SREE VENKATESWARA COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to JNTU,Anantapur)

Northrajupalem (Vi), Kodavaluru(M) , S.P.S.R Nellore (Dt)-524316

Computer Science and Engineering

R19 Regulation   **Course Outcomes (COs)**

I B. Tech - I Semester

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
1	Algebra and Calculus (19A54101)	C111	C111.1	Make use the concepts of Matrices to solve various Engineering problems.
			C111.2	Illustrate the knowledge of Mean Value theorems for engineering applications.
			C111.3	Apply the concepts of maxima and minima for various engineering problems.
			C111.4	Apply the Multiple integrals to determine areas and volumes of engineering applications.
			C111.5	Assess the importance of special functions and its applications.
2	Chemistry (19A51102T)	C112	C112.1	Outline the molecular orbital energy level diagram of different molecular species.
			C112.2	Acquire the knowledge of electrochemistry to improve the efficiency of batteries.
			C112.3	Demonstrate the various preparation mechanisms of different polymers in engineering applications.
			C112.4	Illustrate the various spectroscopic techniques used for the identification of functional groups and applications of chemical compounds.
			C112.5	Interpret the principle of supra molecular chemistry in application of molecular machines and switches.
3	Problem Solving & Programming (19A05101T)	C113	C113.1	Understand the peripherals, ports and connecting cables and able to assemble the system.
			C113.2	Apply algorithmic approach to solve computational problems.
			C113.3	Apply modular approach for solving the problems by using the control structures.
			C113.4	Select the individual data elements to simplify solutions and provide efficient memory utilization.
			C113.5	Develop sorting algorithms for heterogeneous data.
4	Engineering Graphics Lab (19A03102)	C114	C114.1	**Develop** the engineering imagination essential for successful design.
			C114.2	Select the utility of drafting & modelling packages in orthographic and isometric drawings.
			C114.3	Apply the usage of 2D and 3D modelling.

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
5	**Engineering Workshop (19A03101)**	**C115**	**C115.1**	Apply wood working skills in real world applications.
			C115.2	Build different parts with metal sheets in real world applications.
			C115.3	Apply fitting operations in various applications.
6	**Chemistry Lab (19A51102P)**	**C116**	**C116.1**	Demonstrate the cell constant and conductance of solutions.
			C116.2	Interpret the strength of an acid present in secondary batteries.
			C116.3	Demonstrate advanced polymer materials are used in engineering applications.
7	**Problem Solving & Programming Lab (19A05101P)**	**C117**	**C117.1**	**Select** the right control structure for solving the problem.
			C117.2	**Demonstrate** solutions for computational problems.
			C117.3	**Develop** C programs which utilize the memory efficiently using programming constructs like pointers.

I B. Tech - II Semester

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
1	**Basic Electrical & Electronics Engineering (19A02201T)**	**C121**	**C121.1**	Summarize the basic concepts of R,L,C ,voltage ,current and power of a circuit.
			C121.2	Describe the principle, working and construction of DC Generators &Motor.
			C121.3	Describe the construction, operation, types and equivalent circuit of a single phase transformer.
			C121.4	Extend the operation and characteristics of pn junction diode, rectifiers.
			C121.5	Examine the working and configuration characteristics of BJT, FET and MOSFET.
			C121.6	Demonstrate the operation Oscillator circuits and Op-amp applications.
2	**Probability and Statistics (19A54202)**	**C122**	**C122.1**	Apply regression analysis to Estimate business and engineering Trend values.
			C122.2	Apply the probability basic concepts to predict the information about on data.
			C122.3	Evaluate expected mean lifetime, failure rates, and service rates of equipment by using probability distribution.
			C122.4	Test the hypothesis to Interpret the results by using Large sample Tests.
			C122.5	Test hypothesis to Interpret the results by using small sample Tests.

