

ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

B.E Computer Science and Engineering
Anna University Regulation 2017
List of Course Names

S.No.	Sem	Course code	Course	Course Title
1.	I	17C101	HS8151	Communicative English – I
2.	I	17C102	MA8151	Engineering Mathematics – I
3.	I	17C103	PH8151	Engineering Physics
4.	I	17C104	CY8151	Engineering Chemistry
5.	I	17C105	GE8151	Problem Solving And Python Programming
6.	I	17C106	GE8152	Engineering Graphics
7.	I	17C107	GE8161	Problem Solving And Python Programming Laboratory
8.	I	17C108	BS8161	Physics And Chemistry Laboratory
9.	II	17C109	HS8251	Technical English
10.	II	17C110	MA6251	Engineering Mathematics – II
11.	II	17C111	PH 8252	Physics For Information Science
12.	II	17C112	GE 8291	Environmental Science And Engineering
13.	II	17C113	BE 8255	Basic Electrical Electronics And Measurement Engineering
14.	II	17C114	CS8251	Programming In C
15.	II	17C115	GE8261	Engineering Practices Laboratory
16.	II	17C116	CS 8261	C Programming Laboratory
17.	III	17C201	MA8351	Discrete Mathematics
18.	III	17C202	CS8351	Digital Principles and System Design
19.	III	17C203	CS8391	Data Structures
20.	III	17C204	CS8392	Object Oriented Programming
21.	III	17C205	EC8395	Communication Engineering
22.	III	17C206	CS8381	Data structures Laboratory

23.	III	17C207	CS8383	Object Oriented Programming Laboratory
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25.	III	17C209	HS8381	Interpersonal Skill and Listening and Speaking
26.	IV	17C210	MA8402	Probability and Queueing Theory
27.	IV	17C211	CS8491	Computer Architecture
28.	IV	17C212	CS8492	Database management Systems
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30.	IV	17C214	CS8493	Operating Systems
31.	IV	17C215	CS8494	Software Engineering
32.	IV	17C216	CS8481	Database management Systems Laboratory
33.	IV	17C217	CS8461	Operating Systems Laboratory
34.	IV	17C218	HS8461	Advanced Reading and Writing
35.	V	17C301	MA8551	Algebra and Number Theory
36.	V	17C302	CS8591	Computer Networks
37.	V	17C303	EC8691	Microprocessor and Microcontroller
38.	V	17C304	CS8501	Theory of Computation
39.	V	17C305	CS8592	Object Oriented Analysis and Design
40.	V	17C306(OE-I)	OMD551	Basic of Biomedical Instrumentation
41.	V	17C307	EC8681	Microprocessor and Microcontroller Laboratory
42.	V	17C308	CS8581	Networks Laboratory
43.	V	17C309	CS8582	Object Oriented Analysis and Design Laboratory
44.	VI	17C310	CS8651	Internet Programming
45.	VI	17C311	CS8691	Artificial Intelligence
46.	VI	17C312	CS8601	Mobile Computing
47.	VI	17C313	CS8602	Compiler Design
48.	VI	17C314	CS8603	Distributed System
49.	VI	17C315(PE-I)	IT8076	Software Testing
50.	VI	17C316	CS8661	Internet Programming Laboratory

51.	VI	17C317	CS8662	Mobile Application Development Laboratory
52.	VI	17C318	CS8611	Mini Project
53.	VI	17C319	HS8581	Professional Communication
54.	VII	17C401	MG8591	Principles of management
55.	VII	17C402	CS8792	Cryptography and Network Security
56.	VII	17C403	CS8791	Cloud computing
57.	VII	17C404(PE-II)	IT8075	Software project Management
58.	VII	17C405(PE-III)	CS8079	Human Computer Interaction
59.	VII	17C405(PE-III)	CS8088	Wireless Ad-hoc and Sensor Networks
60.	VII	17C406(OE-II)	OEC754	Medical electronics
61.	VII	17C407	CS8711	Cloud computing lab
62.	VII	17C408	IT8761	Security Lab
63.	VIII	17C410(PE-IV)	CS8074	Cyber Forensics
64.	VIII	17C411(PE-V)	CS8078	Green Computing
65.	VIII	17C413	CS8811	Project Work

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Course Outcomes (CO)

17C101- HS8151 – COMMUNICATIVE ENGLISH – I

17C101.1	Construct dialogues for informal conversations and make a lead in group; introduce themselves and their friends and express opinions in English.
17C101.2	Develop general comprehending skills and present lucid skills in free writing.
17C101.3	Make use of the basic grammar techniques and utilize it in enhancing language development
17C101.4	Outline informal, personal letters and emails in English.
17C101.5	Extend the proficiency in writing short essays and relate main and subordinate ideas to improve the writing skill.

