Course Outcomes 2018 Scheme

C201: 18MAT31 - TRANSFORM CALCULUS, FOURIER SERIES AND NUMERICAL TECHNIQUES

C201.1	Develop the knowledge of the use of periodic signals and Fourier series to analyze circuits and system communications.
C201.2	Explain the general linear system theory for continuous-time signals and digital signal processing using the Fourier Transform and z-transform.
C201.3	Apply the principles of curve fitting and the most common methods for curve fitting such as linear regression. Outline properties of correlation and compute Karl-Pearson's coefficient of correlation.
C201.4	Employ appropriate numerical methods to solve algebraic and transcendental equations. Apply method of interpolation for prediction and apply numerical integration to calculate definite integrals of analytical functions or experimental data points
C201.5	Apply Green's Theorem, Divergence Theorem and Stokes' theorem in various applications in the field of electro-magnetic and gravitational fields and fluid flow problems. Determine the extremals of functionals and solve the simple problems of the calculus of variations.

C202: 18CS32- DATA STRUCTURES AND APPLICATIONS

C202.1	Understand the concept of arrays, structures and pointers to organize and access data and apply static and dynamic methods for allocating memory to store data
C202.2	Implement stacks and queues using static and dynamic arrays. Apply recursive methods in solving different types of problems
C202.3	Able to use linked lists as data structure and implement different data structures using linked lists
C202.4	Apply the concept of trees in solving different problems and implement binary trees, binary search trees
C202.5	Able to represent the graphs and study and implement searching algorithms for graph and understand the concept of hashing

C203: 18CS33-ANALOG AND DIGITAL ELECTRONICS

C203.1	Design and analyze the application of Analog circuits using photo devices, BJT, power supply and regulator IC, Op-amp and to demonstrate the working of A/D & D/A conversion circuits.
C203.2	Simplification of Boolean expression using different methods.
C203.3	Design various combinational circuits and identify, recover hazards in circuits.
C203.4	Describe combinational circuits using VHDL and understand working of different types Latch's and Flip Flops.
C203.5	Design different types of Registers and Counters using Flip-Flops.

C204:18CS34- COMPUTER ORGANIZATION

C204.1	Able to describe basic structure of Digital computer demonstrating the basic design principles of assembly language
C204.2	To Demonstrate the structure and functioning of input / output organization of a digital Computer
C204.3	To understand the features of basic memory organization of a digital computer
C204.4	To understand the number representation and implementation of integer arithmetic operations in a digital computer
C204.5	To understand the basic processing units and the basic pipelining concepts

C205: 18CS35- SOFTWARE ENGINEERING

C205.1	Understand the basics of software engineering processes, process models and to write software requirement specification document.
C205.2	Understand object oriented development model
C205.3	Understand the various system models and to use the object oriented design principles for a given system.
C205.4	Understanding the software evolution and testing methods.
C205.5	Understand project planning and quality management of the software

C206: 18CS36- DISCRETE MATHEMATICAL STRUCTURES

C206.1	To Determine the correctness of an argument using propositional, predicate logic and truth tables. Techniques for constructing the proofs for validating the statements.
C206.2	To apply induction hypotheses to solve problems. Demonstrate the ability to solve problems using principles of counting in the context of discrete probability.
C206.3	Apply relations and function concept to solve real world problems.
C206.4	Able to identify different physical situations in which recurrence relations and principle of inclusion-exclusion can be used to solve problems.
C206.5	Able to define different terminologies of graphs and trees, apply algorithms or theorems of graph theory to solve various graph theoretic problems.

C207: 18CSL37- ANALOG AND DIGITAL ELECTRONICS LABORATORY

C207.1	Illustrate the usage of analog components and circuits including Operational Amplifier, Timer.
C207.2	Able to Design and Implement various combinational logic circuits such as multiplexer and various sequential Logic circuits such as flip flops, Counters.
C207.3	Able to use Multisim simulation package for Analog circuits.
C207.4	Able to use Xlinx simulation package for Digital circuits.

