

# RAGHU ENGINEERING COLLEGE

(Autonomous)

(Approved by AICTE, Affiliated to JNTU Kakinada)

(Accredited by NBA (CIVIL, EEE, MECH, ECE, CSE & NAAC 'A' Grade)

Dakamarri, Bheemunipatnam Mandal, Visakhapatnam Dist. – 531 162 (A.P.)

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Department of Computer Science and Engineering (Internet of Things)

## AR20 Regulation I B.Tech Course Outcomes

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|---------|--|
| 1-1 Sem | <b>Subject Name and Code: Calculus (20MA1001)</b>  |
| CO-1    | Test the convergence of an infinite series and express a function in terms of power series.  |
| CO-2    | Develop the ability to solve linear differential equations of the first order and use the knowledge gained to certain engineering problems.  |
| CO-3    | Develop the ability to solve linear differential equations of higher order and use the knowledge gained to certain engineering problems.   |
| CO-4    | Apply techniques of multivariable differential calculus to determine the extreme and series expansions etc. of the functions of several variables.   |
| CO-5    | Extend the concept of integration of low and three dimensions and support it through applications in engineering.  |
| 1-1 Sem | <b>Subject Name and Code: Applied Chemistry (20CH1002)</b>   |
| CO-1    | Explain the preparation, properties, and applications of some plastic materials.   |
| CO-2    | Categorize the reasons for corrosion and study some methods of corrosion control   |
| CO-3    | Understand the importance of materials like nano materials and fullerenes and their uses.  |
| CO-4    | Understand the importance of semiconductors and molecular machines   |
| CO-5    | Understand the principles of different analytical instruments.   |
| 1-1 Sem | <b>Subject Name and Code: English for Communication (20HS1001)</b>   |
| CO-1    | The lesson helps to explore identifying the specific information from the text.  |
| CO-2    | The lesson highlights self-check on communication on general topics, informal discussions, use of cohesive devices for better reading and writing.   |
| CO-3    | Students will be able to precise the given texts, infer meanings, and write grammatical sentences.   |
| CO-4    | Students will be able to infer meanings of the contexts, recognize nonverbal clues, and use language to interpret graphs.  |
| CO-5    | Students will acquire the knowledge of note-taking, present good skills in writing & speaking, writing detailed essays, and editing short texts.   |
| 1-1 Sem | <b>Subject Name and Code: Computer Engineering Workshop (20ES1014)</b>   |
| CO-1    | Apply knowledge for computer assembling and software installation  |
| CO-2    | PC Hardware introduces the students to a personal computer and its basic peripherals, the process of assembling a personal computer, installation of system software like MS Windows, Linux, and the required device drivers. In addition hardware and software level troubleshooting processes, tips and tricks would be covered. |
| CO-3    | Apply the tools for the preparation of PPT, Documentation and budget sheet, etc.   |