17C102 –MA6151-MATHEMATICES-I

17C102.1	Identify maxima or minima of functions of one variable using differentiation..
17C102.2	Identify maxima or minima in two variables using partial differentiation.
17C102.3	Solve proper and improper integrals.
17C102.4	Apply multiple integral techniques in evaluating Area and Volume of Solids
17C102.5	Solve differential equations in Engineering problems.

17C103-PH6151-ENGINEERING PHYSICS-I

17C103.1	Illustrate basic concepts of stress and strain in solids
17C103.2	Classify the type of optical fiber and Laser
17C103.3	Infer about the transfer of heat energy and its applications
17C103.4	Illustrate the quantum theory and its applications
17C103.5	Outline the various crystal structure and its growth techniques

17C104-CY6151-ENGINEERING CHEMISTRY-I

17C104.1	Summarize the water related problems in boilers and their treatment techniques.
17C104.2	Explain the concept and need of catalysis.
17C104.3	Apply the chemical properties to categorize the engineering materials and their uses.
17C104.4	Illustrate the quality of fuel by its properties.
17C104.5	Apply the basics of Nano materials and their properties in various applications.

17C105-GE6151- PROBLEM SOLVING AND PYTHON PROGRAMMING

17C105.1	Explain algorithmic solutions to simple computational problems.
17C105.2	Explain simple Python statements and expressions.
17C105.3	Apply control flow and functions concept in Python for solving problems
17C105.4	Explain – lists, tuples & dictionaries for representing compound data
17C105.5	Apply files, exception, modules and packages in Python for solving problems

17C106-GE8152-ENGINEERING GRAPHICS

17C106.1	Discuss the orthographic views of Engineering components.
17C106.2	Relate to basic principles of orthographic projection for drawing projection of points, lines and planes.
17C106.3	Apply basic principles of orthographic projection for drawing projection of solids like prisms, pyramids, cone and cylinder.
17C106.4	Show the sectioned view of solids and the development of solid surfaces
17C106.5	Show the isometric projection and perspective views for simple solids.

17C108/GE8161 – PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY

17C108.1	Apply basic concepts and simple Python programs.
17C108.2	Explain Python programs with conditionals and loops.
17C108.3	Apply function definition and recursion in Python program.
17C108.4	Apply Python lists, tuples, and dictionaries for representing compound data.
17C108.5	Apply Read and write data from/to files in python program.

17C108.6	Exhibit ethical principles in engineering practices
17C108.7	Perform task as an individual and / or team member to manage the task in time
17C108.8	Express the Engineering activities with effective presentation and report
17C108.9	Interpret the findings with appropriate technological / research citation.
17C108.10	Apply basic concepts and simple Python programs.
17C108.11	Explain Python programs with conditionals and loops.

17C108-BS8161-PHYICS AND CHEMISTRY LABORATORY

17C108.1	Explain the physical parameters such as thickness of a wire, band gap of semiconductor both individually and by team by using experiments
17C108.2	Compare the Young's modulus and Rigidity modulus of different materials
17C108.3	List the velocity of ultrasonic waves in different liquids like water and kerosene
17C108.4	Estimate strength of acids quantitatively based on the conductance and PH level of the solution both individually and in teams
17C108.5	Estimate water quality parameters such as dissolved oxygen content, chloride content and iron content of the water samples both individually and in teams
17C108.6	Exhibit ethical principles in engineering practices
17C108.7	Perform task as an individual and / or team member to manage the task in time
17C108.8	Express the Engineering activities with effective presentation and report
17C108.9	Interpret the findings with appropriate technological / research citation.

17C109-HS6251-TECHNICAL ENGLISH-II

17C109.1	Interpret the passage listened from talk and comprehension.
17C109.2	Rephrase the paragraph of talks and comprehension passages after reading and Interpret charts and graphs.
17C109.3	Develop their speaking skills to make technical presentation
17C109.4	Summarize, resume, analytical and issue-based essays.
17C109.5	Summarize reports and minutes of meeting suitably

17C110-MA8251- MATHEMATICS-II

17C110.1	Apply the concept of orthogonal transformation to diagonalise the given matrix
17C110.2	Solve line integral, surface integral and volume integral in Engineering applications.
17C110.3	Relate analytic functions by Milne's Thomson method.
17C110.4	Solve real definite integrals as contour integrals around unit circle and semi-circle
17C110.5	Solve the second order ODE by Laplace transformation.

