quality and suggest sustainable strategies to mitigate these impacts	Remembering
		MC112CE.3	Apply mathematical concepts, including statistical methods, to field and laboratory data to study scientific phenomena.	Applying
		MC112CE.4	Design and execute a scientific project.	Creating
		MC112CE.5	Understand the importance of Environmental legislation policies.	Understanding
		MC112CE.6	Categorize the types of environmental pollution and the various treatment technologies for the diminution of environmental pollutants and contaminants.	Analyzing
2	Basic Electronics (ES214EC)	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	Applying
		ES214EC.3	Make use of knowledge on design trade-offs in various digital electronic families with a view towards reduced power consumption	Understanding
		ES214EC.4	Examine Operational Amplifier circuits as Summer, differentiator, integrator, inverting and non inverting amplifiers as ideal and practical	Analyzing
		ES214EC.5	Evaluate Boolean laws and theorems. State and explain the different logic gates using truth table. Analyze and design different adder circuits.	Creating
		ES214EC.6	Design the circuit to produce pure DC using regulators, and produce sinusoidal oscillations with different frequencies using oscillator circuits	Creating and Understanding

S No	Course Name	CO NO	Course Outcomes	Taxonomy
2	Digital Electronics (ES216EC)	ES216.1	Understand the deign process of digital hardware, use Boolean algebra to minimize the logical expressions and optimize the implementation of logical functions.	Understanding
		ES216.2	Understand the concept of number representation	Understanding
		ES216.3	Design combinational circuits like adders, MUX etc	Creating
		ES216.4	Design Combinational circuits using PLDS and write VHDL code for basic gates and combinational circuits.	Creating
		ES216.5	Analyse sequential circuits using flip-flops and design registers, counters	Analyzing
		ES216.6	Represent a sequential circuit using Finite State machine and apply state minimization techniques to design a FSM	Evaluating
3	Data Structures And Algorithms (PC221CS)	PC221CS.1	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.	Evaluating
		PC221CS.3	Distinguish between linear and non-linear data structures and their representations in the memory using array and linked list.	Analyzing and Evaluating
		PC221CS.4	Develop applications using Linear and Non-linear data structures	Creating
		PC221CS.5	Develop applications using Linear and Non-linear data structures	Creating
		PC221CS.6	Determine the suitability of the standard algorithms: Searching, Sorting and Traversals.	Evaluating
4	Discrete Mathematics (PC222CS)	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.	Understanding
		PC222CS.3	Model and solve the real world problems using Generating Functions and Recurrence Relations.	Creating
		PC222CS.4	Understand General properties of Algebraic systems and study lattices as partially ordered sets and their applications	Understanding
		PC222CS.5	To identify the basic properties of graphs and trees and use these concepts to model simple applications.	Applying
		PC222CS.6	Apply the knowledge and skills obtained to investigate and solve a variety of discrete mathematics problems.	Applying

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5	Programming Languages (PC223CS)	PC223CS.1	Define syntax and semantics in formal notation	Understanding
		PC223CS.2	Discuss Various Programming Environments	Creating
		PC223CS.3	Elaborate the concepts like Context Free Grammar, Backus-Naur Form, Parse Tree	Creating
		PC223CS.4	Analyse various datatypes in different programming languages	Analyzing
		PC223CS.5	Compare Functional and Imperative Languages	Analyzing
		PC223CS.6	Recall the importance of Semaphores, Monitors and Messagepassing	Remembering
6	Data Structures And AlgorithmsLab (PC252CS)	PC252CS.1	Implement the abstract data type and reusability of a particular data structure	Applying
		PC252CS.2	Implement linear data structures such as stacks, queues using array and linked list.	Applying
		PC252CS.3	Understand and implements non-linear data structures such as trees, graphs	Understanding and Applying
		PC252CS.4	Implement various kinds of searching, sorting and traversal techniques and know when to choose which technique.	Applying
		PC252CS.5	Understanding and implementing hashing techniques.	Understanding and Applying
		PC252CS.6	Decide a suitable data structure and algorithm to solve a real world problem.	Evaluating
7	Advanced Computer Skills Lab (PC253CS)	PC253CS.1	Implement basic syntax in python.	Creating
		PC253CS.2	Analyse and implement different kinds of OOP concept in python	Analyzing
		PC253CS.3	Implement MATLAB operations and graphic functions	Creating
		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
		PC253CS.6	Able to use basic flow controls (if-else, for, while) using matlab tools.	Creating
8	Basic Electronics Lab (ES251EC)	ES251EC.1	Plot characteristics of diode and transistor	Applying
		ES251EC.2	Verify the characteristics of different transistor Configurations.	Creating
		ES251EC.3	Calculate ripple factor, efficiency and % regulation of rectifier circuits	Applying
		ES251EC.4	Analyze feedback amplifiers and BJT oscillator circuits	Applying
		ES251EC.5	Demonstrate Opamp, data converter and strain gauge measurement	Understanding
		ES251EC.6	Design different circuits using single stage Amplifiers.	Applying