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| CO-4    | The productivity tools module would enable the students in crafting professional word documents, excel spreadsheets, and PowerPoint presentations using the Microsoft suite of office tools and LaTeX. |
| CO-5    | Create interactive visual programming using scratch.   |
| 1-1 Sem | <b>Subject Name and Code: Programming for Problem Solving using C (20ES1008)</b>   |
| CO-1    | To write algorithms and to draw flowcharts for solving problems, so as to convert flowcharts/algorithms to C Programs, compile and debug programs  |
| CO-2    | To use different operators, and data types and write programs that use two-way/ multi-way selection  |
| CO-3    | To decompose a problem into functions and to develop modular reusable code   |
| CO-4    | To design and implement programs to analyze the different pointer applications   |
| CO-5    | To apply File I/O operations   |
| 1-1 Sem | <b>Subject Name and Code : English Language Communication Skills Lab (20HS1101)</b>  |
| CO-1    | Students will be able to recognize the sounds of English and Phonemic transcription and practice Stress & Intonation in speech.  |
| CO-2    | Students neutralize their accents for intelligibility.   |
| CO-3    | Students demonstrate speaking skills with clarity and confidence.  |
| CO-4    | Students communicate in Oral and Written English forms confidently.  |
| CO-5    | Students demonstrate skills like Public Speaking & Oral Presentations.   |
| CO-6    | Develop professional work habits and include those necessary for effective collaboration and cooperation with other students in structures and service-learning contact representatives.               |
| 1-1 Sem | <b>Subject Name and Code : Applied Chemistry Lab (20CH1102)</b>  |
| CO-1    | The students entering the professional course have practically very little exposure to lab classes.  |
| CO-2    | The experiments introduce volumetric analysis; redox titrations with different indicators; EDTA titrations; then they are exposed to a few instrumental methods of chemical analysis.                  |
| CO-3    | Thus, at the end of the lab course, the student is exposed to different methods of chemical analysis and the use of some commonly employed instruments.  |
| CO-4    | They thus acquire some experimental skills.  |
| 1-1 Sem | <b>Subject Name and Code : Programming for Problem Solving using C Lab (20ES1108)</b>  |
| CO-1    | Gains knowledge on various concepts of a C language.   |
| CO-2    | Able to draw flowcharts and write algorithms.  |
| CO-3    | Able to design and development of C problem-solving skills.  |
| CO-4    | Able to develop modular programming skills and to trace and debug a program.   |
| 1-2 Sem | <b>Subject Name and Code : Numerical techniques and vector spaces (20MA2003)</b>   |
| CO-1    | Determine the numerical solution of the algebraic and transcendental equations.  |
| CO-2    | Use interpolation techniques for data analysis and apply numerical methods to problems involving integration and initial value problems.   |
| CO-3    | Determine whether or not particular subsets of vector spaces are linearly independent.   |
| CO-4    | Interpret a matrix as a linear transformation.   |
| CO-5    | Understand inner products and associated norms.  |
| 1-2 Sem | <b>Subject Name and Code : Applied physics (20PH2002)</b>  |



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| CO-1    | Apply the basic principles and properties of wave optics to construct and understand the working mechanism of the Interferometer.   |
| CO-2    | Identify the conductivity of solids by applying the principles of Quantum Mechanics.  |
| CO-3    | Verify the velocity of the EM wave in the isotropic medium by studying its propagation through the dielectric medium.   |
| CO-4    | Understand the classification of solids using band gap and gain knowledge on various types of semiconductors and identify a semiconductor using Hall Effect                   |
| CO-5    | Develop an understanding of the applications of Magnetic materials and dielectric materials.  |
| 1-2 Sem | <b>Subject Name and Code : Linear algebra and Vector Calculus (20MA2002)</b>  |
| CO-1    | Solve the linear system of equations using the concepts of rank, Gauss elimination, Gauss-Jordan, and Gauss-Seidel methods.   |
| CO-2    | Solve eigenvalues and eigenvectors of a square matrix.  |
| CO-3    | Appraise the Laplace transform technique and use it to solve various engineering problems.  |
| CO-4    | Find the gradient and directional derivative of a scalar function and divergence, and curl of a vector function.  |
| CO-5    | Apply line, surface, and volume integrals to find work done by a force, flux, and interpret vector integral theorems.   |
| 1-2 Sem | <b>Subject Name and Code : Digital logic design (20ES2006)</b>  |
| CO-1    | An ability to define different number systems and their conversions, binary addition and subtraction, 2's complement representation, and operations with this representation. |
| CO-2    | An ability to understand Boolean algebra theorems and apply K-maps for simplification logic functions with Logic gates implementation   |
| CO-3    | An ability to understand and design standard combinational circuits along with programmable logic devices   |
| CO-4    | An ability to understand latches and flip-flops, Analysis and Synthesis of sequential logic circuits (FSMs)   |
| CO-5    | An ability to understand and design different registers and counters.   |
| 1-2 Sem | <b>Subject Name and Code : Data Structures (20ES2005)</b>   |
| CO-1    | Use knowledge of various concepts of a C language & Able to write efficient algorithms.   |
| CO-2    | Able to design and development of data structure problems using Stacks/Queues   |
| CO-3    | Able to design Linked Lists and their applications  |
| CO-4    | Able to develop non-linear data structures-binary trees   |
| CO-5    | Able to develop non-linear data structures-graphs   |
| 1-2 Sem | <b>Subject Name and Code : Data Structures Through C Lab (20ES2105)</b>   |
| CO-1    | Able to implement the code for all basic algorithms like searching, sorting, etc  |
| CO-2    | Able to write code for linear data structures like stacks, queues, and linked list  |
| CO-3    | Able to design and develop non-linear data structures like trees and graphs   |
| 1-2 Sem | <b>Subject Name and Code : Applied Physics Lab (20PH2102)</b>   |
| CO-1    | Apply the working principles of laboratory experiments in optics, mechanics, electromagnetic, and electronics and perform the experiments using the required apparatus.       |

