DEPARTMENT OF COMPUTER ENGINEERING

SE:III SEM (CBCS)

Subject: Applied Mathematics III (CSC301)

CO1. Understand the concept of laplace transform and Find Laplce Transform of functions using the properties .

CO2. Find Inverse Laplace Transform using properties and Convolution Theorem and apply LaplaceTransform to find solution of Ordinary Differential Equation.

CO3. Expand periodic functions using Fourier series and Complex form of Fourier series and understand the concept of Half range sine and cosine series,orthogonal and orthonormal functions

CO4. Understand the concept of complex variable,analytic functions,harmonic functions,Billinear Transformation and conformal mapping.

CO5. Find Z- Transform and Inverse Z- Transform of functions using the properties .

CO6. To find correlation coefficient,Rank correlation and Regression lines.

Subject: Digital Logic Design and Anaysis (CSC302)

CO1.To understand different number systems and their conversions.

CO2. To analyze and minimize Boolean expressions.

CO3. To design and analyze combinational circuits.

CO4. To design and analyze sequential circuits

CO5. To understand the basic concepts of VHDL.

CO6. To study basics of TTL and CMOS Logic families

Subject: Discrete Mathematics (CSC303)

CO1. Understand the notion of mathematical thinking, mathematical proofs and to apply them in problem solving.

CO2. Ability to reason logically.

CO3. Ability to understand relations, Diagraph ,lattice and ability to understand use of functions, graphs and their use in programming applications.

CO4. Understand use of groups and codes in Encoding-Decoding

CO5. Apply discrete structures into other computing problems such as formal specification, verification, artificial intelligence, cryptography, Data Analysis and Data Mining etc.

CO6. Work in a team/group and enhance communication Skill

Subject: Electronic Circuits and Communication Fundamentals (CSC304)

CO1. To understand the use of semiconductor device in circuit and analyse them.

CO2. To understand the importance of osillators and power amplifiers

CO3. To understand basic concept of Operational amplifiers and there applications.

CO4. To understand fundamental concept of electronic communication

CO5. To apply knowledge of electronic devices and circuits to communication applications.

CO6. To study basic concept of information theory.

Subject: Data Structures (CSC305)

CO1. Explain and analyze various linear and non linear data structure structures like stacks , queues , linked list etc.

CO2. Implement data structures to handle operations like searching, insertion, deletion, traversing mechanism etc.

CO3. Implement and analyze various sorting techniques.

CO4. Implement and analyze various searching techniques.

CO5. Apply the Data Structure concepts in various domain like DBMS, OS, and compiler

CO6. Design and implement a system to a given real life problem using appropriate data structure and algorithm based on the desired needs and realistic constraints

Subject: Digital System Lab (CSL301)

CO1. Understand the basics of various digital components.

CO2. Understand the principles of design of combinational logic and sequential logic circuits using basic components.

CO3. Recognize the importance of digital systems in computer architecture.

CO4. Design and simulate the basic digital circuit.

Subject: Basic Electronics Lab (CSL302)

CO1. Understand the basics of various semiconductor devices, electronic components and instruments.

CO2. Understand the working of electronic circuits using components

CO3. Recognize the importance of electronic circuits in electronic communications.

CO4. Study the fundamental concepts of various modulation

Subject: Data Structures Lab (CSL303)

CO1. Students will be able to implement various linear and nonlinear data structures.

CO2. Students will be able to handle operations like insertion, deletion, searching and traversing on various data

Subject: OOPM (JAVA) Lab (CSL304)

CO1. To apply fundamental programming constructs.

CO2. To illustrate the concept of packages, classes and objects.

CO3. To elaborate the concept of strings, arrays and vectors.

CO4. To implement the concept of inheritance and interfaces.

CO5. To implement the notion of exception handling and multithreading.

CO6. To develop GUI based application.