3	**Applied Physics (19A56101T)**	**C123**	**C123.1**	Interpret the concepts of physical optics like interference, diffraction and polarization in various engineering applications.
			C123.2	Outline the significant concepts of dielectric and magnetic materials for potential applications in the emerging micro devices.
			C123.3	Identify the basic concepts of electromagnetic waves and its propagation in optical fibers along with its Engineering applications.
			C123.4	Demonstrate the physics of semiconductors for electronic devices.
			C123.5	Illustrate the concepts of super conducting materials and nano-materials for scientific and engineering applications.
4	**Data Structures (19A05201T)**	**C124**	**C124.1**	Understand the peripherals, ports and connecting cables and able to assemble the system.
			C124.2	Apply algorithmic approach to solve computational problems.
			C124.3	Apply modular approach for solving the problems by using the control structures.
			C124.4	Select the individual data elements to simplify solutions and provide efficient memory utilization.
			C124.5	Develop sorting algorithms for heterogeneous data.
5	**Communicative English - I (19A52101T)**	**C125**	**C125.1**	Interpret the communication and writing skills in general communication.
			C125.2	Practice the writing and life skills in structural manner of real time scenarios.
			C125.3	Relate the knowledge of writing and speaking skills to enhance the career opportunities.
			C125.4	Illustrate the concepts of writing and speaking skills to develop the skills in job opportunities.
			C125.5	Use the concepts of various real time scenarios to represent in an effective model.
6	**Computer Science and Engineering Workshop (19A05202)**	**C126**	**C126.1**	Construct a computer from its parts and make it for use.
			C126.2	Develop office utilities using MS Office package.
			C126.3	Design Graphics, Videos and Web pages.
7	**Communicative English - I Lab(19A52101P)**	**C127**	**C127.1**	Understand the different aspects of the English language proficiency with emphasis on LSRW skills.
			C127.2	Apply communication skills through various language learning activities.
			C127.3	Analyze the English speech sounds, stress, rhythm, intonation and syllable division for better listening and speaking comprehension.

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
8	Basic Electrical & Electronics Engineering Lab(19A02201P)	C128	C128.1	Verify electrical circuits.
			C128.2	Experimentally determine self inductance, mutual inductance and coefficient of coupling Practically.
			C128.3	Describe construction, working and characteristics of diodes, transistors and operational amplifiers.
9	Applied Physics Lab(19A56101P)	C129	C129.1	Understand the importance of optical phenomenon like Interference, diffraction and dispersion.
			C129.2	Comprehend the importance of optical fiber parameters in communication.
			C129.3	Recognize the importance of energy gap in the study of conductivity and Hall Effect in a semiconductor.
10	Data Structures Lab(19A05201P)	C1210	C1210	Select the data structure appropriate for solving the problem.
			C1210	Develop searching and sorting algorithms.
			C1210	Illustrate the working of stack and queue.

II B. Tech - I Semester

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
1	Mathematical Foundations of Computer Science (19A54303)	C211	C211.1	Describe the connectives, normal forms and theory of inference for problem solving through mathematical logic.
			C211.2	Illustrate discrete structures, relations, functions and recursion for set theory.
			C211.3	Illustrate the fundamental principles of counting, inclusion, exclusion and generating functions to solve combinatorial problems and permutations.
			C211.4	Solve homogeneous and non homogeneous recurrence relations.
			C211.5	Develop graph theory models of data structures and state machines to solve problems of connectivity and constraints.
2	Digital Logic Design (19A05301)	C212	C212.1	Use number systems, binary codes and Boolean algebra to implement digital circuits.
			C212.2	Apply minimization techniques on Boolean expressions.
			C212.3	Design combinational circuits using logic gates.
			C212.4	Analyze synchronous sequential circuits.
			C212.5	Classify the programmable logic devices & circuits.