C208:18CSL38- DATA STRUCTURES LABORATORY

C208.1	Execute programs to represent arrays and perform operations like insert, delete and display the elements, using suitable algorithm search for a string pattern, implement stack and its operations, using stack convert infix to postfix, evaluate a postfix expression and solution for tower of Hanoi problem
C208.2	Design, develop and execute programs to implement Circular queue operations, singly linked list, doubly linked list, singly circular linked list to represent polynomials, evaluate the polynomial and to add two polynomials
C208.3	Implement Binary Search Tree, traverse in preorder, post-order and in-order, implementation of graphs using suitable data structures and to identify reachable nodes using BFS/DFS method
C208.4	Implement hashing using suitable data structures

C210:18CS42- DESIGN AND ANALYSIS OF ALGORITHMS

C210.1	Able to analyze mathematically the given complex problems and learn to apply various computation problem solving techniques and analyze the complexity of the same and learn the various fundamental data structures.
C210.2	Apply and analyze divide and conquer approaches and decrease and conquer approaches in solving the problems
C210.3	Able to choose the appropriate algorithmic design technique like greedy method, transform and conquer approaches and compare the efficiency of algorithms to solve the givenappropriate problem.
C210.4	Able to apply and analyze dynamic programming approaches
C210.5	Able to apply and analyze Backtracking, Branch and bound, approximation algorithms tosolve complex problems and to describe P,NP and NP-Complete problems

C211:18C43- OPERATING SYSTEMS

C211.1	Describe the basic organization of computer system, services an operating system provides, various ways of structuring an operating system and able to understand process & thread management.
C211.2	Compare the common algorithms used for scheduling various tasks in operating systems and formulate solutions for critical section problem
C211.3	Understand the various methods of handling deadlocks and various memory management Schemes
C211.4	Understand the concept of virtual memory and various file implementation techniques
C211.5	Understand the concept of secondary storage structures and Linux operating system

C212:18CS44- MICROCONTROLLER AND EMBEDDED SYSTEMS

C212.1	Describe the architectural features of ARM microcontroller including registers, pipeline, interrupts and exceptions
C212.2	Write ARM programming using various assembly language instructions
C212.3	Understand the basic hardware components of embedded systems and their application areas
C212.4	Describe the hardware software co-design and firmware design approaches
C212.5	Explain the need of real time operating system for embedded system applications

C213:18CS45- OBJECT ORIENTED CONCEPTS

C213.1	Describe the basic object oriented programming concepts, introduce the concepts in C++ programs and differentiate between procedure oriented and object oriented programming.
C213.2	Apply the basic Java language constructs and object oriented language principles to create, debug and run programs with Java Development Kit (JDK) environment.
C213.3	Develop Java programs introducing Classes, Inheritance and Exception Handling mechanisms to solve real world problems.
C213.4	Demonstrate the creation & use of Packages & Interfaces and incorporate thread concepts to develop multithreaded programs in Java.
C213.5	Develop simple GUI interfaces for a computer program using event handling mechanisms and swing components in Java.

C214:18CS46- DATA COMMUNICATION

C214.1	Able to explain the basic concepts of data communications, types of network topologies, enumerating the layers of the TCP/IP & OSI model.
C214.2	Ability to identify the entities involved in physical layer including data, signals and signal conversion.
C214.3	Ability to explain concept of signal transmission, switching and error handling in data communication.
C214.4	Able to explain functions of data link layer protocols, MAC sub layer protocols and network layer protocols.
C214.5	Able to understand the concepts of wired and wireless LANs, Ethernet protocols and IEEE 802.xx standards.

C215:18CSL47- DESIGN AND ANALYSIS OF ALGORITHMS LABORATORY

C215.1	Ability to use simple data structures like arrays, object oriented programming concepts like class and objects, inheritance and to implement programs by applying concepts of multithreading and exception handling.
C215.2	Ability to apply divide and conquer technique for sorting problems and also to analyze runtime complexity.
C215.3	Ability to apply greedy and dynamic programming method to solve Knapsack problem, travelling salesperson problem etc. Implement a variety of graph related algorithms such as Prims, Kruskal to find minimum cost spanning tree and Dijikstra's, Floyd's algorithm to solve shortest path problems.
C215.4	Ability to apply back tracking design techniques to solve Hamilton cycle in connected graph and subset sum problem.