S No	Course Name	CO NO	Course Outcomes	Taxonomy
9	Biology For Engineers (BS206BZ)	BS206BZ.1	Recall the diversity in the living world	Remembering
		BS206BZ.2	Differentiate between microorganisms, plants, animals and the human system.	Analyzing
		BS206BZ.3	Classify the organism for its employment in real time design and planning applications.	Analyzing
		BS206BZ.4	Use of the knowledge of organism their systems and utilize to simulate, design and in planning applications.	Applying
		BS206BZ.5	Utilise the knowledge to analyze, distinguish and draw inference about the functioning of the living systems.	Applying
		BS206BZ.6	Able to apply this fundamental knowledge in projects related to human society.	Applying
10	Operations Research (HS204ME)	HS204ME.1	Apply mathematical model (linear programming problem) for a physical situations like production, distribution of goods and economics	Apply
		HS204ME.2	Apply the concept of simplex method and its extensions to dual simplex algorithms.	Apply
		HS204ME.3	Analyze the various methods under transportation model and apply the model for testing	Analyze
		HS204ME.4	Apply the various replacement policy and gaming strategies for arriving at optimal decision	Analyze
		HS204ME.5	Analyze and Applying the knowledge of sequencing model and to develop optimum model for job scheduling	Analyze
		HS204ME.6	Analyze the Queuing theory models and Optimization techniques.	Analyze
11	Essence of Indian Traditional Knowledge (MC113PY)	MC113PY.1	To outline the history of civilization in Indian context since pre-Vedic times	Understanding
		MC113PY.2	To outline the various schools of Indian Philosophy	Understanding
		MC113PY.3	To demonstrate the diversity in Indian Thought , Languages , regional culture , dress, living style etc.	Understanding
		MC113PY.4	To Identify the various religious and social reform movements which took place in the past few centuries	Applying
		MC113PY.5	To classify the wealth of Indian Fine Arts and the diversity associated with it over the length and breadth of the country	Understanding
		MC113PY.6	To List the various subjects which flourished in ancient system of education and the progression thereof to modern India.	Remembering

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Coordinator   CSE-HOD

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Course Outcomes Semester -2019-2020   **IV SEMESTER**

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
1	Computer Organization (PC232CS)	PC232CS.1	Recall and apply a basic concept of block diagram of computer (CPU) with Microprocessor processor unit (MPU)	Applying
		PC232CS.2	Understand the importance of addressing modes, instruction formats and program control instructions	Understanding
		PC232CS.3	Identify and compare different methods for computer I/O mechanisms	Analyzing
		PC232CS.4	Categorize memory organization and explain the function of each element of a memory hierarchy	Analyzing
		PC232CS.5	Understand the internal architecture and register organization of 8086	Understanding
		PC232CS.6	Apply knowledge and demonstrate programming proficiency using the various addressing modes and instruction sets of 8086	Applying
2	Computer Organization Lab (PC261CS)	PC 261 CS.1	Interpret the principles of Assembly Language Programming in developing microprocessor based applications	Understanding
		PC 261 CS.2	Develop Applications such as: 8-bit Addition, Multiplication, and Division, searching and sorting	Creating
		PC 261 CS.3	Understand the addressing modes, instruction sets of 8086.	Understanding
		PC 261 CS.4	Analyze the interfaces like serial ports, converters like ADC and DAC.	Analyzing
		PC 261 CS.5	Build interfaces of Input-output ,DC motor and stepper motor with 8086	Applying
		PC 261 CS.6	Analyze the function of traffic light signal controller with 8086	Analyzing
3	Database Management Systems (PC233CS)	PC233CS.1	The students will be able to define, explain and illustrate the fundamental concepts of databases	Understanding
		PC233CS.2	The students will be able to construct an Entity-Relationship (E-R) model from specifications and to perform the transformation of the conceptual model into corresponding logical data structures	Applying
		PC233CS.3	The students will be able to model and design a relational database following the design principles	Applying
		PC233CS.4	The students will be able to develop queries for relational database in the context of practical applications	Applying