3	**Design Thinking (19A99304)**	**C213**	**C213.1**	Develop different design ideas.
			C213.2	Recognize the innovation and benefits of design thinking.
			C213.3	Identify the idea generation techniques to solve wicked problems.
			C213.4	Discuss the design thinking process in IT and agile software development.
			C213.5	Make use of design techniques related to variety of software services.
4	**Database Management Systems (19A05302T)**	**C214**	**C214.1**	Design a data base for a real world information system.
			C214.2	Create transactions which preserve the integrity of the database.
			C214.3	Generate the tables for a database.
			C214.4	Organize the data to process and optimize the queries.
			C214.5	Recognize the principles of database transaction management and database recovery.
5	**Object Oriented Programming Through Java (19A05303T)**	**C215**	**C215.1**	Solve real world problems using OOP techniques.
			C215.2	Apply code reusability through inheritance.
			C215.3	Develop applications by using parallel streams for better performance.
			C215.4	Build GUI and handle event generated by user interactions.
			C215.5	Use the JDBC API to access data base.
6	**Python Programming (19A05304T)**	**C216**	**C216.1**	Apply the features of python language in various real applications.
			C216.2	Select appropriate data structure of python for solving a problem.
			C216.3	Design programs for manipulating strings.
			C216.4	Design object oriented programs using python for solving real world problems.
			C216.5	Apply modularity to programs.
7	**Universal Human Values (19A52301)**	**C217**	**C217.1**	Comprehend themselves, and their surroundings family, society, nature.
			C217.2	Relate more responsibility in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
			C217.3	Use better critical ability.
			C217.4	Relate what they have understood (human values, human relationship and human society).
			C217.5	Use what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
8	Database Management Systems Lab (19A05302P)	C218	C218.1	Design a database of any real world problem.
			C218.2	Define the database SQL queries.
			C218.3	Implement the PL/SQL programs.
9	Object Oriented Programming Through Java Lab (19A05303P)	C219	C219.1	Recognize the java programming environment.
			C219.2	Develop efficient programs using multi threading.
			C219.3	Extend the programming functionality supported by java.
10	Python Programming Lab(19A05304P)	C2110	C2110.1	Design solutions to mathematical problems.
			C2110.2	Organize the data for solving the problems.
			C2110.3	Develop python program for numerical and text based problems.
11	Environmental Science(19A99301)	C2111	C2111.1	Apply various water conservation methods and conservation of other natural resources also.
			C2111.2	Identify the importance of environmental education for protection of life cycles of various bio systems.
			C2111.3	Illustrate innovative methods for controlling of environmental pollution.
			C2111.4	Analyze environmental issues related to society and find solutions for environmental problems.
			C2111.5	Analyze the effects of increasing human population as well as health's associated problems.

II B. Tech - II Semester

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
1	Number Theory and Applications (19A54401)	C221	C221.1	Find The Solution by applying the properties of factorization, the division algorithm, and greatest common divisors.
			C221.2	Solve the linear diplontic equation by using congruence methods.
			C221.3	Solve the system of linear congruence equations by using the matrix method.
			C221.4	Develop the file storage and tournament schedules by using hashing functions, Round-robin methods.
			C221.5	Develop security codes by encryption methods.
2	Computer Organization (19A05401)	C222	C222.1	Identify the structure function and characteristics of computer systems.
			C222.2	Develop the design of various functional units and components of computers.
			C222.3	Experiment with elements of modern instructions sets and their impact on processor design.
			C222.4	Classify the function of each element of a memory hierarchy.
			C222.5	Compare different methods for computer I/O.

3	Design and Analysis of Algorithms (19A05402T)	C223	C223.1	Describe the Concepts of Algorithms and Divide and Conquer technique for real time problem solving.
			C223.2	Illustrate Greedy method and Dynamic programming techniques for developing solutions of a given problem.
			C223.3	Apply the Backtracking Techniques for problem solving in trees and graphs.
			C223.4	Solve the graph based problems through Branch and Bound techniques.
			C223.5	Develop the algorithms for NP-Hard and NP-Complete problems.
4	Entrepreneurship (19A52401)	C224	C224.1	Develop the nature of entrepreneurship.
			C224.2	Identify the function of the entrepreneur in the successful.
			C224.3	Find an entrepreneurial business idea.
			C224.4	Search personal attributes that enable best use of entrepreneurial opportunities.
			C224.5	Execute entrepreneurial leadership and management style.
5	Operating Systems (19A05403T)	C225	C225.1	Construct the fundamentals of windows & Unix commands.
			C225.2	Apply the scheduling algorithm for given problem.
			C225.3	Apply the process synchronization concepts using semaphores, bankers algorithm for the given solution.
			C225.4	Develop the various methods in memory allocation and page replacement algorithm.
			C225.5	Make use of various operating system file system.
6	Software Engineering (19A05404T)	C226	C226.1	Describe the process to be followed in SDLC.
			C226.2	Define formulate and analyze a problem.
			C226.3	Apply design and testing principles to software project development & design methodology.
			C226.4	Apply the project management and analysis principles software development.
			C226.5	Apply software development life cycle and problem articulation.
7	Operating Systems Lab (19A05403P)	C227	C227.1	Demonstrate the fundamentals Unix commands and system calls.
			C227.2	Apply FCFS, SJF, Priority, Round Robin scheduling algorithms.
			C227.3	Experiment an algorithm to detect and avoid deadlock.