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| CO-2    | Compute the required parameter by a suitable formula using experimental values (observed values) in mechanics, optics, electromagnetic and electronic experiments.  |
| CO-3    | Analyze the experimental results through graphical interpretation.  |
| CO-4    | Recognize the required precautions to carry out the experiment and handle the apparatus in the laboratory.  |
| CO-5    | Demonstrate the working principles, procedures, and applications.   |
| 1-2 Sem | <b>Subject Name and Code : Digital logic design Lab (20ES2106)</b>  |
| CO-1    | Understand truth tables of logic gates and implement Boolean expressions  |
| CO-2    | Design and verify basic combinational logic circuits  |
| CO-3    | Construct and implement PLDs  |
| CO-4    | Verify various flip-flops and shift registers   |
| CO-5    | Design and verify various counters  |
| 1-2 Sem | <b>Subject Name and Code : Universal Human Values (20MC2501)</b>  |
| CO-1    | By the end of the course, students are expected to become more aware of themselves, and their surroundings (family, society, nature)  |
| CO-2    | They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind. They would have the better critical ability. |
| CO-3    | They would have the better critical ability.  |
| CO-4    | They would also become sensitive to their commitment toward what they have understood (human values, human relationships, and human society).   |
| CO-5    | It is hoped that they would be able to apply what they have learned to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction                 |

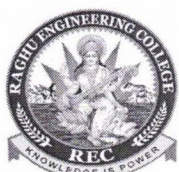
  
Signature of the HOD

Head of the Department  
Computer Science & Engineering  
Raghu Engineering College  
VISAKHAPATNAM-531162

  
Signature of the Principal

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## Department of Computer Science and Engineering (Internet of Things)

### AR20 Regulation II B.Tech Course Outcomes

|                |   |
|----------------|---|
| <b>2-1 Sem</b> | <b>Subject Name and Code :DISCRETE STRUCTURES(20ES3019)</b>   |
| <b>CO-1</b>    | Write the zeroth order logic and first order logics using different connectives, prepositions and predicates.                                 |
| <b>CO-2</b>    | Study basics of Sets, relations and functions that are needed for computer science disciplinary concepts.                                     |
| <b>CO-3</b>    | Explore different counting techniques.  |
| <b>CO-4</b>    | Understand basic graph concepts and classify different types of graphs.   |
| <b>CO-5</b>    | Discuss the basic properties of group theory and number theory  |
| <b>2-1 Sem</b> | <b>Subject Name and Code: SOFTWARE ENGINEERING(20CS3001)</b>  |
| <b>CO-1</b>    | To understand the process of software engineering and SDLC model  |
| <b>CO-2</b>    | To understand the process of requirement analysis and preparation on SRS document   |
| <b>CO-3</b>    | To understand the different software design processes   |
| <b>CO-4</b>    | To understand the implementation and testing approaches in software engineering   |
| <b>CO-5</b>    | To understand the different quality management, maintenance and reuse policy  |
| <b>2-1 Sem</b> | <b>Subject Name and Code: COMPUTER ORGANIZATION (20CS3002)</b>  |
| <b>CO-1</b>    | Understand the architecture of modern computer and understand the arithmetic operations.  |
| <b>CO-2</b>    | Understand of different register transfers and instruction types.   |
| <b>CO-3</b>    | Develop a detailed understanding of architecture and functionality of central processing unit.  |
| <b>CO-4</b>    | Exemplify in a better way the memory organization is communicating with processing unit.  |
| <b>CO-5</b>    | Understand of I/O devices communicating with Processing Unit and also knowing the characteristics of multi processors                         |
| <b>2-1 Sem</b> | <b>Subject Name and Code: THEORY OF COMPUTATION (20CS3003)</b>  |
| <b>CO-1</b>    | Understand about state machines, languages and computations.  |
| <b>CO-2</b>    | Understand the concepts on regular grammars and regular languages.  |
| <b>CO-3</b>    | Understand the concepts of context free languages and context free grammars.  |
| <b>CO-4</b>    | Learn how to design push down automata for Context Free Languages.  |
| <b>CO-5</b>    | Learn how to design a Turing machines   |
| <b>2-1 Sem</b> | <b>Subject Name and Code:ELECTRONIC DEVICES(20IO3007)</b>   |
| <b>CO-1</b>    | Apply the basic concepts of semiconductor and to understand the formation and characteristics of PN Junction Diode with relevant applications |
| <b>CO-2</b>    | Understand the Construction, Operation, Characteristics and applications of special diodes  |
| <b>CO-3</b>    | Explain the construction, principle of operation, Characteristics of BJT with its biasing techniques.   |