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
		PC233CS.5	The students will be able to define, explain and illustrate fundamental principles of data organization, query optimization and concurrent transaction processing.	Understanding
		PC233CS.6	The students will be able to adopt the latest trends in databases	Creating
4	OOP Using JAVA (PC231CS)	PC231CS.1	Identify classes, objects, members of a class and the relationships needed to solve a problem	Analyzing
		PC231CS.2	Use of interfaces, inheritance and creating user-defined packages	Applying
		PC231CS.3	Utilize exception handling and Multithreading concepts to develop Java programs	Applying
		PC231CS.4	Demonstrate use of Java libraries	Understanding
		PC231CS.5	Design a GUI using GUI components with the integration of event handling	Creating
		PC231CS.6	Use of Java's robust features in the process of application development	Applying
5	OOP Using JAVA Lab (PC262CS)	PC262CS.1	Design interfaces and packages	Creating
		PC262CS.2	Compose program for implementation of multithreading concepts	Creating
		PC262CS.3	Develop program using Collection Framework	Creating
		PC262CS.4	Develop small GUIs using GUI components with the integration of event handling	Creating
		PC262CS.5	Handle I/O Streams from various sources.	Applying
		PC262CS.6	Write programs using the Java Concepts.	Understanding
6	Signals and Systems (ES215EC)	ES215EC.1	Define and differentiate types of signals and systems in continuous and discrete time	Understanding
		ES215EC.2	Signal representation by using Trigonometric Fourier Series, Exponential Fourier Series	Analyzing
		ES215EC.3	Apply the properties of Fourier transform for continuous time signals	Applying
		ES215EC.4	Relate Laplace transforms to solve differential equations and to determine the response of the Continuous Time Linear Time Invariant Systems to known inputs	Evaluating
		ES215EC.5	Apply Z-transforms for discrete time signals to solve Difference equations	Evaluating
		ES215EC.6	Obtain Linear Convolution and Correlation of discrete time signals with graphical representation	Evaluating
	Database Management	PC 263 CS.1	Define basic functions of DBMS & RDBMS.	Understanding
		PC 263 CS.2	Analyze database models & entity relationship models.	Applying
		PC 263 CS.3	Design and implement a database schema for a given problem-domain	Applying

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
7	Management Systems Lab (PS263CS)	PC 263 CS.4	Populate and query a database using SQL DML/DDL commands.	Applying
		PC 263 CS.5	Programming PL/SQL including stored procedures, stored functions, cursors and package	Understanding
		PC 263 CS.6	Design and implement for Forms and Reports	Applying
8	Finance and Accounting (HS202CM)	HS202CM.1	Understand the basic concepts of financial accounting&classify preparation of various books of accounts	Understanding
		HS202CM.2	Analyze & interpret financial statements.	Analyzing
		HS202CM.3	interpret knowledge about the functioning & working of various financial institutions.	Understanding
		HS202CM.4	Apply traditional & modern techniques of capital budgeting in long term investments, to test whether to invest in a	Applying
		HS202CM.5	Analyze the liquidity ,solvency & profitability of financial statements.	Analyzing
		HS202CM.6	Evaluate the financial performance of the business unit.	Evaluating
9	Indian Constitution (MC111PO)	MC111PO.1	To understand the conditions prior to evolution of Indian Constitution	Understanding
		MC111PO.2	To understand the structure of governance in post independance India and power & limitation of the executive	Understanding
		MC111PO.3	To relate the importance of Fundamental rights and associated duties as enshrined in the constitution	Understanding
		MC111PO.4	Develop understanding the relationship between central and state governments in terms of duties and responsibilities	Applying
		MC111PO.5	To summarize the role of statutory bodies like Election Commission , NHRC , NCW	Understanding
		MC111PO.6	To understand the role of constitutions of different countries and the contributions of leaders	Understanding
10	Mathematics-III (BS205MT)	BS205MT.1	Find the Bayes theorem Expectation, mean,varience and standard deviation.	Remember
		BS205MT.2	Solve Bionomial, Poission distributions and skewness and kurtics.	Apply
		BS205MT.3	Solve Normal,Uniform and Exponential distributions.	Apply
		BS205MT.4	Examine the correlation coefficient and rank correlation for the given da	Analyse
		BS205MT.5	Determine straight line equation ,parabola equation and exponential equation.	Evaluate
		BS205MT.6	Evaluate t-distibution F-distribution and chisquare distibutions	Evaluate

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
11	Effective Technical Communication (HS201 EG)	HS201EG.1	Develop an understanding of fundamentals of Technical Communication	Understand
		HS201EG.2	Demonstrate the ability to choose the right mode of Written Communication in Official Correspondence	Apply
		HS201EG.3	Analyze and differentiate various types of Reports and would use appropriately based on the requisite.	Analyze
		HS201EG.4	Determine using the importance of using, Writing different kinds of Manuals and their Classification.	Analyze
		HS201EG.5	Estimate the deliberate value of a Visual Aid along with its usage , through the understanding of Informatioon Transfer from Verbal to Non-Verbal and Non-Verbal to Verbal.	Evaluate
		HS201EG.6	Combine the Skill of both Oral and Visual Presentation Skills and be able to adapt to the changing scenerio of the present day.	Create

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Course Outcomes Semester -2019-2020　　　　　　　　　　　　　　　　　**V SEMESTER**