17C111-PH6251-ENGINEERING PHYSICS-II

17C111.1	Infer the electrical properties of material.
17C111.2	Classify the type of semiconductor and its uses.
17C111.3	Outline the magnetic and dielectric properties of different materials.
17C111.4	Explain the optical properties of materials
17C111.5	Interpret the quantum structures and Carbon Nanotube

17C112 GE 8291 -ENVIRONMENTAL SCIENCE AND ENGINEERING

17C112.1	Illustrate the features of Ecosystem& biodiversity
17C112.2	Choose pollution control methods and waste management.
17C112.3	Apply the environmental concepts for conservation and protection of natural resources.
17C112.4	Demonstrate the impact of social issues on environment
17C112.5	Demonstrate the impact of human on environment.

17C113 BE 8255 – BASIC ELECTRICAL ELECTRONICS AND MEASUREMENT ENGINEERING

17C113.1	Apply the concept of network theorem and laws on electric circuits
17C113.2	Demonstrate the performance of D.C and A.C electrical Machines.
17C113.3	Illustrate the utilization of energy resources and protection devices
17C113.4	Summarize the operating principles and characteristics of various Electronic Devices.
17C113.5	Explain the working of electrical Measuring Instruments.

17C114 CS8251-PROGRAMMING IN C

17C114.1	Explain the basic concepts of C like datatypes, operators, decision making, and control structures for problem solving.
17C114.2	Explain various String operations and types of arrays.
17C114.3	Apply functions and pointers concepts in simple applications.
17C114.4	Explain the concepts of structures and union to implement data structures like linked list.
17C114.5	Apply File Handling concepts in C program for sequential and random access file processing.

17C115 GE8261 – ENGINEERING PRACTICESLABORATORY

17C115.1	Explain the various manufacturing process in smithy, foundry, fitting, assembling and disassembling and will be able to provide effective presentation.
17C115.2	Summarize the operations of various machine tools lathe , drilling
17C115.3	Develop models by using skills achieved from workshop sections like welding, carpentry, sheet metal and plumbing
17C115.4	Apply the skills of basic electrical engineering for domestic wiring practices
17C115.5	Apply the measuring instruments like energy meter and perform measurements in electrical circuits.
17C115.6	Explain the working of electronic components.
17C115.7	Apply the electronic principle for develop engineering circuits.
17C115.8	Explain the various manufacturing process in smithy, foundry, fitting, assembling and disassembling and will be able to provide effective presentation.
17C115.9	Summarize the operations of various machine tools lathe , drilling

17C116- CS 8261 –C PROGRAMMINGLABORATORY

17C116.1	Apply basic programming concepts of C in simple programs.
17C116.2	Explain Decision making and looping concepts using C programs.
17C116.3	Apply C programs in single dimensional array and two dimensional arrays in programs
17C116.4	Apply C programs involving pointers and structures.
17C116.5	Apply applications using sequential and random access file processing concepts in C.
17C116.6	Exhibit ethical principles in engineering practices
17C116.7	Perform task as an individual and / or team member to manage the task in time
17C116.8	Express the Engineering activities with effective presentation and report
17C116.9	Interpret the findings with appropriate technological / research citation.

17C201 MA8351-- Discrete Mathematics

17C201.1	Apply mathematical logic to solve problems
17C201.2	Solve counting principles problems by applying elementary counting techniques using product, sum, permutations, combinations, pigeon hole principle.
17C201.3	Apply how graph and tree concepts are used to solve problems arising in the computer science.
17C201.4	Explain the concepts and properties of algebraic structures such as groups ,rings and fields
17C201.5	Explain Boolean Algebra Lattices, Posets and their properties.

17C202 CS8351-- Digital Principles and System Design

17C202.1	Apply Arithmetic operations in any number system and various techniques to simplify the Boolean functions
17C202.2	Apply a Combinational & Sequential logic Circuits to perform arithmetic & Shift operations correspondingly
17C202.3	Analyse the logical design of Combinational & Sequential logic design
17C202.4	Analyse the Memory arrays for the appropriate problem
17C202.5	Solve very log codes for the design of digital circuits.

17C203-CS8391-Data Structures

17C203.1	Identify the types of list ADT and its applications
17C203.2	Apply the linear data structures to problem solutions.
17C203.3	Compare tree data structures to problem solutions.
17C203.4	Apply the Graphs with its application
17C203.5	Compare the various sorting algorithms, hashing techniques.