C216:18CSL48- MICROCONTROLLER AND EMBEDDED SYSTEMS LABORATORY

C216.1	Use KEIL µVision-4 Integrated Development Environment and Flash Magic Tool to write executable ARM7 TDMI programs
C216.2	Write an Executable ARM logic for the given problem statement.
C216.3	Interpret the various components of ARM7 TDMI/LPC2148 Evaluation Board to build ARM Programs.
C216.4	Demonstrate an executable ARM logic for the given requirement through the ARM7 TDMI/LPC2148 Evaluation Board

C301:18CS51- MANAGEMENT AND ENTREPRENEURSHIP FOR IT INDUSTRY

C301.1	Understand the meaning, scope, development of management thoughts and to analyze the objectives of planning process, types of organization and staffing.
C301.2	Understand the meaning of directing, Leadership styles, motivation theories, communication and to establish controlling methods.
C301.3	Understand the meaning and function of Entrepreneur, the role of Entrepreneur in the economic development and to identify business opportunities along with feasibility studies.
C301.4	Understand the procedure to prepare project report and to study Enterprise Resource Planning.
C301.5	Understand the Micro and small enterprise and to Infer the importance of intellectual properties rights and relate the institutional support.

C302:18CS52- COMPUTER NETWORKS AND SECURITY

C302.1	Understand the concepts of various application layer protocols
C302.2	Understand the transport layer services and compare UDP and TCP protocols
C302.3	Understand the various routing algorithms used in network layer
C302.4	Understanding the different network security algorithms and its applications
C302.5	Understand the various network support provided for multimedia data by considering the Quality of Service

C303:18CS53- DATABASE MANAGEMENT SYSTEM

C303.1	Apply fundamentals of database concept and entity relationship model in database applications.
C303.2	Design a database using RDBMS and use this for database applications.
C303.3	Design and develop database and database in Internet Applications.
C303.4	Design database using normalization.
C303.5	Understanding the transaction processing and recovery methods in database.

C304:18CS54- AUTOMATA THEORY AND COMPUTABILITY

C304.1	Apply the Knowledge of theory of computation to design DFSM, NFSM for a given problem
C304.2	Able to write Regular Expression and Regular Grammar for a given Language.
C304.3	Able to write Context free grammar and Design PDA for given problem.
C304.4	Apply the properties of CFL in Language processing and Designing OF Turing Machine models for the given Language.
C304.5	Understand the variants of Turing Machine and Classify the problems with respect to different model of computation.

C305:18CS55- Application Development using Python

C305.1	Demonstrate proficiency in handling flow control statements and creation of functions in Python.
C305.2	Identify the methods to create and manipulate lists, tuples, strings and dictionaries in Python.
C305.3	Discover the commonly used operations involving regular expressions and file system in Python.
C305.4	Implement the basic Object Oriented Programming concepts in Python.
C305.5	Determine the need for scraping websites and working with CSV, JSON and other file formats in Python

C306:18CS56- UNIX Programming

C306.1	Explain Unix Architecture, File system and use of Basic Commands
C306.2	Illustrate Shell Programming and to write Shell Scripts
C306.3	Categorize, compare and make use of Unix System Calls
C306.4	Build an application/service over a Unix system,
C306.5	Understand UNIX Process,IPC and Signals

C307:18CSL57- COMPUTER NETWORK LABORATORY

C307.1	Implement the network based messaging application and understand the impact of network parameters on performance
C307.2	Demonstrate the working of different concepts of networking
C307.3	Implement, analyze and evaluate networking protocols in NS2 / NS3
C307.4	Implement, analyze and evaluate wireless networking protocols in NS2 / NS3

C308:18CSL58- DBMS LABORATORY WITH MINI PROJECT

C308.1	Understand the basic knowledge in database concepts, technology and to groom into well informed database application developers
C308.2	Strong practice in SQL programming through a variety of database problems.
C308.3	Able to demonstrate the working of different concepts of DBMS
C308.4	Implement, analyze and evaluate the project developed for an application