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
1	Database Management System (PC501CS)	PC501CS.1	Define, explain and illustrate the fundamental concepts of databases	Understanding
		PC501CS.2	Construct an Entity-Relationship (E-R) model from specifications and to perform the transformation of the conceptual model into corresponding logical data structures..	Applying
		PC501CS.3	Model and design a relational database following the design principles	Applying
		PC501CS.4	Develop queries for relational database in the context of practical applications	Applying
		PC501CS.5	Define, explain and illustrate fundamental principles of data organization, query optimization and concurrent transaction processing.	Understanding
		PC501CS.6	Appreciate the latest trends in databases	Creating
2	Data Communication (PC502CS)	PC502CS.1	Independently understand basic computer network technology	Understanding
		PC502CS.2	Understand and explain Data Communications System and its components.	Understanding
		PC502CS.3	Identify the different types of network topologies and protocols	Applying
		PC502CS.4	Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.	Understanding
		PC502CS.5	Identify the different types of network devices and their functions within a network	Applying
		PC502CS.6	Understand and building the skills of subnetting and routing mechanisms	Understanding
3	Automata Languages & Computation (PC503CS)	PC503CS.1	To demonstrate abstract models of computing, including deterministic (DFA), non-deterministic (NFA), Push Down Automata (PDA) and Turing (TM) machine models and their power to recognize the languages	Understanding
		PC503CS.2	Convert among equivalently powerful notations for a language, including among DFAs, NFAs, and regular expressions, and between PDAs and CFGs	Creating
		PC503CS.3	Determine a language's place in the Chomsky hierarchy (regular, context-free, recursively enumerable)	Evaluating
		PC503CS.4	To solve various problems of applying normal form techniques, push down automata and Turing Machines	Applying
		PC503CS.5	Interpret the concepts of Undecidability	Understanding
		PC503CS.6	Explain why the halting problem has no algorithmic solution	Understanding

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
4	Operating Systems (PC504CS)	PC504CS.1	Explain the concepts of OS structure and process synchronization.	Understanding
		PC504CS.2	Evaluate and design different process scheduling algorithms	Evaluating
		PC504CS.3	Identify the rationale behind various memory management techniques along with issues and challenges of main memory, virtual memory.	Analyzing
		PC504CS.4	Compare different file allocation methods and decide appropriate allocation strategies for given type of file.	Analyzing
		PC504CS.5	Explain the mechanisms available in OS to control access to resource and provide system security.	Understanding
		PC504CS.6	Compare the features of Linux and Windows7 Operating system.	Analyzing
5	Computer Graphics (PC505CS)	PC505CS.1	Define the steps in graphics programming pipe line	Remembering
		PC505CS.2	Make use of interactive graphics applications using OpenGL to draw geometric primitives	Applying
		PC505CS.3	Apply affine transformations for viewing and projections	Applying
		PC505CS.4	Demonstrate realistic images of 3-d objects that involve lighting shading aspects and various animation sequence	Understanding
		PC505CS.5	Understand the concept of hierarchical models	Understanding
		PC505CS.6	Demonstrate the mathematical principles to represent curves and surfaces	Understanding
6	Managerial Economics & Accountancy (HS901MB)	HS901MB.1	Identify the nature and scope of managerial economics in the modern business	Applying
		HS901MB.2	Understand the fundamentals of managerial economics such as demand, production, price and supply which helps them in doing business effectively	Understianding
		HS901MB.3	Know about the marketing research approaches to demand estimation in demand forecasting and its function in an organization	Understianding
		HS901MB.4	Evaluate benefit/cost, life cycle and breakeven analyses on one or more economic alternatives	Evaluating
		HS901MB.5	Examine the cost function and differences between short-run and long-run cost function	Analyzing
		HS901MB.6	To develop an understanding about recording of business transactions and preparation of financial statements.	Creating

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
7	Artificial Intelligence (PE502CS)	PE502CS.1	Explain the principles of Artificial Intelligence	Understanding
		PE502CS.2	Illustrate the techniques for knowledge representation and inference.	Understanding
		PE502CS.3	Identify problems that are amenable to solution by AI method	Applying
		PE502CS.4	Survey different applications like Game Playing, Expert Systems, Machine Learning and Natural Language Processing.	Analyzing
		PE502CS.5	Analyze working of an AI technique	Analyzing
		PE502CS.6	Explain a given problem in the language/framework of different AI methods	Evaluating
8	Gender Sensitization (MC901EG)	MC901EG.1	Develop a better understanding of important issues related to gender in contemporary India.	Understanding
		MC901EG.2	To change the basic dimensions of the biological. Sociological, psychological and legal aspects of gender through discussions, facts, everyday life, literature and film	Applying
		MC901EG.3	To analyze how gender discrimination works in our society and how to counter it.	Analyzing
		MC901EG.4	To identify and plan better ways of working and living together as equals.	Applying
		MC901EG.5	To develop a sense of appreciation of women in all walks of life	Evaluating
		MC901EG.6	To enable in developing good interpersonal relationships at work places and to develop a sustain interest in gender equality	Creating
9	Database Management SystemLab (PC551CS)	PC551CS.1	Infer database language commands to create simple database	Understanding
		PC551CS.2	Analyze the database using queries to retrieve records	Analyze
		PC551CS.3	Applying PL/SQL for processing database	Applying
		PC551CS.4	Analyze front end tools to design forms, reports and menus	Analyzing
		PC551CS.5	Develop solutions using database concepts for real time requirements..	Creation
		PC551CS.6	Develop multi-user database application using locks	Creation