17C204 CS8392- Object Oriented Programming

17C204.1	Interpret Java programs using Object Oriented Programming principles
17C204.2	Build programs using packages, inheritance and interfaces
17C204.3	Develop programs using user defined exceptions and with I/O streams
17C204.4	Develop a java application with threads and generics classes
17C204.5	Make use of AWT swing and build simple Graphical User Interfaces

17C205 EC8395- Communication Engineering

17C205.1	Outline the concepts of analog modulation systems.
17C205.2	Illustrate pulse communication techniques and
17C205.3	Summarize the concepts of digital modulation systems
17C205.4	Explain basic principles in the generation of spread spectrum signals
17C205.5	Explain the methods of multiple access in communication systems

17C206 CS8381- Data structures Laboratory

17C206.1	Enumerate functions to implement linear and non-linear data structure operations
17C206.2	Design and develop appropriate linear / non-linear data structure operations for solving a given problem
17C206.3	Design new solutions for programming problems or improve existing code using learned algorithms and data structures
17C206.4	Apply the linear / non-linear data structure operations for a given problem based on the user needs
17C206.5	Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval
17C206.6	Exhibit ethical principles in engineering practices
17C206.7	Perform task as an individual and / or team member to manage the task in time
17C206.8	Express the Engineering activities with effective presentation and report
17C206.9	Interpret the findings with appropriate technological / research citation.

17C207 CS8383- Object oriented programming Laboratory

17C207.1	Illustrate simple java programs by using classes and objects
17C207.2	Construct java programs using predefined classes and packages
17C207.3	Make use of inheritances and interfaces to develop java application
17C207.4	Interpret exception handling, multithreading, generic programming and file processing concepts in java
17C207.5	Inspect java application for real time problems using Event Handling
17C207.6	Exhibit ethical principles in engineering practices
17C207.7	Perform task as an individual and / or team member to manage the task in time
17C207.8	Express the Engineering activities with effective presentation and report
17C207.9	Interpret the findings with appropriate technological / research citation.

17C208 CS8383- Digital System Laboratory

17C208.1	Interpret Combinational circuits Using Logic gates.
17C208.2	Illustrate Combinational circuits Using MSI Devices.
17C208.3	Practice various counters using Flip-flops
17C208.4	Practice shift registers using Flip-flops

17C208.5	Solve very log codes for the design of digital circuits.
17C208.6	Exhibit ethical principles in engineering practices
17C208.7	Perform task as an individual and / or team member to manage the task in time
17C208.8	Express the Engineering activities with effective presentation and report
17C208.9	Interpret the findings with appropriate technological/ research citation

17C209 HS8381- Interpersonal Skill and Listening and Speaking

17C209.1	Listen and react by giving verbal and non verbal feedback
17C209.2	To make effective contribution in GroupDiscussions.
17C209.3	Compare and Contrast the ideas from multiple choices and summarize
17C209.4	Respond confidently in both Formal and Informal conversations.
17C209.5	Apply stress and intonation while speaking to make the presentation effective
17C209.6	Exhibit ethical principles in engineering practices
17C209.7	Perform task as an individual and / or team member to manage the task in time
17C209.8	Express the Engineering activities with effective presentation and report
17C209.9	Interpret the findings with appropriate technological / research citation.

17C210 MA8402-Probability and Queueing Theory

17C210.1	Explain the basic knowledge of Probability and Distributions
17C210.2	Explain the fundamental knowledge of One and Two dimensional random variables
17C210.3	Categorize Discrete and Continuous processes
17C210.4	Analyze Queueing models in real world problems
17C210.5	Compare Linear and Non Linear Queueing models

17C211 CS8491-Computer Architecture

17C211.1	Illustrate the structures of computers, operations and instructions.
17C211.2	Solve fixed-point and floating point arithmetic unit.
17C211.3	Illustrate the concept of pipelining and control unit in MIPS processor.
17C211.4	Demonstrate the classification of parallel processing.
17C211.5	Analyze the different types of memory and I/O systems.

17C212 CS8492- Database management Systems

17C212.1	Outline the database system architecture and compare embedded SQL with dynamic SQL
17C212.2	Construct ER model for Relational model mapping to perform database design effectively
17C212.3	Apply the concurrency control techniques and recovery procedures
17C212.4	Solve the different query using various query processing techniques.
17C212.5	Compare advanced databases with traditional databases

17C213 CS8451-Design and Analysis of Algorithm

17C213.1	Discuss the fundamental concepts problem solving algorithm, its types and the parameters to analyze those algorithms
17C213.2	Explain the Brute Force method and Divide and Conquer method to solve computing problems.
17C213.3	Explain the dynamic programming and greedy techniques to solve computing problems.
17C213.4	Describe how scientific problems can be solved using iterative method and how to cope with limitations of algorithm power.
17C213.5	Critically analyze the different algorithm design techniques for a given problem based on its time and space complexity.

