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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE OUTCOME

REGULATION 2017

I YEAR / I SEMESTER

COURSE CODE & COURSE TITLE: HS8151 & Communicative English

CO1	Listen and recognize main ideas from different discourses in different accents
CO2	Speak clearly, confidently, comprehensively and communicate with one or many listeners using appropriate communicative strategies
CO3	Read different genres of text adopting various reading strategies
CO4	Write cohesively and coherently by using a wide range of vocabulary and organize ideas logically on a topic without grammatical errors
CO5	Determine the main and subordinate ideas, draws conclusion and summarize information from written material
CO6	Write cohesively and coherently and flawlessly avoiding grammatical errors,

COURSE CODE & COURSE TITLE: MA8151 & Engineering Mathematics I

CO1	Use both the limit definition and rules of differentiation to differentiate functions
CO2	Apply differentiation to solve maxima and minima problems
CO3	Evaluate integrals both by using Reimann sums and by using the fundamental theorem of calculus and determine the convergence/divergence of improper integrals and evaluate convergent improper integrals. Evaluate integrals using techniques of integration, such as substitution, partial fractions, integration by parts and improper integrals
CO4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables
CO5	Apply various techniques in solving different equations
CO6	Solve any simultaneous differential equation

COURSE CODE & COURSE TITLE: PH8151& Engineering Physics

CO1	Demonstrate the properties of elasticity and measure the different moduli of elasticity
CO2	Examine the characteristics of waves, Laser and optical fiber
CO3	Illustrate different modes of heat transfer through objects
CO4	Explain the black body radiation, properties of matter waves, and schrodinger equations
CO5	Classify the bravais lattices and different types of crystal structures
CO6	Select the suitable fiber for efficient optical communication system with less signal degradation.

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COURSE CODE & COURSE TITLE: CY8151& Engineering Chemistry

CO1	Explain the hardness of water, its types and estimation, boiler troubles and treatment of boiler feed water
CO2	Explain adsorption, types and theories of adsorption isotherm and its application in pollution abatement, theories of catalysis and applications
CO3	Understand the basic concepts of phase rule and its application to one and two component systems, properties, significance and appliances of alloys
CO4	Relate the significance of solid, liquid and gaseous fuels and to calculate the calorfic values of fuels
CO5	Illustrate the methods of harvesting energy from non/conventional energy sources
CO6	Use proper nano material in Fabrication Engineering

COURSE CODE & COURSE TITLE: GE8151 & Problem Solving & Python Programming

CO1	Discuss the logical solutions through Flowcharts, Algorithms and Pseudo code
CO2	Explain the syntax for python programming constructs.
CO3	Compute the flow of the program to obtain the programmatic solution.
CO4	Examine the programs with sub problems using 'Python' language.
CO5	Compute the compound data using Python lists, tuples, and dictionaries
CO6	Apply python programs to read and write data from/to files.

COURSE CODE & COURSE TITLE: GE8152 & Engineering Graphics

CO1	Discuss about conics and orthographic views of engineering components
CO2	Draw the projection of points, lines and planes
CO3	Classify solids and projection of solids at different positions
CO4	Show sectioned view of solids and development of surface
CO5	Draw isometric projection and perspective views of an object/solid
CO6	Apply the concept of drawing in practical applications.

COURSE CODE & COURSE TITLE: GE8161 & Problem Solving & Python Programming Laboratory

CO1	Write, test, and debug simple Python programs.
CO2	Apply the concept of conditionals and loops in Python programs.
CO3	Develop the Python programs step-wise by defining functions and calling them.
CO4	Use Python lists, tuples, dictionaries for representing compound data.
CO5	Read and write data from/to files in Python.
CO6	Apply the concept of Pygame.

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COURSE CODE & COURSE TITLE: BS8161& Physics and Chemistry Laboratory

Physics Laboratory

CO1	Determine and estimate the types of alkalinity and hardness of a given water sample.
CO2	Estimate the amount of copper content present in a given sample.
CO3	Determine the strength of an acid by using pH meter
CO4	Determine the strength of a pure acid and mixture of acids by using conductivity meter
CO5	Estimate the amount of iron content present in a given solution by means of potentiometric titration
CO6	Measure the wavelength of prominent spectral lines of Mercury Spectrum and particle size of powder using diffraction phenomenon and thickness of thin materials using interference phenomenon

Chemistry Laboratory

CO1	To evaluate moment of inertia of disc and rigidity modulus for thin wire using Torsion pendulum
CO2	To appraise Young's modulus of the beam by Non/Uniform bending method
CO3	To measure the wavelength of LASER, particle size and basic parameter of optical fibre using Semiconductor diode LASER
CO4	To examine the thermal conductivity of bad conductors using Lee's disc apparatus
CO5	To determine the wavelength of the prominent spectral lines
CO6	Calculate water quality parameters such as hardness, alkalinity of the given water sample.

