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SJC Institute of Technology, Chickaballapur

Department of Computer Science and Engineering

Course Outcomes [2020 Batch]

3rd Semester Course Outcomes

Transform Calculus, Fourier Series and Numerical Techniques 18MAT31

Course No.	Course Outcomes
C201.1	Employ Laplace transform and inverse Laplace transform in solving differential integral equation arising in network analysis, control systems and other fields of engineering.
C201.2	Demonstrate Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.
C201.3	Make use of Fourier transform and Z-transform to illustrate discrete/continuous function arising in wave and heat propagation, signals and systems.
C201.4	Solve first and second order ordinary differential equations arising in engineering problems using single step and multistep numerical methods.
C201.5	Determine the externals of functional using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

Data Structures and Applications 18CS32

Course No.	Course Outcomes
C202.1	Make use of different types of data structures, operations and algorithms
C202.2	Apply searching and sorting operations on files
C202.3	Employ stack, Queue, Lists, Trees and Graphs in problem solving
C202.4	Implement all data structures in a high-level language for problem solving.

Analog and Digital Electronics 18CS33

Course No.	Course Outcomes
C203.1	Design and analyze application of analog circuits using photo devices, timer IC, power supply and regulator IC and op-amp, basic principles of A/D and D/A conversion circuits and develop the same.
C203.2	Simplify digital circuits using Karnaugh Map, Quine-McClusky, and Petrick & MEV Methods.
C203.3	Design and implement different data processing circuits.
C203.4	Develop simple HDL programs and Designing sequential circuits using flip flops.
C203.5	Design and Develop the registers and counters.

Computer Organization 18CS34

Course No.	Course Outcomes
C204.1	Comprehend the basic organization of computer systems
C204.2	Demonstrate functioning of different sub systems, such as processor, input/output and memory
C204.3	Illustrate hardwired control and micro programmed control, pipeling, embedded and other computing systems
C204.4	Design and analyse simple arithmetic and logical units.

Software Engineering 18CS35

Course No.	Course Outcomes
C205.1	Design a software system, component, or process to meet desired needs within realistic constraints and assess professional and ethical responsibility
C205.2	Function on multi-disciplinary teams
C205.3	Make use of techniques, skills, and modern engineering tools necessary for engineering practice ·
C205.4	Comprehend software systems or parts of software systems

Discrete Mathematical Structures 18CS36

Course No.	Course Outcomes
C206.1	Make use of propositional and predicate logic in knowledge representation and truth verification.
C206.2	Demonstrate the application of discrete structures in different fields of computer science.
C206.3	Solve problems using recurrence relations, relations and generating functions.
C206.4	Application of different mathematical proofs techniques in proving theorems in the courses.
C206.5	Compare graphs, trees and their applications.

Analog and Digital Electronics Laboratory 18CSL37

Course No.	Course Outcomes
C207.1	Select and apply appropriate design equations and methods for circuit design. appropriate design equations / methods to design the given circuit
C207.2	Examine and verify the design of both analog and digital circuits using simulators.
C207.3	Make use of electronic components, ICs, instruments and tools for design and testing of circuits for the given appropriate inputs.
C207.4	Compile a laboratory journal which includes; aim, tool/instruments/software/components used, design equations used and designs, schematics, program listing, procedure followed, relevant theory, results as graphs and tables, interpreting and concluding the findings.

Data Structures and Applications Laboratory 18CSL38

Course No.	Course Outcomes
C208.1	Analyse and Compare various linear and non-linear data structures.
C208.2	Demonstrate the working nature of different types of data structures and their applications.
C208.3	Develop, analyse and evaluate the searching and sorting algorithms.
C208.4	Choose the appropriate data structure for solving real world problems.

4th Semester Course Outcomes

Complex Analysis, Probability and Statistical Methods 18MAT41

Course No.	Course Outcomes
C211.1	Employ the concepts of analytic function and complex potentials to solve the problems arising in electromagnetic field theory.
C211.2	Utilize conformal transformation and complex integral arising in aerofoil theory, fluid flow visualization and image processing.
C211.3	Apply discrete and continuous probability distributions in analyzing the probability models arising in engineering field.
C211.4	Make use of the correlation and regression analysis to fit a suitable mathematical model for the statistical data.
C211.5	Construct joint probability distributions and demonstrate the validity of testing the hypothesis.