17C214 CS8493-Operating system

17C214.1	Outline the overall view of the computer system and operating system
17C214.2	Identify various scheduling algorithm and deadlock prevention and avoidance algorithm
17C214.3	Compare and contrast various memory management schemes and file system functionalities
17C214.4	Analyze the performance of the various page replacement algorithms and interpret the file system implementation, sharing and protection mechanisms.
17C214.5	Demonstrate administrative tasks on Linux servers and to be familiar with the basics of Mobile OS.

17C215 CS8494-Software Engineering

13C215.1	Demonstrate different process models, Agile process.
13C215.2	Demonstrate the Concepts of requirements engineering process ,requirement management, analysis.
13C215.3	Categorize the systematic procedure for the design and deployment of software.
13C215.4	Decide the various testing methods and implementation techniques for software project.
13C215.5	Analyze the project scheduling, models and identify risk in software engineering
13C215.6	Demonstrate different process models, Agile process.
13C215.7	Demonstrate the Concepts of requirements engineering process ,requirement management, analysis.
13C215.8	Categorize the systematic procedure for the design and deployment of software.
13C215.9	Decide the various testing methods and implementation techniques for software project.

17C216 CS8481-Data base Management Systems laboratory

17C216.1	Infer database language commands to create simple database
17C216.2	Analyze the database using queries to retrieve records
17C216.3	Applying PL/SQL for processing database
17C216.4	Analyze front end tools to design forms ,reports and menus
17C216.5	Develop solutions using database concepts for realtime requirements.
17C216.6	Exhibit ethical principles in engineering practices
17C216.7	Perform task as an individual and / or team member to manage the task in time
17C216.8	Express the Engineering activities with effective presentation and report
17C216.9	Interpret the findings with appropriate technological / research citation.

17CS217/Operating Systems Laboratory

17C217.1	Illustrate the various CPU scheduling algorithms.
17C217.2	Implement deadlock avoidance and detection algorithms.
17C217.3	Implement deadlock avoidance and detection algorithms.
17C217.4	Analyze the performance of the various page replacement algorithms.
17C217.5	Implement file organization and file allocation strategies.
17C217.6	Exhibit ethical principles in engineering practices
17C217.7	Perform task as an individual and / or team member to manage the task in time
17C217.8	Express the Engineering activities with effective presentation and report
17C217.9	Interpret the findings with appropriate technological / research citation.

17CS218/HS8461 – Advanced Reading And Writing

17C218.1	Interpret variety of texts adapting different reading skills.
17C218.2	Relate the lucid skills in free writing
17C218.3	Apply skills pertaining to present essays in the frame of the scientific method
17C218.4	Develop various types and formats of reports, email, resume, letters, to meet particular needs or purposes
17C218.5	Apply skills pertaining problem solving creative and critical thinking in everyday life.
17C218.6	Exhibit ethical principles in engineering practices
17C218.7	Perform task as an individual and / or team member to manage the task in time
17C218.8	Express the Engineering activities with effective presentation and report
17C218.9	Interpret the findings with appropriate technological / research citation.

17C301/MA8551-Algebra and Number Theory

17C301.1	Explain the concepts and properties of algebraic structures such as groups, rings and fields.
17C301.2	Explain the fundamental concepts of advanced algebra and their role in modern mathematics.
17C301.3	Apply the knowledge of GCD, LCM, prime and composite numbers in advanced algebraic techniques.
17C301.4	Explain the types of Diophantine equations and solve the equations using congruences and algorithms
17C301.5	Solving the classical theorems using the concepts of divisibility congruences and some basic algorithms.

17C303 CS8591- Computer Networks

17C302.1	Illustrate the basic layers and its functions in computer networks and
17C302.2	Summarize the Media Access Control Protocols and different Internetworking
17C302.3	Analyze and design routing algorithms.
17C302.4	Utilize protocols for various functions in the network
17C302.5	Inspect the working of various application layer protocols.

17C303 Microprocessor and Microcontroller

17C303.1	Interpret the architecture and function of microprocessor.
17C303.2	Compare the different bus configurations.
17C303.3	Model various applications using microprocessor.
17C303.4	Interpret the architecture and function of microcontroller.
17C303.5	Examine various interfacings using microcontroller.