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I YEAR / II SEMESTER

COURSE CODE & COURSE TITLE: HS8251 & Technical English

CO1	Breakdown the ideas in to its elementary constituents, analyze and act after a meaningfull thought process.
CO2	Analyze the phrase and passage and explicitly pass on the ideas meaning fully.
CO3	Manage to interpret the given phrase or the graphical rendering and review the contents well individually or as a group.
CO4	Concentrate on the communication aspect of complicated ideas and respond positively.
CO5	Debate the issues and find the rudiments of the problem individually and as a group.
CO6	Respond intelligently and seek clarification and understand completely.

COURSE CODE & COURSE TITLE: MA8251 &Engineering Mathematics II

CO1	Compute Eigen values and Eigen vectors of a matrix, diagonalize symmetric matrices and similar matrices
CO2	Explain gradients, potential functions, and directional derivatives of functions of several variables.
CO3	Compute line, surface and volume integral using Gauss divergence, Green's and stoke's theorem.
CO4	Discuss analytic functions in heat and fluid flow.
CO5	Extend the concept of contour integrals in evaluating Real integrals.
CO6	Discuss Laplace Transform methods to solve initial value problems for constant coefficient linear ODEs.

COURSE CODE & COURSE TITLE: PH8252 / Physics for Information Science

CO1	Discuss about Wiedemann Franz law and the conduction in solids.
CO2	Associate the concept of quantum electron theories with energy band structures.
CO3	Discuss the carrier concentration in semiconducting materials.
CO4	Explain the origin of magnetism and the properties of magnetic materials.
CO5	Discuss the working of Opto-electronic devices.
CO6	Summarize the basics of quantum structures and their applications in nano devices.

COURSE CODE & COURSE TITLE: BE8255 / Basic Electrical, Electronics and Measurement Engineering

CO1	Illustrate the behavior of electric circuits using fundamental laws and techniques.
CO2	Explain the operation of DC, AC and Special machines.
CO3	Summarize different energy sources, protective devices and its applications

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CO4	Outline the characteristics and applications of semiconductor diodes.
CO5	Summarize the characteristics and errors of the instruments
CO6	Explain the working of different types of Analog Instruments and transducers

COURSE CODE & COURSE TITLE: GE8291 / Environmental Science and Engineering

CO1	Summarize the values, threats, conservation of biodiversity and ecosystems
CO2	Discuss the sources, effects, control measures of different types of pollution, and solid waste management
CO3	Associate the effects of exploitation of Natural resources on environment
CO4	Summarize the water conservation methods and various environmental acts for environmental sustainability
CO5	Explain the effect of Human population and role of IT in environment and human health
CO6	Discuss scientific, technological, economic and social solutions to environmental problems

COURSE CODE & COURSE TITLE: CS8251 & Programming in C

CO1	Explain the syntax for C programming
CO2	Associate the programs in 'C' for real world situation
CO3	Apply the concepts of Arrays, Strings in 'C' language for user defined problems.
CO4	Apply the concept of functions and pointers.
CO5	Associate the programs with structure using 'C' language.
CO6	Discuss to read and write data from/to files in 'C' Programs.

COURSE CODE & COURSE TITLE: GE8261 & Engineering Practices Lab

CO1	Identify Tools and Techniques used for Sheet Metal Fabrication.
CO2	Use welding equipment to join the structures.
CO3	Demonstrate Plumbing requirements of domestic buildings.
CO4	Apply the skills of basic electrical engineering for house wiring practice
CO5	Measure various electrical quantities
CO6	Explain the working of electronic components and its utilization

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COURSE CODE & COURSE TITLE: CS8261 & C Programming Laboratory

CO1	Develop C programs for simple applications making use of basic constructs
CO2	Apply the concept of conditionals and loops in C programs.
CO3	Develop the C programs with arrays and strings.
CO4	Apply the concept of functions, recursion in C programs
CO5	Analyze the concept of pointers, and structures in C
CO6	Examine the use of sequential and random-access file processing.