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| CO-4    | Know the Construction, Characteristics of FET & MOSFET with their biasing techniques  |
| CO-5    | Analyse small signal low frequency transistor amplifier circuits using BJT and FET in different configurations  |
| 2-1 Sem | <b>Subject Name and Code: SOFTWARE ENGINEERING LAB(20CS3101)</b>  |
| CO-1    | To understand the problem statement and prepare SRS based on it.  |
| CO-2    | To design DFD model and prepare structured chart based on DFD   |
| CO-3    | To design different UML diagrams  |
| 2-1 Sem | <b>Subject Name and Code: ELECTRONIC DEVICES LAB(20IO3107)</b>  |
| CO-1    | Demonstrate the operation of basic electronic components, measure voltage, frequency and phase of any waveform using CRO.   |
| CO-2    | Understand the characteristics of various electronic devices such as diodes, transistor etc., and obtain their parameters   |
| CO-3    | Describe the regulation process of Half and full wave rectifiers and observe the frequency responses of CE and CS amplifiers  |
| 2-1 Sem | <b>Subject Name and Code: FOSS Lab(20CS3108)</b>  |
| CO-1    | Identify and apply various Linux commands.  |
| CO-2    | Create a new file from scratch or edit an existing file using vi editor.  |
| CO-3    | Develop shell and awk scripts for specific needs  |
| 2-1 Sem | <b>Subject Name and Code: PYTHON PROGRAMMING (Skill Course) (20CS3201)</b>  |
| CO-1    | Write, Test and Debug Python Programs   |
| CO-2    | Solve coding tasks related conditional execution  |
| CO-3    | Use functions and represent Compound data using Lists   |
| 2-1 Sem | <b>Subject Name and Code: ENVIRONMENTAL STUDIES (20MC3502)</b>  |
| CO-1    | The natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources  |
| CO-2    | The concepts of the ecosystem and its function in the environment. The need for protecting the producers and consumers in various ecosystems and their role in the food web |
| CO-3    | The biodiversity of India and the threats to biodiversity and conservation practices to protect the biodiversity  |
| CO-4    | Various attributes of the pollution and their impacts and measures to reduce or control the pollution along with waste management practices                                 |
| CO-5    | Social issues both rural and urban environment and the possible means to combat the challenges  |
| 2-2 Sem | <b>Subject Name and Code: OBJECT ORIENTED PROGRAMMING THROUGH JAVA(20ES4009)</b>  |
| CO-1    | Understand the object oriented programming concepts   |
| CO-2    | Create simple applications using classes and objects  |
| CO-3    | Develop applications using different types of inheritances  |
| CO-4    | Apply parallel processing applications using threads and simple applications using Collections  |
| CO-5    | Develop GUI applications using AWT  |
| 2-2 Sem | <b>Subject Name and Code: PROBABILITY AND STATISTICS(20MA4006)</b>  |
| CO-1    | Understand the concepts of descriptive statistics and application of statistical measures.  |
| CO-2    | Identify discrete and continuous random variables, apply probability distributions.   |
| CO-3    | Understand the concepts of sampling distribution, estimation and construction of confidence intervals.  |