17C304 CS8501- Theory of Computation

17C304.1	Outline the concept of Finite Automata and Regular Expression
17C304.2	Illustrate the design of Context Free Grammar for any language set
17C304.3	Demonstrate the push down automaton model for the given language.
17C304.4	Make use of Turing machine concept to solve the simple problems
17C304.5	Outline decidability or undesirability of various problems

17C305 CS8592-Object Oriented Analysis and Design

13C305.1	Express the software design concepts with UML diagram.
13C305.2	Construct the domain model and design model to various use case scenarios.
13C305.3	Identify various scenarios based on software requirements
13C305.4	Transform UML based software design into pattern based design using design patterns.
13C305.5	Explain the various testing methodologies for object oriented software.

17C306(OE-I) OMD551-Basic of Biomedical Instrumentation

13C306.1	Discuss the origin of biopotential and types of electrodes
13C306.2	Examine the characteristics of bio signals and electrode configuration
13C306.3	Describe the performance of signal conditioning unit.
13C306.4	Analyze the measurement of non electrical parameters
13C306.5	Analyze the biochemical measurement.

17C307 EC8681 Microprocessor and Microcontroller Laboratory

17C307.1	Interpret the architecture and operation of microprocessor (8086).
17C307.2	Implement simple assembly language programs using instruction sets of microprocessor and microcontroller
17C307.3	3 Compare instruction sets of 8086 microprocessor and 8051 microcontroller
17C307.4	Implement assembly language programs using instruction sets of microcontroller
17C307.5	Develop applications using instructions of microprocessors and microcontroller
17C307.6	Exhibit ethical principles in engineering practices
17C307.7	Perform task as an individual and / or team member to manage the task in time
17C307.8	Express the Engineering activities with effective presentation and report
17C307.9	Interpret the findings with appropriate technological / research citation.

17C308 CS8581 –Network laboratory

17C308.1	Implement various protocols using TCP and UDP C309.2 K3 C309.3 K3 C309.4 K3 C309.6
17C308.2	Compare the performance of different transport layer protocols
17C308.3	Use simulation tools to analyze the performance of various network protocols
17C308.4	Analyze various routing algorithms and Implement error correction codes
17C308.5	Explain Network simulator (NS) and Simulate Congestion Control Algorithms using NS
17C308.6	Exhibit ethical principles in engineering practices
17C308.7	Perform task as an individual and / or team member to manage the task in time
17C308.8	Express the Engineering activities with effective presentation and report
17C308.9	Interpret the findings with appropriate technological / research citation.

17C309 CS8582 -Object Oriented Analysis and Design Laboratory

17C309.1	Make use of object oriented and design concepts to solve a given problem specifications.
17C309.2	Apply design patterns to improve the software quality
17C309.3	Test the compliance of the software with SRS
17C309.4	Map the object oriented design to the developed code
17C309.5	Apply object oriented design to develop a software
17C309.6	Exhibit ethical principles in engineering practices
17C309.7	Perform task as an individual and / or team member to manage the task in time
17C309.8	Express the Engineering activities with effective presentation and report
17C309.9	Interpret the findings with appropriate technological / research citation.

17C310 CS8651- Internet Programming

13C310.1	Apply the concept of HTML5, cascading style sheet in website design
13C310.2	Use of DHTML and java script for client side applications.
13C310.3	Apply the concept of servlet for server side java application.
13C310.4	Design a simple web pages using PHP and to represent data in XML format
13C310.5	Use of AJAX, web services to develop interactive web application ,a client presentation using AJAX , web services architecture

17C311-CS6659- Artificial Intelligence

17C311.1	Solve various problem using different search algorithm.
17C311.2	Apply first order and predicate logic to represent a problem.
17C311.3	Examine the appropriate agent strategy to solve a given problem.
17C311.4	Develop software agent to solve a problem.
17C311.5	Build applications for NLP that use Artificial Intelligence.

17C312 CS8601-Mobile computing

17C312.1	Illustrate the basics of mobile telecommunication system
17C312.2	Discuss about the required functionality at each layer for given application
17C312.3	Create a solution for each functionality at each layer
17C312.4	Examine the simulator tools and design Ad hoc networks
17C312.5	Design a mobile application.