DEPARTMENT OF COMPUTER ENGINEERING

SE : III SEM (CBGS)

Subject: Applied Mathematics III (CSC301)

CO1. Demonstrate all topics like Laplace Transform, Fourier Series, Complex variable, Z-Transform

CO2. Identify, formulate and solve the problems of related topics

CO3. Show the impact of understanding of engineering mathematics

CO4. Participitate in the competitive exam GATE, GRE or UPSC

Subject: Object Oriented Programming Methodolgy (CSC302)

CO1. Students will be able to solve computational problems using basic constructs like if-else, control structures, array, strings.

CO2. Student can understand how to model real world scenario using class diagram.

CO3. Students will exhibit communication between 2 objects using sequence diagram

CO4. Students will be able to implement relationships between classes.

CO5. Students will be able to demonstrate various collection classes.

CO6. The students will be able to demonstrate programs on exceptions, multithreading and applets.

CO7. The student will learn the use oop concept i.e data abstraction & data hiding, encapsulation, inheritance, polymorphism.

Subject: Data Structures (CSC303)

CO1. Student should be able to explain different linear and non linear data structure structures like stacks , queues , linked list etc. and its application

CO2. Student should be able to implement data structures to handle operations like searching, insertion, deletion, traversing mechanism etc.

CO3. Student should understand organization of files and its types

CO4. Student should understand logic and implement different sorting algorithms and searching techniques

CO5. Student will be able to choose appropriate data structure as applied to specified problem definition .

CO6. Students will be able to apply concepts of Data Structures and Algorithm to solve real world problem

CO7. Student will be able to design a system to a given real life problem that meets the desired needs and relatistic constraints

Subject: Digital Logic Design and Analysis (CSC304)

CO1. Student should be able to perform number conversion and arithmetic operations in radix r. (mapped to student outcome SO-a)

CO2. Student should be able to detect and correct errors in given data stream.(mapped to student outcome SO-a)

CO3. Student should be able to design solution by identifying appropriate data structure to solve a problem. (SO-e)

CO4. Student should be able to design combinational circuit and sequential circuit for a given example. (mapped to student outcome SO-e)

CO5. Construct, test and debug digital circuits using VHDL. (mapped Student should be able to reduce given logical expression using various techniques such as K-map,QM, Boolean laws etc. (mapped to student outcome SO-e)

CO6. Construct, test and debug digital circuits using VHDL. (mapped to student outcome SO-k)

CO7. Students will be able to implement simulation of given real world example.

Subject: Discrete Structures (CSC305)

CO1. Students will be able to learn the basics of discrete mathematics (set theory & logic) and build their own logic

CO2. Students will be able to understand the properties of relation,digraphs , lattice , functions and their types

CO3. Students will be able to use defination of functions in generating & recurring functions

CO4. Students will be able to understand graphs,trees & its their types and applicability

CO5. Students will be able to understand varied algebraic structures & their applicability

Subject: ECCF (CSC306)

CO1. Ability to understand and use semiconductor devices in circuits.

CO2. Ability to understand field effect devices and carry out their DC analysis.

CO3. Ability to understand concept of feedback and oscillations.

CO4. Ability to use operational amplifier in various applications.

CO5. Ability to understand concept of phase lock loop and their use communication applications.

CO6. Ability to understand fundamental concepts of communication.

SE : IV SEM (CBGS)

Subject: Applied Mathematics III (CSC401)

CO1.Matrix theory, and it"s application to find the matrix function. Present methods of computing and using Eigen values and Eigen vectors.

CO2.Set up and directly evaluate contour integrals Cauchy"s integral theorem and formula in basic and extended form. Present Taylor and Laurent"s series to find singularities zero"s and poles also presents residues theory

CO3.Theory of probability, Baye"s Theorem, Expectation and Moments and it"s application.

CO4.Probability distribution such as Binomial, Poisson and Normal distribution with their properties.

CO5.Sampling theory and it"s application for small and large sample and Optimization techniques.

CO6.Apply the concept of Correlation and Regression to the engineering problems.