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
10	OPERATING SYSTEM LAB (PC552CS)	PC 552 CS.1	Experiment with basic Linux shell commands	Applying
		PC 552 CS.2	Analyze the performance of the various Memory management algorithms and develop various memory management schemes	Analyzing
		PC 552 CS.3	Interpret the benefits of thread over process and Build synchronized programs using multithreading concepts.	Understanding
		PC 552 CS.4	Compare various CPU Scheduling Algorithms like FCFS, Round Robin, SJF, and Priority and develop programs for all the algorithms	Analyzing
		PC 552 CS.5	Understand the concept of process synchronization and create programs like Dining Philosophers problem.	Understanding
		PC 552 CS.6	Understand the basics of shell scripting and develop shell scripts for simple system administration tasks	Understanding
11	COMPUTER GRAPHICS LAB(PC553CS)	PC553CS.1	Build interactive graphics applications using OpenGL geometric primitives	Creating
		PC553CS.2	Implement basic transformations on objects using OpenGL	Creating
		PC553CS.3	Build different views using projections	Creating
		PC553CS.4	Create realistic images of 3-d objects with light sources and shading	Creating
		PC553CS.5	Build walkthrough programs using OpenGL	Creating
		PC553CS.6	Understand the concept of Bezier and Bspline curve and build the programs for curves	Understanding

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Course Outcomes Semester -2019-2020   **VI SEMESTER**

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
1	Computer Networks & Programming (PC604CS)	PC604CS.1	Describe the functions of each layer in OSI and TCP/IP model.	Remembering
		PC604CS .2	Explain the functions of Application layer and Presentation layer paradigms and Protocols.	Understanding
		PC604CS.3	Examine the Transport layer services and protocols.	Analyzing
		PC604CS.4	Interpret the network layer ,routing protocols and analyze how to assign the IP addresses for the given network.	Applying
		PC604CS.5	Determining factors influencing the QoS.	Evaluating
		PC604CS.6	Build Client-Server applications using socket Programming	Creating
2	Design and Analysis of Algorithms (PC601CS)	PC601CS.1	Students will be able to Analyze a given algorithm and express its time and space complexities in asymptotic notations.	Analyzing
		PC601CS.2	Students will be able to Solve recurrence equations using Iteration Method, Recurrence Tree Method and Master's Theorem .	Evaluating
		PC601CS.3	Students will be able to design algorithms using Divide and Conquer Strategy.	Applying
		PC601CS.4	Students will be able to compare Dynamic Programming and Divide and Conquer Strategies.	Analyzing
		PC601CS.5	Students will be able to solve Optimization problems using Greedy strategy.	Analyzing
		PC601CS.6	Students will be able to design efficient algorithms using Back Tracking and Branch Bound Techniques for solving problems.	Creating
3	Advanced Databases (PC603CS)	PC603CS.1	Describe the features added to object-relational systems to distingusih them from standard relational systems	Understanding
		PC603CS.2	Model a relational/semi-structured database using XML Schema	Applying
		PC603CS.3	Understand different algorithms used in implementation of query evaluation engine.	Understanding
		PC603CS.4	Measure query costs and design alternate efficient paths for query execution.	Evaluating
		PC603CS.5	Understand and Analyze the different concurrency control and commit protocols in distributed databases.	Understanding
		PC603CS.6	Demonstrate and understanding of the role and the concepts involved in special purpose databases such as Temporal, Spatial, Mobile and other similar database types	Understanding