17C313 CS8602- Compiler Design

17C313.1	Illustrate the phases of a Compiler
17C313.2	Illustrate the translation of regular expression into parse tree using syntax analyzer
17C313.3	Construct the intermediate representation considering the type systems
17C313.4	Apply the optimization techniques for the generated code
17C313.5	Use the different compiler construction tools to develop a simple compiler

17C314 CS8603-Distributed System

17C314.1	Outline the distributed systems architecture.
17C314.2	Outline the inter process communication in distributed systems.
17C314.3	Illustrate the file accessing model and various services in distributed system.
17C314.4	Demonstrate concurrency control and properties of transaction in Distributed systems.
17C314.5	Discuss resource and process management in distributed system

17C315(PE-I) IT8076- Software Testing

17C315.1	Outline the basic testing principles and strategies
17C315.2	Identify suitable tests to be carried out while designing test cases
17C315.3	Compare the various levels of testing
17C315.4	Analyze the organizational structures and testplans
17C315.5	Illustrate the automatic testing tools and test metrics

17C316-CS8661-Internet Programming Laboratory

17C316.1	Develop web pages using HTML/XML and style sheets
17C316.2	Analyse user interfaces using Java frames and applets
17C316.3	Compare and contrast dynamic web pages using server side scripting
17C316.4	Develop a Client Server application and develop a web page using JSP

17C316.5	Build the applications using AJAX
17C316.6	Exhibit ethical principles in engineering practices
17C316.7	Perform task as an individual and / or team member to manage the task in time
17C316.8	Express the Engineering activities with effective presentation and report
17C316.9	Interpret the findings with appropriate technological / research citation.

17C317 CS8662-Mobile Application Development Laboratory

17C317.1	Develop mobile applications using GUI and Layouts.
17C317.2	Develop mobile applications using Event Listener.
17C317.3	Develop mobile applications using Databases.
17C317.4	Develop mobile applications using RSS Feed, Internal/External Storage, SMS, Multithreading and GPS.
17C317.5	Develop a simple mobile application.
17C317.6	Exhibit ethical principles in engineering practices
17C317.7	Perform task as an individual and / or team member to manage the task in time
17C317.8	Express the Engineering activities with effective presentation and report
17C317.9	Interpret the findings with appropriate technological / research citation.

17C318 / CS8611-Mini Project

17C318.1	Choose problems with technical importance and societal contribution
17C318.2	Identify and survey the relevant literature for getting exposed to related solutions
17C318.3	Build project plans with feasible requirements
17C318.4	Analyse, design and develop adaptable and reusable solutions
17C318.5	Implement and test solutions to trace against the user requirements
17C318.6	Deploy the solutions for better manageability and provide scope for improvability

17C319 HS8581 PROFESSIONAL COMMUNICATION

17C319.1	Develop adequate Soft Skills, Employability and Career Skills required for the working place.
17C319.2	Apply the presentation skills and introduce oneself and make effective paper presentation
17C319.3	Make use of GD Strategies and participating in Group Discussion
17C319.4	Apply the interview etiquette and present oneself well in the interview
17C319.5	Relate the stress management & career management strategies in one's career development
17C319.6	Exhibit ethical principles in engineering practices

17C319.7	Perform task as an individual and / or team member to manage the task in time
17C319.8	Express the Engineering activities with effective presentation and report
17C319.9	Interpret the findings with appropriate technological / research citation.

17C401 MG8591--Principles of management

17C401.1	Discuss the evolution of management thoughts and the challenges of managerial activities in a global business environment.
17C402.2	Explain the types of Planning and Decision making methodologies in Organizations
17C403.3	Summarize various types of Organization structure and associated Human Resources activities for man-power utilization
17C404.4	Explain about motivation theories, behavior, leadership theories and communication for effective directing
17C405.5	Explain various Controlling techniques to maintain standards in Organizations.

17C402 CS8792--Cryptography and Network security

17C402.1	Compare various encryption techniques.
17C402.2	Contrast public key algorithms with private key algorithms
17C403.3	Apply various message authentication functions and secure algorithms.
17C404.4	Identify different types of security systems and applications.
17C405.5	Analyze different levels of security and services in e-mail & web security

17C403 CS8791-Cloud computing

17C403.1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
17C403.2	Explain the key and enabling technologies that help in the development of cloud.
17C403.3	Make use of NIST cloud computing architecture to solve architecture design challenges
17C403.4	Explain the core issues of cloud computing such as resource management and security.
17C403.5	Illustrate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud

17C404(PE-II) IT8075-Software project Management

17C404.1	Use the project plan and identify the best project.
17C404.2	Analyze the cost, human resource and project infrastructure of concern project.
17C404.3	Compare and contrast activity planning models and analyzing software risks by risk management strategies.
17C404.4	Apply the management project principles lead the project in team as need of industry.
17C404.5	Plan to manage interplay of people in an organization and spirit of working in teams.
17C404.6	Use the project plan and identify the best project.
17C404.7	Analyze the cost, human resource and project infrastructure of concern project.
17C404.8	Compare and contrast activity planning models and analyzing software risks by risk management strategies.
17C404.9	Apply the management project principles lead the project in team as need of industry.