Subject: Analysis of Algorithm (CSC402)

CO1.Calculate time complexity and space complexity of an algorithm.

CO2.Explain different types of algorithms- divide and conquer problems, greedy method problems, dynamic programming problems & backtracking problems

CO3.Analyze different divide and conquer problems, greedy method problems, dynamic programming problems & backtracking problems.

CO4.Analyze different string matching algorithms.

CO5.Select appropriate problem solving strategies to solve a given problem.

CO6.Implement different types of algorithms- D&C, greedy, dynamic programming, backtracking algorithms in C

Subject: Computer Organization & Architecture (CSC403)

CO1.Ability to explain basic structure of computer , control unit operations,memory organisation and I/O organizations.

CO2.Ability to perform computer arithmetic operations.

CO3.Ability to analyse the components of ALU and design the ALU using simulator.

CO4.Ability to conceptualize instruction level parallelism.

CO5.Ability to develop good communication skills and team work through active learning strategies and seminars on advanced topics of COA

CO6.Ability to acheive sense of accomplishment on the computer design when given an opportunity to use real hardware.

Subject: Data Base Management Systems (CSC404)

CO1.Student should be able to describe data models,schemas in DBMS and understand the features of database management systems and relational database.

CO2.Student should be able to constructs queries in SQL -the standard language of relational databases.

CO3.Student should be able to understand the functional dependencies and design of the database

CO4.Student should be able to understand the concept of transaction and constuct evaluation tree for query processing.

CO5.student should be able to develop good presentation skills

CO6.Students should be able to apply knowledge individually and come to a common consensus using discussion

Subject: Theoretical Computer Science (CSC405)

CO1.Understanding of Power and Limitations of theoretical models of Computation.Introduce students to the theory; the theory of formal languages and grammars;mathematical foundations of computation including automata

CO2.Ability to compare different types of languages and machines and Ability to describe and transform regular expressions and grammars.

CO3.Understand basic properties of deterministic and nondeterministic finite automata and construct the coresponding Automatas

CO4.Ability to construct pushdown automata and the equivalent context free grammars,Understand basic properties of Turing machines and computing with Turing machines

CO5.Ability to develop good communication skills and teamwork

CO6.Ability to develop machines which can efficiently solve problems using an algorithm.

Subject: Computer Graphics (CSC406)

CO1. Student should be able to understand the basic concepts of Computer Graphics

CO2. Student should be able to explore the working principle, utility of various input/outputdevices and graphical tools.

CO3. Student should be able to demonstrate various algorithms for drawing output primitives and filling of basic objects and their comparative analysis.

CO4. Student should be able to apply Geometric transformations, viewing and clipping on graphical objects.

CO5. Student should be able to explore solid model representation techniques and projections.

CO6. Student should be able to understand visible surface detection techniques and illumination models.

CO7. Student should be able to develop communication and team work through group seminars on advanced topics.

DEPARTMENT OF COMPUTER ENGINEERING
TE : V SEM (CBGS)

Subject: Microprocessor (CPC501)

CO1. Understand different types of signals and systems and its memory organization

CO2. Designing of 8086 mp layout and implementing it on hardware kits.

CO3. Write programs to run on 8086 microprocessor based systems.

CO4. Design system using memory chips and peripheral chips for 16 bit 8086 Microprocessor.

CO5. Devise techniques for faster execution of instructions, improve speed Of operations and enhance performance of microprocessors.

CO6. Interfacing 8086 with 8259.
CO7. Familiar with the concept of initial security issues.

CO8. Deliver seminars for topics related to characteristics of microprocessors and its real time applications.

CO9. Designing and writing codes with assembly language, to be familiar microprocessor system design. Using microprocessor simulator kits.

CO10. To understand the basics of assembly language and get into the core of kernel level programming.

Subject: Operating Systems (CPC502)

CO1. Appreciate the role of operating system as System software.