Analysis and Design of Algorithms 18CS42

Course No.	Course Outcomes
C212.1	Describe computational solution to well-known problems like searching, sorting etc.
C212.2	Estimate the computational complexity of different algorithms.
C212.3	Devise an algorithm using appropriate design strategies for problem solving.

Operating System 18CS43

Course No.	Course Outcomes
C213.1	Demonstrate need for OS and different types of OS.
C213.2	Apply Suitable techniques for management of different resources.
C213.3	Make use of processor, memory, storage and file system commands.
C213.4	Realize the different concepts of OS in platform of usage through case studies.

Microcontroller and Embedded Systems 18CS44

Course No.	Course Outcomes
C214.1	Comprehend Microprocessor, micro Controllers and ARM processor.
C214.2	Describe the ARM Instructions and Its programming using Assembly language
C214.3	Remember and Understand Embedded system Components Memory, Sensors, Actuators etc.,
C214.4	Employ the embedded system HW & SW Co-design concepts and its paramters
C214.5	Design simple embedded system applications using RTOS and IDE.

Object Oriented Concepts 18CS45

Course No.	Course Outcomes
C215.1	Illustrate the object-oriented concepts.
C215.2	Apply the concepts of inheritance, polymorphism, interfaces and packages for solving problems.
C215.3	Develop programs using the concepts of Multithreading and Exception handling.
C215.4	Design and Develop simple GUI interfaces for a computer program to interact with users using Applets and swings.

Data Communication 18CS46

Course No.	Course Outcomes
C216.1	Explore the various components of data communication.
C216.2	Interpret the fundamentals of digital communication and switching.
C216.3	Compare and contrast data link layer protocols.
C216.4	Summarize IEEE 802.xx standards.

Analysis and Design of Algorithms Laboratory 18CSL47

Course No.	Course Outcomes
C217.1	Design algorithms using appropriate design techniques.
C217.2	Implement a variety of algorithms such assorting, graph related, combinatorial, etc., in a high level language.
C217.3	Analyze and compare the performance of algorithms using language features.
C217.4	Apply and implement learned algorithm design techniques and data structuresto solve real-world problems.

Microcontroller and Embedded System Lab 18CSL48

Course No.	Course Outcomes
C218.1	Develop and debug assembly/C programs for ARM7 (LPC2148) to implement arithmetic and control algorithms.
C218.2	Demonstrate on fixed-width data types, sign/unsigned arithmetic for multi-word arithmetic and storing 32-bit results in RAM.
C218.3	Interface and control peripherals like UART, ADC, DAC, DC motor, stepper motor etc., to drive them reliably.
C218.4	Implement Embedded-C program with timing forADC sampling and waveform generation.
C218.5	Demonstrate interrupt-driven and event-driven solutions.

5th Semester Course Outcomes

Management & Entrepreneurship for IT Industry 18CS51

Course No.	Course Outcomes
C301.1	Explore management, organization, entrepreneur, planning, staffing, ERP and outline their importance in entrepreneurship.
C301.2	Utilize the resources available effectively through ERP.
C301.3	Make use of IPRs and institutional support in entrepreneurship

Computer Networks and Security 18CS52

Course No.	Course Outcomes
C302.1	Explore the principles of application layer protocols.
C302.2	Recognize transport layer services and infer UDP and TCP protocols.
C302.3	Classify routers, IP and Routing Algorithms in network layer.
C302.4	Analyse the Wireless and Mobile Networks covering IEEE 802.11 Standard.
C302.5	Describe Multimedia Networking and Network Management.

Database Management System 18CS53

Course No.	Course Outcomes
C303.1	Identify, analyze, define database objects and Design the ER diagrams for the given real world scenario by enforcing integrity constraints of the RDBMS concepts.
C303.2	Describe and demonstrate the use of relational algebra ,SQL and embedded SQL statements for database manipulation
C303.3	Illustrate normal forms and Apply the appropriate normal forms in designing of the databases
C303.4	Describe the various aspects of transaction processing and concurrency control mechanisms in developing of database applications.

Automata Theory and Compatibility 18CS54

Course No.	Course Outcomes
C304.1	Acquire fundamental understanding of the core concepts in automata theory and Theory of Computation.
C304.2	Learn how to translate between different models of Computation (e.g., Deterministic and Non-deterministic and Software models).
C304.3	Design Grammars and Automata (recognizers) for different language classes and become knowledgeable about restricted models of Computation (Regular, Context Free) and their relative powers
C304.4	Develop skills in formal reasoning and reduction of a problem to a formal model, with an emphasis on semantic precision and conciseness
C304.5	Classify a problem with respect to different models of Computation.