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
8	Software Engineering Lab (19A05404P)	C228	C228.1	Acquaint with historical and modern software methodologies.
			C228.2	Demonstrate the phases of software projects and practice the activities of each phase.
			C228.3	Adopt skills such as distributed version control, unit testing, integration testing, build management, and deployment.
9	Biology For Engineers (19A99302)	C229	C229.1	Explain about cells& their structure and function, different types of cells & tissues and basics for classification of living organisms..
			C229.2	Explain about bio molecules-structure, function classification and their role in living organisms.
			C229.3	Explain briefly about human physiology.
			C229.4	Explain about DNA, pass and preserve vital information in living organisms.
			C229.5	Apply biological principles is different technologies for the production of medicines, through DNA technology.

III B. Tech - I Semester

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
1	Formal Languages and Automata Theory (19A05501)	C311	C311.1	Describe formal machines, languages and computations.
			C311.2	Design finite state machines for acceptance of strings.
			C311.3	Develop context free grammars for formal languages.
			C311.4	Build pushdown automata for context free grammars.
			C311.5	Develop Turing machine for solving problems and validate decidability and undesirability.
2	Artificial Intelligence (19A05502T)	C312	C312.1	Identify the importance of AI and intelligent agent related to its environment.
			C312.2	Interpret the concepts of Solving Problems by searching to solve the problems by systematically.
			C312.3	Illustrate the concepts of Reinforcement and Natural Language Processing.
			C312.4	Apply the concepts involved in developing programs that translate from one language to another, or recognize spoken words.
			C312.5	Analyse the role of Robot in various applications and identify philosophical issues in AI.

3	Object Oriented Analysis Design & Testing (19A05503T)	C313	C313.1	Apply the basic concepts of object-oriented techniques.
			C313.2	Design the user's views, contexts and diagrams using UML Modeling Techniques.
			C313.3	Identify the basic issues in reusable design and recognize the basic design patterns.
			C313.4	Apply OOAD methodology concepts using UML.
			C313.5	Design various test cases for OOAD problems.
4	Computer Networks (19A05504T)	C314	C314.1	Identify the software and hardware components to make a computer network.
			C314.2	Distinguish the usage of application layer protocols in network applications.
			C314.3	Distinguish the appropriate transport protocols with congestion control algorithms in network applications.
			C314.4	Formulate the routing algorithms in any real time network environment.
			C314.5	Design a Data Centre for an organization using Multiple Access Links and Protocols based on the application requirements.
5	Professional Elective-I (19A05505a) Data warehousing and Data mining	C315	C315.1	Illustrate the basic concepts and principles of data warehousing and data mining for data processing of an application.
			C315.2	Apply the pre-processing tools for data cleaning and data reduction.
			C315.3	Analyze and Evaluate the performance of algorithms for association rules of a data model.
			C315.4	Apply data mining tools for classification and clustering of a database.
			C315.5	Analyze the data to turn raw data into useful information through Data Mining techniques.
6	Open Elective-I (19A27506b) Computer Applications in Food Technology	C316	C316.1	Understand Computerization, Importance of Computerization in food industry and IT applications in food industries.
			C316.2	Illustrate Software & Programming Languages, Properties, Differences of an Algorithm and Flowcharts.
			C316.3	Analyse Basic Structure of a simple 'C' program. Decision Making/Control Statements.
			C316.4	Apply Concept of Functions (Defining a function & Function Prototypes, Types of functions: Library functions & User defined functions.
			C316.5	Interpret Concept of Pointers, Structures & Unions. Introduction to Data Structures, Types of Data Structures.

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
7	Artificial Intelligence Laboratory (19A05502P)	C317	C317.1	Explore the methods of implementing algorithms using artificial intelligence techniques.
			C317.2	Illustrate search algorithms.
			C317.3	Demonstrate building of intelligent agents.
8	Computer Networks Laboratory (19A05504P)	C318	C318.1	Apply computer networking tools.
			C318.2	Illustrate the working of networking commands.
			C318.3	Simulate computer networks using Ethereal Tool and JAVA.
9	Object Oriented Analysis Design & Testing Lab (19A05503T)	C319	C319.1	Design the Model of the software system using UML diagrams.
			C319.2	Apply object-oriented methodology in software design.
			C319.3	Apply testing techniques for object-oriented software.
10	Socially Relevant Project (19A05507)	C3110	C3110.1	Demonstrate the contributions to the National/Societal development goals and priorities.
			C3110.2	Extend the Skills through effective application of theoretical concepts.
			C3110.3	Build necessary skills as designers and learn about complementary material for human- cantered design.
11	Mandatory course: Constitution of India (19A99501)	C3111	C3111.1	Describe the historical background of the constitution making and its importance for building a democratic India.
			C3111.2	Describe the functioning of three wings of the government ie. Executive, legislative and judiciary.
			C3111.3	Apply the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy.