CO2. Compare the various algorithms and comment about performance of various algorithms used for management of memory , CPU scheduling, File handling and I/O operations

CO3. Apply various concept related with Deadlock to solve problems related with Resources allocation, after checking system in Safe state or not.

CO4. To appreciate and apply Process synchronization techniques towards increasing throughput of system

CO5. Describe the various Data Structures and algorithms used by Different Oss like Windows XP , Linux and Unix pertaining with Process , File , I/O management.

CO6. To control the behavior of OS by writing Shell scripts.

Subject: Structured and Object Oriented Analysis and Design(CPC503)

CO1. Student should be able to understand and apply techniques to get the system requirement and present it in standard format

CO2. Student should be able to apply key modelling concepts to both the traditional structured approach and the object oriented approach

CO3. Student should able to construct sample system following design methodology.

CO4. Student will be able to analyse a system to a given real life problem that meets the desired needs and relatistic constraints

CO5. Student will be able to develop prototype for given real life problem that meets the desired needs and relatistic constraints

Subject: Computer Networks (CPC504)

CO1. To educate concepts, vocabulary and techniques currently used in the area of computer networks.

CO2. To study protocols, network standards, the OSI model, IP addressing, cabling, networking components, and basic LAN design.

CO3. To experience the Designing and Meaning of Communication protocols while getting a good exposure of TCP/IP Protocol Suite.

CO4. To accumulate existing state-of-the-art in network protocols, architectures, and applications.

CO5. To understand various application layer protocols and its applications in client / server environment

CO6. Should be able to draw a basic design of Computer Network (Internet Protocol Address Calculation

Subject: Web Technologies Laboratory(CPL501)

CO1. Student will be able to to provide students an overview of the concepts Web Technologies, and HTML

CO2. Student will be able to define a CSS and unstaring its purpose different syntax and types of CSS.

CO3. Student will be able to define client side and server side scripting and use PHP and Java script

CO4. Students will be able to guse editors like Komposer for developng the web pages

CO5. Students will be able to create XML file for storage and retrieval of information.

CO6. Students will be able to design an Application using above studied technologies

Subject: Business Communication and Ethics (CPL502)

CO1. Student will be able to communicate effectively in both verbal and written form and demonstrate knowlwdge of professional and ethical responsibilities

CO2. Student will be able to participate and succeed in campus placements and competitive examination like GATE , CET.

CO3. Student will be able to possess entreprenuial approach and ability for life long learning.

CO4. Students will be able to have education necessary for understanding the impact of engineering solutions on society and demonstrate awareness of contemporary issues.

CO5. Students will be able to prepare impressive resume

CO6. Students will be able to work in a team and understand the nuances of team building and team spirit.

TE : VI SEM (CBGS)

Subject: SPCC (CPC601)

CO1. Identify different system software and Use Lex tool used for generating lexical analyser.

CO2. Write macros as and when required to increase readability and productivity

CO3. Design hand written lexical analyzer & Implement various parser types and use YACC

CO4. Appreciate the role of Operating System functions such as memory management as pertaining to run time storage management

CO5. Appreciate role of Intermediate Code Generation in connection with language designing

CO6. Apply optimization principles on given code

Subject: Software Engineering(CPC602)

CO1. Students will demonstrate basic knowledge in software engineering.

CO2. Students will be able to plan, design, develop and validate the software project.

CO3. Students will be apply advance software methodology to create high quality WebApps.

CO4. Students will have an understanding of impact of sound engineering principles.

Subject: Distributed Databases (CPC603)

CO1. Student should be able to identify limitations of Centralized database with Advance Applications

CO2. Student should be able to design and implement distributed database for enterprise application operations like searching, insertion, deletion, traversing mechanism etc.

CO3. Student should understand Transaction Management and Concurrency cntrol deadlock and recoveryin Distributed Database

CO4. Student should understand Query optimization techniques in Distributed databas

CO5. Student should be able to design solution for heterogeneous database.