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| CO-4    | Understand how to apply various statistical tests.  |
| CO-5    | Understand how to find nature as well as the amount of relationship between the given variable(s).  |
| 2-2 Sem | <b>Subject Name and Code: MICRO PROCESSORS AND MICRO CONTROLLERS FOUNDATIONS(20IO4010)</b>  |
| CO-1    | Understand the architecture of various Microprocessors  |
| CO-2    | Write 8086 microprocessor programs using addressing modes   |
| CO-3    | Remember the architecture of 8051 microcontrollers and apply assembly language programming concepts.  |
| CO-4    | Interface 8051 Microcontroller with various peripherals   |
| CO-5    | Describe the architecture of PIC Micro controller   |
| 2-2 Sem | <b>Subject Name and Code: COMPILER DESIGN(20CS4009)</b>   |
| CO-1    | Design, develop, and implement a compiler. And also use LEX tool for developing a scanner for the given language.                                   |
| CO-2    | Design and implement LL and LR parsers. And also use YACC tool for developing a parser for the given language.                                      |
| CO-3    | Study about synthesized and inherited attributes and also generate different types of intermediate code forms.                                      |
| CO-4    | Design the good symbol table, to access easily. And also apply machine dependent code optimization techniques.                                      |
| CO-5    | Apply algorithm to generate machine code, and also apply machine dependent code-optimization techniques   |
| 2-2 Sem | <b>Subject Name and Code: Managerial Economics and Financial Accountancy(20HS4002)</b>  |
| CO-1    | Understanding of Managerial Economics, demand Analysis, Measurement of Demand and Demand Forecasting.   |
| CO-2    | Application of production tools and techniques to increase the production, Analyse production functions and application of cost control techniques. |
| CO-3    | Understanding of market structures, types of Business Organization and Business Cycles  |
| CO-4    | Understand of Accounting & Financing Analysis and Prepare Financial Statements and the usage of various Accounting tools for Financial Analysis     |
| CO-5    | To evaluate various investment project proposals with the help of capital budgeting techniques for decision making                                  |
| 2-2 Sem | <b>Subject Name and Code: OBJECT ORIENTED PROGRAMMING THROUGH JAVA LAB(20ES4109)</b>  |
| CO-1    | Create simple applications using classes, objects and inheritance   |
| CO-2    | Apply parallel processing applications using threads  |
| CO-3    | Develop GUI applications using AWT  |
| 2-2 Sem | <b>Subject Name and Code: MICROPROCESSORS AND MICRO CONTROLLERS INTERFACING LAB(20IO4110)</b>   |
| CO-1    | To apply addressing modes and instruction set for 8086 microprocessor, 8051 micro controller  |
| CO-2    | To write assembly language programs using 8086 microprocessor, 8051 micro controller  |
| CO-3    | To interface 8051 microcontroller with various peripherals  |
| 2-2 Sem | <b>Subject Name and Code: COMPILERDESIGN LAB(20CS4109)</b>  |
| CO-1    | Implement LEX, YACC tools   |
| CO-2    | Implement Scanning Techniques   |
| CO-3    | Implement Parsing Techniques  |
| 2-2 Sem | <b>Subject Name and Code: FULL STACK WEB DEVELOPMENT LAB (Skill Course) 20CS4204</b>  |

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| <b>CO-1</b> | Apply dynamic validations on designed web pages using html, css and java script.                                    |
| <b>CO-2</b> | Design single-page client applications using Angular JS.  |
| <b>CO-3</b> | Handling client requests by the server using node JS and build web applications by using angular, node and mongo DB |

  
Signature of the HOD

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Signature of the Principal

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Department of Computer Science and Engineering (Internet of Things)