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
4	Software Engineering (PC602CS)	PC602CS.1	Relate an appropriate process model for assessing software project development .	Understanding
		PC602CS.2	Build necessary requirements for project development eventually composing SRS	Applying
		PC602CS.3	Analyze various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance.	Analyzing
		PC602CS.4	Survey visual models to describe (non-) algorithmic solutions for project build out.	Analyzing
		PC602CS.5	Choose solutions for recurring problems development exerting knowledge on design principles and patterns.	Evaluating
		PC602CS.6	Determine product quality through testing techniques, employing appropriate metrics.	Evaluating
5	Software Engineering Lab (PC651CS)	PC651CS.1	Interpret a variety of approaches and perspectives of system development.	Understanding
		PC651CS.2	Identify the requirements which are relevant to the design of a system.	Applying
		PC651CS.3	Model software design with a set of objects and their relationships using structural modeling.	Applying
		PC651CS.4	Take part in using advanced & behavioral modeling to develop a case study.	Analysing
		PC651CS.5	Design the activities with the help of behavioral modeling.	Creating
		PC651CS.6	Develop components through architectural modeling.	Creating
6	Web Programming (PC603CS)	PC603CS.1	Create static web pages using HTML5 and CSS3	Creating
		PC603CS.2	Compare HTML & XML and Create DTD, Schema; Transform using XSLT and Process using SAX, DOM..	Understanding and Analyzing
		PC603CS.3	Design dynamic web pages with server validation using Scripting(JS, PHP AJAX & Python)	Applying
		PC603CS.4	Describe server side programming using Servlet, JSP capable of handling sessions.	Understanding
		PC603CS.5	Explain server side programming using PHP and Database Connectivity with Perl and JDBC .	Understanding
		PC603CS.6	Create simple web application using server side PHP programming and Database Connectivity using MySQL	Creating
7	Web Programming Lab(PC652CS)	PC 652CS.1	Design a Web site using HTML/DHTML and style sheets	Creating
		PC 652CS.2	Implement Block Level Elements that includes List Tags, Table tag.	Creating
		PC 652CS.3	Use HTML divide the window into various sections using FRAME Tag.	Applying
		PC 652CS.4	Create dynamic web pages using server side scripting	Creating
		PC 652CS.5	Develop a web application with backend database connectivity	Creating
		PC 652CS.6	Design and program applications using Python.	Creating

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
8	Computer Networks & Programming Lab (PC653CS)	PC653CS.1	Explore diffrent networking commands	Creating
		PC653CS.2	Develop concurrent programs using message queues and semaphores	Creating
		PC653CS.3	Use connection-oriented Asynchronous sockets	Analyzing
		PC653CS.4	Use connectionless Asynchronous sockets	Understanding
		PC653CS.5	Implement networked applications in TCP/IP protocol Suite	Evaluating
		PC653CS.6	Implement networked applications in UDP protocol	Creating
9	Disaster Management (OE601CE)	OE601CE.1	Define Disaster, Hazard, Vulnerability, Resilience, Risks and explain Natural and Manmade disasters	Understand
		OE601CE.2	Classify the environmental causes ,Impacts including, social, cultural, economic, legal and organizational aspects influencing vulnerabilities and capacities to face disasters	Analyzing and Understanding
		OE601CE.3	Classify disasters and destructions due to cyclones floods and droughts	Analyzing and Understanding
		OE601CE.4	Explain Disaster cycle, its analysis, Phases, Culture of safety, prevention, mitigation and preparedness community based DRR	Understanding
		OE601CE.5	Describe Factors affecting Vulnerabilities, differential impacts, impact of development projects, Climate Change and Relevance of indigenous knowledge, appropriate technology and local resources.	Understading
		OE601CE.6	Experience on conducting independent DM study including data search, analysis and presentation of disaster case study and component of disaster relief.	Creating
10	Graph Theory and Its Applications (PE601CS)	PE601CS.1	Define basic concepts&terminologies of graphs,Isomorphism,Trees and its properties.	Understanding
		PE601CS.2	Analyze Konigsberg bridge problem using Euler's graph.	Applying
		PE601CS.3	Interpret special classes of graphs&Fleury's algorithm,Chinese postman problem&Hamilton circuit.	Analyzing
		PE601CS.4	Formulate and prove central theorems about trees,matching,connectivity.	Analyzing
		PE601CS.5	Define different algorithms for vertex coloring and edge coloring.	Evaluating
		PE601CS.6	Describe planar graphs and its properties to detect planarity of a given graph.	Evaluating

Coordinator   CSE-HOD

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Course Outcomes Semester -2019-2020   **VII SEMESTER**

S No	Course Name With Course Code	CO NO	Course Outcomes	Taxonomy
1	Compiler Construction (PC701CS)	PC701CS.1	Create Lexical rules and grammars for a given language	Creating
		PC701CS.2	Generate Scanners and Parsers from declarative specifications	Creating
		PC701CS.3	Describe an Abstract syntax tree for a small language	Understanding
		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	Distributed Systems (PC702CS)	PC702CS.1	Describe the problems and challenges associated with distributed systems.	Understanding
		PC702CS.2	Implement small scale distributed systems	Creating
		PC702CS.3	Understand design trade-offs in large-scale distributed systems	Understanding
		PC702CS.4	Understand the general properties of networked communication necessary for distributed systems programming in clusters and on the Internet.	Understanding
		PC702CS.5	Employ and create common paradigms for easing the task of distributed systems programming and able to clearly elucidate their benefits, drawbacks, and limitations	Creating
		PC702CS.6	Identify the security challenges faced by distributed systems programs and able to select appropriate security solutions to meet the needs of commonly encountered distributed programming scenarios.	Applying
3	Information Security(PC703CS)	PC703CS.1	Explain the Roles of IS professionals and Demonstrate the need of IS and various phases in Security SDLC.	Understanding
		PC703CS.2	Identify types of threats and attacks to information.	Applying
		PC703CS.3	Determine various laws related to IS and risk management in IS.	Evaluating
		PC703CS.4	Understand the types of Intrusion detection systems and secure software architectures.	Understanding
		PC703CS.5	Illustrate cryptography algorithms and mitigate attacks on Crypto systems.	Understanding
		PC703CS.6	Compile technical aspects of implementation and maintenance of information security.	Creating