CO6. Student should be able to design solution for XML for schema integration

CO7. Students will be able to apply concepts learned in various domains like Big data and Distributed Systems etc.

Subject:Mobile Communication and Computing(CPC604)

CO1. Understand GSM and CDMA Cellular architecture.

CO2. Setup and configure wireless access points.

CO3. Use Network Simulator tool to simulate mobile network.

CO4. Implement small android based applications.

Subject: Elective-I- PM (CPE601X)

CO1. Students will be able to demonstrate basic knowledge of project management.

CO2. Students will be able to plan, design, develop and validate the software project.

CO3. Students will be apply advance project management methodology to create high quality products.

CO4. Students will be able to develop project management and team building skills

Subject: Network Programming Laboratory (CPL601)

CO1. Configure Linux Network

CO2. View and edit routing tables and Configure Linux Router

CO3. Configure Linux FTP server and   web server

CO4. Install and Configure DNS server and establishing network connections using Socket Programming

CO5. To Understand and Apply the knowledge of Networking Concepts on Installation and Configuration thus enabling the students to gain experience in implementation of mini project

CO6. To Acquire the necessary confidence to carry out main project in the final year

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DEPARTMENT OF COMPUTER ENGINEERING

BE : VII SEM (CBGS)

Subject: Digital Signal Processing (CPC701)

CO1.Student should be able to perform some basic mathematical calculations on Signals.

CO2.Student should be able to understand the concept of DT Signal and perform signal manipulation (mapped to student outcome

CO3.Students should be able to develop Image Processing and Speech recognition applications.

CO4.Students should be able to understand and perform different types of processing on signals.

CO5.Students should be able to apply digital signal processing to fields of character recognition etc

CO6.Students should be able to perform DSP on real time systems.

CO7.Students should be able to know how DSP is used in satellites.

Subject: Cryptography and System Security (CPC702)

CO1.Explain and apply the principles and practices of cryptographic techniques.

CO2.Explain a variety of generic security threats and vulnerabilities, and identify & analyze particular security problems for given application.

CO3Apply security techniques and technologies in solving reallife security problems in practical systems.

CO4.Apply appropriate security techniques to solve security problem

CO5.Design security protocols and methods to solve the specific security problems.

CO6.Explain current research issues and directions of security.

Subject: Artificial Intelligence (CPC703)

CO1.Introduce the basic concepts of AI and the detailed understanding of agents

CO2.Differentiate between conventional and AI problems and the various algorithms associated with the Problem Solving.

CO3.Explain the various ways of representing knowledge and the importance of chaining in AI.

CO4.Apply appropriate AI algorithms for problem solving.

CO5.Explain uncertain knowledge and its representation.

CO6.Implement simulation of given real world example.

Subject: Elective-II-IP (CPE7042X)

CO1.Student should be able to understand the fundamental concepts of Digital Image Processing and Video Processing

CO2.Student should be able to understand basic image enhancement and segmentation techniques.

CO3.Student should be able to illustrate Image Transform calculations mathematically and develop fast transform

CO4.Student should be able to Perform Binary Image Processing operation.

CO5.Student should be able to learn Image Compression and Decompression Techniques

CO6.To devlop skills of using recent open source image processing software like scilab,octve, opencv, for solving problems and devlop mini project.

Subject:Network Threats and Attacks Laboratory (CPL701)

CO1.Use network-based tools for network analysis
CO2.Use techniques for Network scanning

CO3. Identify network vulnerability

CO4. Use tools to simulate intrusion detection system

CO5. To understand and install a firewall

CO6. To understand and install a firewall

Subject: Project 1 (CPP701)

CO1.Student should be able to identify quality problem on the basis of industry visit,literature survey or current trends

CO2.To define the problem clearly which will have solution that can be applied to solve real world problems.

CO3.Student should be able to formulate the problem which will be specific to certain domain Like machine learning,Data mining ,networking.