III B. Tech - II Semester

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
1	Cryptography & Network Security (19A05601)	C321	C321.1	Apply computer security concepts and encryption techniques to enhance the security in a communication model.
			C321.2	Implement Synchronous and Asynchronous key cryptosystems.
			C321.3	Apply hash functions and authentication codes to preserve integration and confidentiality of a message.
			C321.4	Understand Email Security and IPSec Practices.
			C321.5	Design secure applications and risk free computer system.

2	Big Data Analytics (19A05602T)	**C322**	**C322.1**	Describe Hadoop concepts for storage and analysis of big data.
			C322.2	Illustrate Hadoop Distributed File Systems for data storage and also prepare Map Reduce programs.
			C322.3	Develop the Map Reduce Programming for building distributed programs on clusters of computers.
			C322.4	Demonstrate the Hadoop environment for setting up the clusters to run jobs.
			C322.5	Analyze the Big Data by using the tools like Hive, Spark and Hbase.
3	English Communication (19A52601T)	**C323**	**C323.1**	Comprehend the context, topic, and pieces of specific information from social or transactional dialogues spoken by native speakers of English.
			C323.2	Use grammatical structures to formulate sentences and correct word forms.
			C323.3	Relate discourse markers to speak clearly on a specific topic in informal discussions.
			C323.4	Comprehend reading/listening texts and to write summaries based on global comprehension of these texts.
			C323.5	Explain a coherent paragraph interpreting a figure/graph/chart/table.
4	Professional Elective-II (MOOCS) Advance Computer Architecture (19A05603d)	**C324**	**C324.1**	Understand the concepts and principles of parallel and advanced computer architectures.
			C324.2	Interpret Computational models and Computer Architectures.
			C324.3	Analyse the Concepts of parallel computer models.
			C324.4	Illustrate Scalable Architectures, Pipelining, Superscalar processors, multiprocessors
			C324.5	Develop the design techniques of Scalable and multithreaded Architectures.
5	Open Elective-II Basics of VLSI (19A04604a)	**C325**	**C325.1**	Analyze the electrical properties of MOS and BiCMOS circuits
			C325.2	Draw the Layout of simple MOS circuit using Lambda based design rules
			C325.3	Apply basic circuit concepts to MOS circuits.
			C325.4	Design digital systems using MOS circuits
			C325.5	Analyze various architectures and device technologies of PLDs

6	Humanities Elective-I-MEFA (19A52602b)	C326	C326.1	Understand the role and responsibilities of a managerial economist in modern business scenario.
			C326.2	Apply the demand of a product by using demand forecasting methods.
			C326.3	Apply the Break Even Point (BEP) with the help of production and cost analysis.
			C326.4	Understand their learning's about competitive markets and business economic environment.
			C326.5	Analyze the process of preparing financial statements to know financial position of the firm.
7	Big Data Analytics Laboratory (19A05602P)	C327	C327.1	Apply the concepts of Hadoop distributions, configuring to perform File management tasks.
			C327.2	Experiment MapReduce in Hadoop frameworks.
			C327.3	Apply Big Data Analytics approaches for building Hadoop programs for real- time applications.
8	English Communication lab (19A52601P)	C328	C328.1	Apply the knowledge of structure and style in a presentation, identify the audience and make note of key points.
			C328.2	Apply Listening, Speaking, Reading and Writing skills in corporate climate.
			C328.3	Debate in group discussions using appropriate conventions and language strategies.
9	Socially Relevant Project (19A05605)	C329	C329.1	Demonstrate the contributions to the National/Societal development goals and priorities.
			C329.2	Extend the Skills through effective application of theoretical concepts.
			C329.3	Build necessary skills as designers and learn about complementary material for human- centred design.
10	Mandatory Course: Research Methodology (19A99601)	C3210	C3210.1	Apply the basic concepts of research and research problem.
			C3210.2	Apply methods of data collection, sampling and design survey questionnaires for a research Problem.
			C3210.3	Apply the knowledge of Correlation and Regression Analysis to get the results.
			C3210.4	Apply various Statistical Inference for data analysis.
			C3210.5	Design a research paper without any ethical issues.
11	Comprehensive Online Examination (19A05606)	C3211	C3211.1	Demonstrate knowledge in the Computer science and Information technology domain.
			C3211.2	Demonstrate the domain knowledge of computer science & engineering to enhance their professional skills in practice.
			C3211.3	Illustrate the overall knowledge in the relevant field of Engineering acquired over 4 years of study in the undergraduate program.