Application Development Using Python 18CS55

Course No.	Course Outcomes
C305.1	Demonstrate proficiency in handling loops and creation of functions
C305.2	Identify the methods to create and manipulate lists, tuples and dictionaries.
C305.3	Discover the commonly used operations involving regular expressions and file system.
C305.4	Interpret the concepts of Object-Oriented Programming as used in Python.
C305.5	Determine the need for scraping websites and working with CSV, JSON and other file formats

UNIX Programming 18CS56

Course No.	Course Outcomes
C306.1	Interpret 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.

Computer Networks Laboratory 18CSL57

Course No.	Course Outcomes
C307.1	Analyze and Compare various networking protocols.
C307.2	Demonstrate the working of different concepts of networking.
C307.3	Implement, analyze and evaluate networking protocols in NS2 / NS3 and JAVA programming.

DBMS Laboratory with Miniproject 18CSL58

Course No.	Course Outcomes
C308.1	Make use of Structured Query Language (SQL) for database creation and manipulation.
C308.2	Demonstrate working principle of different concepts of DBMS.
C308.3	Implement and test the project developed for an application.

6th Semester Course Outcomes

System Software and Compilers 18CS61

Course No.	Course Outcomes
C311.1	Apply the knowledge of System Software such as Assemblers, Loaders to compare the architectures.
C311.2	Analyze the given grammar and design a parser using various approaches.
C311.3	Design and Develop lexical analyzer and parsers using LEX and YACC tools.
C311.4	Apply the knowledge of synthesis phase and analyze the correlation between syntax tree and code generation

Computer Graphics and Visualization 18CS62

Course No.	Course Outcomes
C312.1	Design and implement algorithms for 2D graphics primitives and attributes.
C312.2	Illustrate Geometric transformations on both 2D and 3D objects.
C312.3	Apply concepts of clipping and visible surface detection in 2D and 3D viewing, & Illumination Models.
C312.4	Analyse suitable hardware and software for developing graphics packages using OpenGL.

Web Technology and its Applications 18CS63

Course No.	Course Outcomes
C313.1	Adapt HTML and CSS syntax and semantics to build web pages.
C313.2	Construct and visually format tables and forms using HTML and CSS
C313.3	Develop Client-Side Scripts using JavaScript and Server-Side Scripts using PHP to generate and display the contents dynamically.
C313.4	Apply the principles of object oriented development using PHP.
C313.5	Inspect JavaScript frameworks like jQuery and Backbone which facilitates developer to focus on core features.

Data Mining and Data Warehousing 18CS641

Course No.	Course Outcomes
C314.1	Comprehend the Data Warehouses, Operational Data Stores (ODS) and OLAP characteristics.
C314.2	Employ the data mining concept, application and their usage.
C314.3	Analyze the frequent patterns using association analysis algorithms like apriori, FP-growth etc.
C314.4	Explore the concept of classification, different classification algorithms and their applications.
C314.5	Analyse the concept of clustering and different cluster analysis methods.

Cloud Computing and Its Applications18CS643

Course No.	Course Outcomes
C315.1	Interpret cloud computing, virtualization and classify services of cloud computing
C315.2	Illustrate architecture and programming in cloud
C315.3	Describe the platforms for development of cloud applications and List the application of cloud.

System Software Laboratory 18CSL66

Course No.	Course Outcomes
C316.1	Implement and demonstrate the scanning process using Lex tool.
C316.2	Develop and demonstrate the parsing techniques using YACC tool or C programming.
C316.3	Evaluate different algorithms required for scheduling and deadlock
C316.4	Devise different algorithms required for memory management used in operating system.

Computer Graphics Laboratory with Mini Project 18CSL67

Course No.	Course Outcomes
C317.1	Apply the concepts of computer graphics
C317.2	Implement computer graphics applications using OpenGL
C317.3	Animate real world problems using OpenGL

Mobile Application Development 18CSMP68

Course No.	Course Outcomes
C318.1	Learn and acquire the art of Android Programming
C318.2	Configure Android studio to run the applications.
C318.3	Implement Android's User interface functions
C318.4	Create, modify and query on SQLite database
C318.5	Inspect different methods of sharing data using services

7th Semester Course Outcomes

Artificial Intelligence and Machine Learning 18CS71

Course No.	Course Outcomes
C401.1	Appraise the theory of Artificial intelligence and Machine Learning.
C401.2	Illustrate the working of AI and ML Algorithms.
C401.3	Demonstrate the applications of AI and ML.