CO4.Student should be able to clearly define objective and scope of identified problems

CO5.Student should be able to position their problem based on identification of gap based on literature survey.

BE : VIII SEM (CBGS)

Subject: Data Warehouse and Mining (CPC801)

CO1. Students will be enabled to understand and implement classical models and algorithms in data warehousing and data mining.

CO2. Student should be able to learn how to analyze the data, identify the problems, and choose the relevant models and algorithms to apply.

CO3. Student will further be able to assess the strengths and weaknesses of various methods and algorithms and to analyze their behavior.

CO4. Student should be able to do Conceptual, Logical, and Physical design of Data Warehouses OLAP applications and OLAP deployment

CO5.Student should be able to design solution by classifying unsseen sample.

CO6. Students will be able to Design a data warehouse or data mart to present information needed by management in a form that is usable for management client

CO7.Student will be able to perform data analysis using tools such as R and weka

Subject: Human Machine Interaction (CPC802)

CO1.To design user centric interfaces.

CO2.To design innovative and user friendly interfaces.

CO3.To apply HMI in their day-to-day activities.

CO4.To criticize existing interface designs, and improve them.

CO5.To Design application for social and technical task.

CO6.To design icons for various websites and applications.

Subject: Parallel and distributed Systems (CPC803)

CO1. Student should be able to Apply the principles and concept in analyzing and designing the parallel and distributed system.

CO2. Student should be able to Reason about ways to parallelize problems.

CO3. Student should gain an appreciation on the challenges and opportunities faced by parallel and distributed system

CO4.Student should Understand the middleware technologies that support distributed applications such as RPC, RMI and object based middleware

CO5.. Student should be able to Improve the performance and reliability of distributed and parallel programs

CO6.Develop the distributed applications to offer the services to people at different geographical area.

Subject: Elective-III-Big Data Analytics (CPE803X)

CO1.Student should be able to understand the key issues in big data management and its associated applications in intelligent business and scientific computing.

CO2.Student should be able to acquire fundamental enabling techniques and scalable algorithms like Hadoop,Map Reduce and NoSql in big data analytics

CO3.Student should interpret business models and scientific computing paradigms and apply software tools for big data analytics

CO4.Student should achieve adequate perspectives of big data analytics in variousapplications like recommendar systems,social media applications etc

CO5.Student should be able to apply No SQL Architectural pattern while desiging the data bases for big data management using latest DBMS like cassandra/mongo DB

CO6.Student should apply the community detection techniques on social media like FB and linked in to use it for various purposes such as target marketing

Subject: Project 2 (CPP802)

CO1.Student should be able to identify quality problem on the basis of industry visit,literature survey or current trends

CO2.Student should be able to define the problem clearly which will have solution that can be applied to solve real world problems.

CO3.Student should be able to formulate the problem which will be specific to certain domain Like machine learning,Data mining ,networking.

CO4.Student should be able to clearly define objective and scope of identified problems

CO5.Student should be able toposition their problem based on identification of gap based on literature survey.

CO6.Student should be able to implement project work to which fulfills the defined objectives and scope.

CO7.Student should be able to analyze the result and provide valid conclusions.

CO8.Student should be able to work effectively as an individual or in a team.

CO9.Student should be able to communicate and comprehend their work in the form of report and oral presentation.

Subject: Cloud Computing Lab (CPL801)

CO1.Student will be able to understand overview of the Cloud Computing Architecture and implementation of virtualization of the Cloud Computing and Architecture and different types of Cloud Computing concepts Web Technologies, and HTML

CO2.Student will be able to earn Infrastructure as a Service and implement it by using OpenStack.

CO3.Student will be able to implement os Storage as a service using OWNCLOUD

CO4.Students will be able to implement Identity as a service using Amazon Web Servics

CO5.Students will be able to host a web page using Microsoft Azure

CO6.Students will be able to is student must be able to create own cloud using different features which are learned in previous practices.