C309:18CS61- System Software and Compilers

C309.1	Understanding the design of assemblers for a hypothetical machine SIC& SIC/XE and basic loader function
C309.2	Describe the lexical analysis and their importance
C309.3	Describe the role of parsers and different parsing techniques such as top down parsers, bottom up parsing
C309.4	Design and develop different system software using LEX and YACC tools
C309.5	Understanding the importance of syntax directed translation, various representation of intermediate codes and issues in code generation

C310:18CS62- Computer Graphics and Visualization

C310.1	Understand the basics of computer graphics and OpenGL
C310.2	Apply the concepts of geometric and viewing transformations on 2D objects
C310.3	Apply the concepts of clipping, 3D viewing and Illumination models
C310.4	Understand three-dimensional Viewing and Visible Surface Detection
C310.5	Determine various inputs to the graphics system and user interactions with it.

C311:18CS63- Web Technology and its Application

C311.1	Able to design the web page using HTML and CSS
C311.2	Construct and visually format tables and create forms using HTML and CSS
C311.3	Able to write Client-Side Scripts using JavaScript and Server-Side Scripts using PHP to design a web page
C311.4	Develop Server-side scripts using the principles of object oriented concepts using PHP
C311.5	Able to design a simple website using various web technologies

C312:18CS641- Data Mining and Data Warehousing

C312.1	Understanding the basics of data warehousing and its modeling approach for data warehouse
C312.2	Understanding the implementation of data warehouse and principals of Data mining
C312.3	Understanding the various association rule mining algorithm and evaluation of pattern
C312.4	Apply various classification algorithms for different data set.
C312.5	Apply various clustering algorithms for different data set.

C312:18CS645- Cloud Computing and its Application

C312.1	Explain cloud computing, virtualization technology and its taxonomy.
C312.2	Illustrate architecture, classification of services and cloud models and Aneka cloud platform.
C312.3	Illustrate programming in cloud and high throughput computing.
C312.4	Describe the data intensive computing and Mapreduce model.
C312.5	Describe platforms for development of cloud applications and List the application of cloud.

C313:18CS652- Introduction to Data Structures and Algorithms

C313.1	Understand the logic, develop the algorithm and write the flow chart and pseudo-code for the given problem
C313.2	Understand the concept of arrays, structures and pointers to organize and access data and apply static and dynamic methods for allocating memory to store data
C313.3	Implement stacks and queues using static and dynamic arrays.
C313.4	Able to implement and and traverse Queues and Trees
C313.5	Able to understand the concept of Graphs and implement different Sorting techniques on arrays

C313:18CS653- Programming in Java

C313.1	Describe object-oriented programming and different Data types, Variables, and Arrays in Java programming
C313.2	Develop simple Java programs using operators and control statements
C313.3	Introduce the concepts of Classes and Inheritance in Java programs to solve real world problems.
C313.4	Demonstrate the creation and use of packages, and the concept of exception handling in Java
C313.5	Demonstrate the concept of I/O, Enumeration, type wrapper, Applet and string handling in Java

C314:18CSL66- System Software and Operating System Laboratory

C314.1	Implement and demonstrate Lex Tool.
C314.2	Implement and demonstrate Yacc Tool.
C314.3	Analyse and evaluate different algorithms for CPU scheduling.
C314.4	Evaluate different algorithms required for Memory management, allocation and communicationused in operating system.

C315:18CSL67- Computer Graphics Laboratory with Mini Project

C315.1	Apply line drawing, line clipping algorithm.
C315.2	Design and apply two Dimensional and three dimensional graphics and transformation
C315.3	Apply lighting and shading techniques in computer graphics
C315.4	Create interactive graphics applications using OpenGL

C316:18CSMP68- Mobile Application Development

C316.1	Create, test and debug Android application by setting up Android development environment.
C316.2	Implement adaptive, responsive user interfaces that work across a wide range of devices.
C316.3	Infer long running tasks and background work in Android applications.
C316.4	Demonstrate methods in storing, sharing and retrieving data in Android applications.
C316.5	Infer the role of permissions and security for Android applications