## AR20 Regulation III B.Tech Course Outcomes

|                |   |
|----------------|---|
| <b>3-1 Sem</b> | <b>Subject Name and Code:OPERATING SYSTEMS(20CS5006)</b>  |
| <b>CO-1</b>    | Learn the overview of different operating systems and system calls.   |
| <b>CO-2</b>    | Design various Scheduling algorithms and also know how to manage the process.                                     |
| <b>CO-3</b>    | Understand the concept of synchronization and design deadlock prevention and avoidance algorithms.                |
| <b>CO-4</b>    | Compare and contrast various memory management schemes.   |
| <b>CO-5</b>    | Discuss different disk scheduling algorithms and file system structure and management.                            |
| <b>3-1 Sem</b> | <b>Subject Name and Code:COMPUTER NETWORKS(20CS5012)</b>  |
| <b>CO-1</b>    | Conceptualize the data communication models using OSI/ISO and TCP/IP protocol architectures                       |
| <b>CO-2</b>    | Understand different multiplexing techniques  |
| <b>CO-3</b>    | Inferring protocols implemented in data link layer for error and flow control                                     |
| <b>CO-4</b>    | expressing the features of routing mechanisms and congestion control algorithms                                   |
| <b>CO-5</b>    | understand the features of transport and application layer protocols  |
| <b>3-1 Sem</b> | <b>Subject Name and Code:DATABASE MANAGEMENT SYSTEMS(20CS5019)</b>  |
| <b>CO-1</b>    | Draw Entity-Relationship diagrams to represent simple database application scenarios                              |
| <b>CO-2</b>    | Write SQL queries for a given context in the relational database.   |
| <b>CO-3</b>    | To apply normalization techniques.  |
| <b>CO-4</b>    | Describe transaction processing and concurrency control concepts.   |
| <b>CO-5</b>    | Apply the Hashing Techniques on database.   |
| <b>3-1 Sem</b> | <b>Subject Name and Code:DISTRIBUTED COMPUTING PE-I(20CS5316)</b>   |
| <b>CO-1</b>    | Gain knowledge on characterization of distributed systems   |
| <b>CO-2</b>    | Gain knowledge on Inter-process communication.  |
| <b>CO-3</b>    | Understands the operation process of distributed objects & remote invocation                                      |
| <b>CO-4</b>    | Understands operating systems support for distributed computing.  |
| <b>CO-5</b>    | Understands transaction process & recovery in a distributed environment.  |
| <b>3-1 Sem</b> | <b>Subject Name and Code:DESIGN AND ANALYSIS OF ALGORITHMS PE-I (20CS5318)</b>                                    |
| <b>CO-1</b>    | Analyze running times of algorithms using asymptotic analysis.  |
| <b>CO-2</b>    | Apply the divide-and-conquer paradigm for searching and sorting techniques.                                       |
| <b>CO-3</b>    | Understand the concepts of connected and weighted graphs and spanning trees.                                      |
| <b>CO-4</b>    | Apply the greedy paradigm for solving complex problems and solve problems using the dynamic programming paradigm. |
| <b>CO-5</b>    | Make use of backtracking and branch and bound technique when an algorithmic design situation calls for it.        |
| <b>3-1 Sem</b> | <b>Subject Name and Code:ADVANCED DATA STRUCTURES PE-1 (20CS5321)</b>   |
| <b>CO-1</b>    | Apply the sorting techniques and hashing techniques on data.  |
| <b>CO-2</b>    | Understand the priority queues and advanced heap techniques.  |
| <b>CO-3</b>    | Understand the binary search tree techniques.   |
| <b>CO-4</b>    | Implementation of multi-way search trees.   |
| <b>CO-5</b>    | Understand the digital search structures.   |
| <b>3-1 Sem</b> | <b>Subject Name and Code:MOBILE COMPUTING PE-I (20IO5322)</b>   |