S No	Course Name With Course Code	CO NO	Course Outcomes	Taxonomy
4	Data Mining Lab (PC704CS)	PC704CS.1	Define knowledge discovery process and identify different kinds of data that can be mined.	Remembering
		PC704CS.2	Illustrate various operations of data ware house design.	Understanding
		PC704CS.3	Understand association rules for mining frequent patterns.	Analyzing
		PC704CS.4	Apply Eager & Lazy Classification methods and estimate accuracy of different models.	Creating
		PC704CS.5	Distinguish clustering algorithms and evaluate the performance.	Applying
		PC704CS.6	Explore recent trends in data mining to solve real world problems	Analyzing
5	Entrepreneurship (OE 701ME)	OE701ME.1	Understand Indian Industrial Environment, Entrepreneurship and Economic growth, Small and Large Scale Industries, Types and forms of enterprises.	Understanding
		OE701ME.2	Identify the characteristics of entrepreneurs, Emergence of first generation entrepreneurs, Understand and Practice the conception and evaluation of ideas and their source and choice of technology.	Applying
		OE701ME.3	Understand and Practice the principles of project formulation, analysis of market demand, Financial and profitability analysis and Technical analysis and evaluate the technical feasibility and financial viability of a project.	Understanding
		OE701ME.4	Understand and Apply the concepts of Project Management during construction phase, project organization, project planning and control using CPM, PERT techniques.	Understanding
		OE701ME.5	Understand and Practice the Behavioral aspects of entrepreneurs, Leadership concepts and models, values and attitudes and motivation aspects.	Understanding
		OE701ME.6	Understand and Apply Time Management, various approaches of time management, urgency addiction and time management matrix.	Understanding
6	Road Safety Engineering (OE702CE)	OE 702CE.1	Demonstrate about road accidents and its study objectives. Prepare accident investigation reports and database based on data collected.	Understanding
		OE 702CE.2	Apply design principles for roadway geometrics improvement with various types of traffic safety appurtenances/tools	Applying
		OE 702CE.3	Explain the road safety design operations, counter measures & characteristics to manage traffic including incident management	Understanding
		OE 702CE.4	Illustrate the concept of Road Safety Auditing its principles, procedures and code of good practice and checklists	Understanding
		OE 702CE.5	Explain about design and working principles of road signs and traffic signals	Understanding
		OE 702CE.6	Describe applications of ITS in effectively managing the traffic incidents.	Understanding

S No	Course Name With Course Code	CO NO	Course Outcomes	Taxonomy
7	Compiler Construction Lab (PC751CS)	PC 751 CS.1	Develop hand written lexical analyzers or scanners for a sample C code.	Creating
		PC 751 CS.2	Apply the knowledge of LEX to develop a C scanner.	Applying
		PC 751 CS.3	Develop hand written top down parsers like recursive descent parser and construct first and follow sets for a given grammar.	Applying
		PC 751 CS.4	Explain hand written shift reduce parser for a given grammar.	Understanding
		PC 751 CS.5	Apply the knowledge of YACC to syntax directed translations for generating intermediate code – 3 address code.	Applying
		PC 751 CS.6	Estimate and Optimize target code.	Evaluating
8	Distributed Systems Lab (PC752CS)	PC 752 CS.1	Write programs that communicate data between two hosts	Creating
		PC 752 CS.2	Configure NFS	Creating
		PC 752 CS.3	Use distributed data processing frameworks and mobile application tool kits	Applying
		PC 752 CS.4	Deploy and develop scalable compute model using Distributed Storage	Creating
		PC 752 CS.5	Develop full stack application using Using Map Reduce model.	Creating
		PC 752 CS.6	Develop a end to end application using Android SDK	Creating
9	Data Mining Lab (PC753CS)	PC753CS.1	Apply data preprocessing techniques.	Applying
		PC753CS.2	Apply Frequent Item-set Mining methods to generate association rules.	Applying
		PC753CS.3	Identify and perform appropriate classification for the given datasets.	Understanding
		PC753CS.4	Categorize and apply appropriate clustering for the given dataset.	Analyzing
		PC753CS.5	Evaluate models/algorithms with respect to their accuracy.	Evaluating
		PC753CS.6	Construct a data mining solution to a practical problem.	Creating
10	Project Work-I (PW761CS)	PW761CS.1	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems	Understanding
		PW761CS.2	Evaluate different solutions based on Economic and Technical feasibility	Evaluating
		PW761CS.3	Effectively plan a project and confidently perform all aspects of project.	Analyzing
		PW761CS.4	Demonstrate effective written and oral communication skills	Understanding
		PW761CS.5	Undertake problem identification, formulation and solution	Creating
		PW761CS.6	Plan, analyze, design and implement a software project or gather knowledge over the field of research.	Creating