17C405(PE-III) CS8079- Human Computer Interaction

17C405.1	Demonstrate a effective dialog for HCI.
17C405.2	Create an effective HCI for individuals and persons with disabilities.
17C405.3	Analyze the importance of user feedback.
17C405.4	Outline the HCI implications for designing multimedia/ ecommerce/ e-learning Websites.
17C405.5	Develop a meaningful user interface.

17C405(PE-III) CS8088- Wireless Adhoc and Sensor Networks

17C405.1	Know about the issues and challenges in the design of wireless adhoc networks
17C405.2	Analyse theTransport Layer protocols and their QoS for ad hoc and sensor networks
17C405.3	Understand the working of MAC and Routing Protocols for ad hoc and sensor networks
17C405.4	Illustrate the Congestion Control in network processing
17C405.5	Identify and understand security issues in ad hoc and sensor networks.

C406/ OEC754(OE-II)- MEDICAL ELECTRONICS

17C406.1	Understand the human body electro- physiological parameters and recording of bio-potentials
17C406.2	Analyze the non-electrical physiological parameters and their measurement – body temperature, blood pressure, pulse, blood cell count, blood flow meter etc
17C406.3	Analyze the various assist devices used in the hospitals viz. pacemakers, defibrillators, dialyzers and ventilators
17C406.4	Understand about physical medicine methods eg. ultrasonic, shortwave, microwave surgical diathermies , and bio-telemetry principles and methods
17C406.5	Understand about recent trends in medical instrumentation

17C407/CS8711- Cloud lab

17C407.1	Design and deploy a web application in a PaaS environment link layer.
17C407.2	Learn how to simulate a cloud environment to implement new schedulers.
17C407.3	Demonstrate generic cloud environment that can be used as a private cloud.
17C407.4	Manipulate large data sets in a parallel environment.
17C407.5	Apply Hadoop single node cluster and run simple applications.
17C407.6	Exhibit ethical principles in engineering practices
17C407.7	Perform task as an individual and / or team member to manage the task in time
17C407.8	Express the Engineering activities with effective presentation and report
17C407.9	Interpret the findings with appropriate technological / research citation.

17C408 IT8761- Security lab

17C408.1	Experiment with intrusion detection system using any snort tool
17C408.2	Demonstrate how to provide secure data storage, secure data transmission and for creating digital signatures using GnuPG
17C408.3	Interpret various substitution & transposition techniques, DES, RSA Algorithm, Diffie-Hellman, MD5 and SHA-1
17C408.4	Examine wireless audit on an access point or a router and decrypt WEP and WPA using Net Stumbler .
17C408.5	Build a honey pot and examine the honeypot on network using KF Sensor .
17C408.6	Exhibit ethical principles in engineering practices
17C408.7	Perform task as an individual and / or team member to manage the task in time
17C408.8	Express the Engineering activities with effective presentation and report
17C408.9	Interpret the findings with appropriate technological / research citation.

17C409(PE-IV)/CS8074--Cyber forensics

17C409.1	Interpret the issues of security in Network layer and Transport layer.
17C409.2	Apply internet firewalls for trusted system.
17C409.3	Analyze various problems of Cyber Crime and apply techniques of computer forensics.
17C409.4	Identify the proper forensics tools for investigation.
17C409.5	Evaluate the validation of forensics data

17CS410(PE-V)/ CS8078- Green Computing

17C410.1	Illustrate the fundamentals of Green Computing.
17C410.2	Acquire knowledge to adopt green computing practices to minimize negative impacts on the environment
17C410.3	Analyze the Green computing Grid Framework
17C410.4	Understand the issues related with Green compliance
17C410.5	Develop various case studies applying Green IT Strategies and Applications

17CS411/CS8811-Project Work

17C411.1	Identify the problem by applying acquired knowledge.
17C411.2	Analyze and categorize executable project modules after considering risks.
17C411.3	Develop a prototype/experimental set-up necessary to complete the project
17C411.4	Discuss the results obtained to derive conclusions
17C411.5	Defend the work by preparing a report as per the University format.
17C411.6	Assess health, safety and legal relevant to professional engineering practices.
17C411.7	Comply the environmental needs and sustainable development.
17C411.8	Justify ethical principles in engineering practices
17C411.9	Perform multi-disciplinary task as an individual and / or team member to manage the project/task.
17C411.10	Comprehend the Engineering activities with effective presentation and report.
17C411.11	Interpret the findings with appropriate technological / research citation

HOD**PRINCIPAL**