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| CO-1    | Understand the GSM, GPRS and software model for mobile computing.  |
| CO-2    | Understand SDMA, FDMA, TDMA, CDMA.   |
| CO-3    | Understand the functionality of Mobile network layer.  |
| CO-4    | Understand the functionality of Mobile Transport Layer and database issues   |
| CO-5    | Understand the Adhoc networks concepts and its routing protocols.  |
| 3-1 Sem | <b>Subject Name and Code:OPERATING SYSTEMS AND COMPUTER NETWORKS LAB(20CS5127)</b>   |
| CO-1    | Compare the performance of various CPU Scheduling Algorithms, and also implement Deadlock avoidance and Detection Algorithms.                      |
| CO-2    | Implement Semaphores, and also create processes and implement IPC.   |
| CO-3    | Analyze the performance of the various Page Replacement Algorithms, and also implement File Organization and File Allocation Strategies.           |
| CO-4    | Implement data link layer framing methods  |
| CO-5    | Implement routing algorithms in the network layer  |
| 3-1 Sem | <b>Subject Name and Code:DATA BASE MANAGEMENT SYSTEM LAB (20CS5119 )</b>   |
| CO-1    | Create database with different types of integrity constraints and use the SQL commands such as DDL, DML, TCL to access data from database objects. |
| CO-2    | Implement and elaborate SQL joins and sub queries.   |
| CO-3    | Programming PL/SQL including stored procedures, cursors.   |
| 3-1 Sem | <b>Subject Name and Code:Employability and Corporate Readiness Skills (Skill Course)(20HS5209)</b>   |
| CO-1    | Demonstrate professional behaviour for corporate requirement   |
| CO-2    | Confidence in attending campus recruitment interviews  |
| CO-3    | Developing accuracy in attempting tests in verbal ability for campus recruitment tests.  |
| CO-4    | Will be able to apply various quantitative techniques  |
| CO-5    | Will be able to reason, model, and make decisions with mathematical, Statistical, and quantitative information.                                    |
| 3-1 Sem | <b>Subject Name and Code:ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE (20MC5503)</b>  |
| CO-1    | Identify the concept of Traditional knowledge and its importance.  |
| CO-2    | Explain the need and importance of protecting traditional knowledge.   |
| CO-3    | Illustrate the various enactments related to the protection of traditional knowledge.  |
| CO-4    | Interpret the concepts of Intellectual property to protect the traditional knowledge.  |
| CO-5    | Explain the importance of Traditional knowledge in Agriculture and Medicine.   |
| 3-2 Sem | <b>Subject Name and Code:IOT ARCHITECTURE AND PROTOCOLS(20IO6051)</b>  |
| CO-1    | Understand the Architectural Overview of IoT   |
| CO-2    | Understand the IoT Reference Architecture and Real World Design Constraints  |
| CO-3    | Understand the various IoT Protocols ( Data link and Network)  |
| CO-4    | Understand Transport layer protocols and Session layer protocols.  |
| CO-5    | Understand Service layer protocols and security  |
| 3-2 Sem | <b>Subject Name and Code:WIRELESS AD-HOC &amp; SENSOR NETWORKS(20IO6052)</b>   |
| CO-1    | Understand the basics of MANET, Routing in MANETs  |
| CO-2    | Understand the data transmission techniques in MANETs  |
| CO-3    | Understand the basics of Wireless Sensor Networks (WSN)  |
| CO-4    | Understand the Data retrieval and layers in Sensor network   |
| CO-5    | Understand the security aspects of Ad hoc networks, platforms and tools  |
| 3-2 Sem | <b>Subject Name and Code:EMBEDDED TECHNOLOGY FOR IOT(20IO6025)</b>   |
| CO-1    | Understand the basic concepts of embedded systems and IoT.   |
| CO-2    | Apply the design methodology for embedded IoT Platform.  |
| CO-3    | Develop programs using Python for Raspberry Pi.  |