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Course Outcomes Semester -2019-2020   **VIII SEMESTER**

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
1	Embedded System (PE831CS)	PE831CS.1	Explain the basics of embedded systems design and development flow	Understanding
		PE831CS.2	Explain about the Embedded System Development Environment	Understanding
		PE831CS.3	Develop structured, well commented, understandable programs in Embedded C	Creation
		PE831CS.4	Compare traditional Operating System with Real Time Operating System in regards of multitasking , synchronization and scheduling	Understanding, Analyzing
		PE831CS.5	Explain the real time inter process communication	Understanding
		PE831CS.6	Analyze the working of VxWorks in Embedded RTOS	Analyzing
2	Cloud Computing (PE842 CS)	PE842CS.1	Explain the key dimensions of the challenge of Cloud Computing. Understand the architecture and concept of different cloud models IaaS, PaaS, SaaS	Understanding
		PE842CS.2	Apply Scaling, Capacity Planning, Load Balancing and File System and Storage in the Cloud, issues of cloud computing.	Applying
		PE842CS.3	Make use of suitable Virtualization concept, Create Virtual Machine images and deploy them on Cloud.	Applying
		PE842CS.4	Identify security and compliance issue in cloud.	Analyzing
		PE842CS.5	Evaluate Assessment of economics, financial, and technological implications for selecting cloud computing for own organization.	Evaluating
		PE842CS.6	Design different workflows according to requirements and apply map reduce programming model. Create combinatorial auctions for cloud resources and design scheduling algorithms for computing clouds.	Creating

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
3	Machine Learning (PE833CS)	PE833CS.1	Explain the strengths and weaknesses of many popular machine learning approaches	Understanding
		PE833CS.2	Identify machine learning techniques suitable for a given problem	Understanding and Analyzing
		PE833CS.3	Recognize and implement various ways of selecting suitable model parameters for different machine learning techniques	Creating
		PE833CS.4	Apply Dimensionality reduction techniques.	Applying
		PE833CS.5	Survey different clustering algorithms ,Analyze measures and outliers.	Analyzing
		PE833CS.6	Design and implement various machine learning algorithms in a range of real-world applications	Creating
4	Human Computer Interaction (PE843CS)	PE843CS.1	Describe different types of interactive environments and interaction styles	Understanding
		PE843CS.2	Understand the user interface design process and the need for user-centred design	Understanding
		PE843CS.3	Describe techniques for developing prototypes of user interfaces and evaluation of user interfaces	Understanding
		PE843CS.4	Create an appropriate usability test plan	Creating
		PE843CS.5	Understand the human and technical issues involved in the usage of text, icons and colours in user interfaces.	Understanding
		PE843CS.6	Analyze the working of developing desing issues in interaction process	Analyzing
5	Software Quality and Testing (PE823CS)	PE 823 CS.1	Describe the role of quality assurance activities in the software process	Understanding
		PE 823 CS.2	Compare several process improvement models such as CMM, CMMI, PCMM, and ISO9000	Analyzing
		PE 823 CS.3	Understand several process metrics for assessing and controlling a project	Understanding
		PE 823 CS.4	Describe how available static and dynamic test tools can be integrated into the software development environment	Understanding
		PE 823 CS.5	Create Step for Software Testing Process Overview, Assess Project Management Development Estimate and Status, Develop Test Plan, Requirements Phase Testing, Design	Creating
		PE 823 CS.6	Apply Automated Testing Tools, Load Runner, Win Runner and Rational Testing Tools, Java Testing Tools, JMetra, JUNIT and Cactus	Applying

S No	Course Name with Course Code	CO NO	Course Outcomes	Taxonomy
6	Project Work-II (PW961CS)	PW761CS.1	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems	Understanding
		PW761CS.2	Evaluate different solutions based on Economic and Technical feasibility	Evaluating
		PW761CS.3	Effectively plan a project and confidently perform all aspects of project.	Analyzing
		PW761CS.4	Demonstrate effective written and oral communication skills	Understanding
		PW761CS.5	Undertake problem identification, formulation and solution	Creating
		PW761CS.6	Plan, analyze, design and implement a software project or gather knowledge over the field of research.	Creating