Big Data and Analytics 18CS72

Course No.	Course Outcomes
C402.1	Explore the fundamentals of Big Data analytics
C402.2	Investigate Hadoop framework and Hadoop Distributed File system
C402.3	Illustrate the concepts of NoSQL using MongoDB and Cassandra for Big Data
C402.4	Demonstrate the MapReduce programming model to process the big data along with Hadoop tools.
C402.5	Make use of Machine Learning algorithms for real world big data.
C402.6	Analyze web contents and Social Networks to provide analytics with relevant visualization tools

User Interface Design 18CS734

Course No.	Course Outcomes
C403.1	Comprehend the significance and fundamentals of User Interface Design.
C403.2	Outline the business prerequisites for achieving User Interface Design standards.
C403.3	Design the interface by understanding the characteristics of various components like menus and windows.
C403.4	Interpret various windows Screen based Controls and device based controls.
C403.5	Apply prototypes and test plans of user interface.

Cryptography 18CS744

Course No.	Course Outcomes
C404.1	Comprehend basic cryptographic techniques and its principles.
C404.2	Apply mathematical concepts for different cryptographic algorithms.
C404.3	Analyze symmetric and asymmetric cryptographic algorithms.
C404.4	Illustrate the application of user authentication algorithms.
C404.5	Identify security issues in network, transport and application layers and outline appropriate security protocols.

Network Management 18CS742

Course No.	Course Outcomes
C405.1	Illustrate need for interoperable network management.
C405.2	Interpret the concepts and architecture behind standards based network management.
C405.3	Differentiate the concepts and terminology associated with SNMP and TMN.
C405.4	Describe network management as a typical distributed application.

Artificial Intelligence and Machine Learning Laboratory 18CSL76)

Course No.	Course Outcomes
C406.1	Implement and demonstrate AI & ML algorithms.
C406.2	Evaluate different algorithms.

Project Work Phase-1 18CSP77

Course No.	Course Outcomes
C407.1	Identify an issue and derive problem related to society, environment, economics, energy and technology.
C407.2	Formulate and Analyze the problem and determine the scope of the solution chosen.
C407.3	Determine, dissect, and estimate the parameters, required in the solution.
C407.4	Evaluate the solution by considering the standard data / Objective function and by using appropriate performance metrics.
C407.5	Compile the report and take part in present / publishing the finding in a reputed conference / publications.
C407.6	Attempt to obtain ownership of the solution / product developed.

8th Semester Course Outcomes

Internet of Things 18CS81

Course No.	Course Outcomes
C411.1	Interpret the impact and challenges posed by IoT networks leading to new architectural models.
C411.2	Compare and contrast the deployment of smart objects and the technologies to connect them to network.
C411.3	Appraise the role of IoT protocols for efficient network communication.
C411.4	Elaborate the need for Data Analytics and Security in IoT.
C411.5	Illustrate different sensor technologies for sensing real world entities and identify the applications of IoT in Industry.

Storage Area Network 18CS822

Course No.	Course Outcomes
C412.1	Identify key Challenges in managing information and analyze different storage network technologies and virtualization.
C412.2	Interpret component and the implementation of NAS.
C412.3	Describe CAS architecture and types if archives and forms of virtualisation.
C412.4	Illustrate the storage infrastructure and management activities.

Project Work Phase-2 18CSP83

Course No.	Course Outcomes
C413.1	Identify a issue and derive problem related to society, environment, economics, energy and technology.
C413.2	Formulate and Analyze the problem and determine the scope of the solution chosen.
C413.3	Determine , dissect, and estimate the parameters, required in the solution.
C413.4	Evaluate the solution by considering the standard data / Objective function and by using appropriate performance metrics.
C413.5	Compile the report and take part in present / publishing the finding in a reputed conference / publications.
C413.6	Attempt to obtain ownership of the solution / product developed.

Technical Seminar 18CSS84

Course No.	Course Outcomes
C414.1	Identify recent technical topics from interested domains.
C414.2	Analyze the applicability of modern software tools and technology.
C414.3	Develop Presentation and Communication skills.
C414.4	Develop Technical report preparation skills.

Internship/Professional Practice 18CSI85

Course No.	Course Outcomes
C415.1	Integrate theoretical knowledge with practice of software development.
C415.2	Ability to work independently and in teams.
C415.3	Develop work habits and attitude necessary for job success.
C415.4	Build oral and written communication skills.