IV B. Tech - I Semester

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
1	**Internet of Things (19A05701T)**	**C411**	**C411.1**	Interpret the design principles that govern connected devices.
			C411.2	Develop simple applications using Raspberry Pi and Arduino.
			C411.3	Evaluate and develop a solution for a given application using APIs.
			C411.4	Build the business model.
			C411.5	Interpret the manufacturing techniques.
2	**Software Testing (19A05702T)**	**C412**	**C412.1**	Illustrate the purpose of testing and adequacy assessment using control flow and path testing techniques.
			C412.2	Demonstrate the strategies in dataflow testing to find the test paths of a program.
			C412.3	Identify the boundary points using Domain testing to access appropriate output of a system.
			C412.4	Simplify the path from flow graph using reduction procedure of a program.
			C412.5	Demonstrate the states and state graph strategies of a program.
3	**Professional Elective-III Cloud Computing (19A05703a)**	**C413**	**C413.1**	Classify different models, different technologies in cloud.
			C413.2	Summarize the Services and Platform of cloud
			C413.3	Design and build cloud applications.
			C413.4	Utilize Python language to access cloud services
			C413.5	Design cloud applications using Python.
4	**Open Elective-III Basics of civil Engineering (19A01704b)**	**C414**	**C414.1**	understand the characteristics of different building materials
			C414.2	illustrate the principles of planning in buildings
			C414.3	Explain about the causes of dampness in buildings and its ill effects
			C414.4	understand the various cost effective techniques in mass housing schemes
			C414.5	illustrate the objects of surveying and its classification
5	**Humanities Elective-II Management Science (19A52701b)**	**C415**	**C415.1**	Demonstrate the fundamental knowledge of Management, administration, organization.
			C415.2	Understand the role of management in Production.
			C415.3	Explain the importance of human resources for an organization.
			C415.4	Outline the strategy formulation and implementation and project management techniques.
			C415.5	Explain the contemporary issues in the management.

6	Software Testing Lab(19A05702P)	C416	C416.1	Demonstrate the basic testing procedures.
			C416.2	Prepare test cases and test suites.
			C416.3	Apply Selenium and Bugzilla tools to perform testing.
7	Internet of Things Lab (19A05701P)	C417	C417.1	Choose the sensors and actuators for an IoT application.
			C417.2	Use the cloud platform and APIs for IoT application.
			C417.3	Pepare solutions for a given IoT application.
8	Industrial Training/Skill Development/Research Project (19A05705)	C418	C418.1	Apply new technology or sharpen skills in relevant field.
			C418.2	Relate the Skills attained in association with Industry working in relevant technology.
			C418.3	Build an Industry Level Project during the training.

IV B. Tech - II Semester

S.No.	SUBJECT NAME	CODE	CO - NUMBER	COURSE OUTCOMES
1	Professional Elective-IV Adhoc & Sensor Networks	C421	C421.1	Interpret wireless LAN Standard IEEE 802.11
			C421.2	Analyze the existing MAC Protocols for Adhoc networks
			C421.3	Choose the routing protocol based on network characteristics
			C421.4	Interpret the issues in designing a multicast Routing Algorithm.
			C421.5	Evaluate the performance of Protocols in Adhoc and sensor networks
2	Open Elective-IV Disaster Management.	C422	C422.1	Understand about the global warming, cyclones and tsunamis.
			C422.2	Analyse the concepts of fire hazards and solid waste management.
			C422.3	Illustrate the regulations of building codes and land use planning related to risk and vulnerability.
			C422.4	Understand about the factors for disaster reduction.
			C422.5	Apply the education related to risk reduction in schools and communities.
3	Project(19A05803)	C423	C423.1	Identify the research problem by thorough literature survey.
			C423.2	Choose efficient tools for designing project modules.
			C423.3	Develop executable project modules after considering the requirements specified in the design phase.
			C423.4	Demonstrate the completed project work and compile the project report.