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| CO-4           | Understand Web of things and Cloud of things.   |
| CO-5           | Implement IoT Cloud Offerings for solving the given societal challenge using IoT                                    |
| <b>3-2 Sem</b> | <b>Subject Name and Code:UNIFIED MODELING LANGUAGE PE-II (20CS6324)</b>   |
| CO-1           | Understand the solutions to the complex problems using object oriented approach                                     |
| CO-2           | Identify classes and Objects responsibilities of the problem domain   |
| CO-3           | Understand Basic Behavioural Modeling of Unified Modeling Language.   |
| CO-4           | Understand Advanced Behavioural Modeling of Unified Modeling Language.  |
| CO-5           | Understand Architectural Modeling of Unified Modeling Language.   |
| <b>3-2 Sem</b> | <b>Subject Name and Code:SOFTWARE PROJECT MANAGEMENT PE-II (20CS6331)</b>   |
| CO-1           | Understand the importance of the software project management and its life cycle.                                    |
| CO-2           | Analyze the different Project evaluation techniques and Software estimation techniques.                             |
| CO-3           | Design the various aspects of software project management system.   |
| CO-4           | Analyze the various aspects of Project Cost and govern the software project in different ways.                      |
| CO-5           | Understand the software project organizations and quality control.  |
| <b>3-2 Sem</b> | <b>Subject Name and Code:BIG DATA ANALYTICS PE-II (20DS6343)</b>  |
| CO-1           | Identify challenges of Big data and its existing technologies   |
| CO-2           | Applying Big data File Systems to large data sets   |
| CO-3           | Analyze data using Map-Reduce framework   |
| CO-4           | Creating applications for Big Data analytics  |
| CO-5           | Building a complete business data analytic solution using Hadoop programming  |
| <b>3-2 Sem</b> | <b>Subject Name and Code:ARTIFICIAL INTELLIGENCE &amp; MACHINE LEARNING PE-II (20AI6353)</b>                        |
| CO-1           | Understand Artificial Intelligence and problem solving strategies   |
| CO-2           | Apply different logic concepts in AI  |
| CO-3           | Analyse various knowledge representation approaches, expert systems   |
| CO-4           | Understand Machine Learning concepts and Performance measurement  |
| CO-5           | Understand Machine Learning taxonomy and its algorithms   |
| <b>3-2 Sem</b> | <b>Subject Name and Code:IOT LAB(20IO6151)</b>  |
| CO-1           | Understand the common hardware platforms, sensors, and actuators used in IoT  |
| CO-2           | Understand and implement various communication technologies and protocols in IoT System.                            |
| CO-3           | Implement different applications using NodeMCU  |
| CO-4           | Understand the concepts of remotely monitor data and control devices  |
| <b>3-2 Sem</b> | <b>Subject Name and Code:EMBEDDED TECHNOLOGY FOR IOT LAB(20IO6125)</b>  |
| CO-1           | Understand hardware and software components of IoT.   |
| CO-2           | Understand interfacing of I/O devices, sensors & communication modules  |
| CO-3           | Understand the concepts of remotely monitor data and control devices  |
| CO-4           | Develop real life IoT based projects.   |
| <b>3-2 Sem</b> | <b>Subject Name and Code:WIRELESS SENSOR NETWORKS LAB(20IO6152)</b>   |
| CO-1           | Simulate different topologies of Ad-hoc networks.   |
| CO-2           | Implement the physical and MAC layer protocols of Ad-hoc networks.  |
| CO-3           | Apply TCP and UDP protocols for Ad-hoc networks.  |
| CO-4           | Implement the LEACH and PEGASIS protocols of WSNs.  |
| CO-5           | Demonstrate the SPIN protocol of WSNs.  |
| <b>3-2 Sem</b> | <b>Subject Name and Code:AWS CLOUD PRACTITIONER(Skill Course) (20CS6205)</b>  |
| CO-1           | Understand well-architected framework and different services available with AWS.                                    |
| CO-2           | Create an AWS basic VPC architecture.   |
| CO-3           | Demonstrate the use of compute and server less services.  |
| CO-4           | Differentiate between different storage services like Amazon S3, Amazon EFS, Amazon EBS, Amazon RDS, Redshift, etc. |
| CO-5           | Creating scalable and monitoring applications.  |

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| <b>3-2 Sem</b> | <b>Subject Name and Code: INDIAN CONSTITUTION(20MC6504)</b>  |
| <b>CO-1</b>    | Understand historical background of the constitution making and its importance for building a democratic India.                          |
| <b>CO-2</b>    | Understand the functioning of three wings of the government ie., executive, legislative and judiciary                                    |
| <b>CO-3</b>    | Understand the value of the fundamental rights and duties for becoming good citizen of India.  |
| <b>CO-4</b>    | Analyze the decentralization of power between central, state and local self-government.  |
| <b>CO-5</b>    | Apply the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy. |

  
**Signature of the HOD**

Head of the Department  
Computer Science & Engineering  
Raghu Engineering College  
VISA KHAPATNAM-531162

  
**Signature of the Principal**

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