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II YEAR / III SEMESTER

COURSE CODE & COURSE TITLE: MA8351 / Discrete Mathematics

CO1	Summarize the concept of elementary mathematical logical arguments.
CO2	Apply basic counting techniques to solve combinatorial problems.
CO3	Associate the applications of Graph theory models and data structures.
CO4	Describe the concepts and properties of algebraic structures such as groups, rings and fields.
CO5	Extend the concepts of Boolean algebra in the area of lattices.
CO6	Apply the knowledge of argumental discrete mathematical problems.

COURSE CODE & COURSE TITLE: CS8351 & Digital Principles and
System Design

CO1	Apply the Boolean functions using K-Map
CO2	Interpret Combinational circuits for a given functions using logic gates.
CO3	Recognise Synchronous Sequential circuits for the given condition.
CO4	Recognise Asynchronous Sequential circuits for the given condition.
CO5	Apply Programmable Logic towards memory management
CO6	Solve verilog codes for the design of digital circuits.

COURSE CODE & COURSE TITLE: CS8391& Data Structures

CO1	Describe linear data structures using array and linked list.
CO2	Apply data structures like stacks, queues in linear data structure.
CO3	Discuss non-linear data structures tree and its application.
CO4	Apply various algorithms in graph.
CO5	Solve searching, sorting and hashing techniques in data structures.
CO6	Interpret sorting algorithms for a give problem.

COURSE CODE & COURSE TITLE: CS8392 & Object Oriented Programming

CO1	Interpret Java programs using Object Oriented Programming principles
CO2	Explain Java programs with the concepts inheritance and interfaces
CO3	Contrast Java applications using exceptions and I/O streams
CO4	Relate Java applications with threads and generics classes
CO5	Develop interactive Java programs using swings

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CO6	Demonstrate simple Graphical User Interfaces

COURSE CODE & COURSE TITLE: EC8395 & Communication Engineering

CO1	Describe the concepts of analog modulation systems.
CO2	Illustrate pulse communication techniques
CO3	Summarize the concepts of digital modulation systems.
CO4	Implement the source coding techniques.
CO5	Explain the basic principles in the generation of spread spectrum signals.
CO6	Explain the methods of multiple access in communication systems.

COURSE CODE & COURSE TITLE: CS8381 & Data Structures Laboratory

CO1	Enumerate functions to implement linear and non-linear data structure operations
CO2	Perform practical applications of data structures
CO3	Design and develop appropriate linear / non-linear data structure operations for solving a given problem
CO4	Design new solutions for programming problems or improve existing code using learned algorithms and data structures
CO5	Apply the linear / non-linear data structure operations for a given problem based on the user needs
CO6	Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval

COURSE CODE & COURSE TITLE: CS8383 & Object-Oriented Programming Laboratory

CO1	Develop and implement Java programs for simple applications that make use of classes
CO2	Develop and implement Java programs with arraylist
CO3	Design applications using file processing
CO4	Build software development skills using java programming for real-world applications
CO5	Apply the concepts of classes, packages, interfaces, exception handling
CO6	Develop applications using generic programming and event handling

COURSE CODE & COURSE TITLE: CS8382 & Digital Systems Laboratory

CO1	Interpret Combinational circuits Using Logic gates.
CO2	Illustrate Combinational circuits Using MSI Devices
CO3	Practice various counters using Flip-flops.
CO4	Practice shift registers using Flip-flops

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CO5	Solve verilog codes for the design of digital circuits.
CO6	Demonstrate simple digital system

COURSE CODE & COURSE TITLE: HS8381 & Interpersonal Skills /

Listening and Speaking

CO1	Listen and react by giving verbal and non verbal feedback.
CO2	To make effective contribution in Group Discussions.
CO3	Compare and Contrast the ideas from multiple choices and summarize.
CO4	Respond confidently in both Formal and Informal conversations.
CO5	To Greet and to respond to Greetings.
CO6	Apply stress and intonation while speaking to make the presentation effective.

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II YEAR / IV SEMESTER

COURSE CODE & COURSE TITLE: MA8402 & Probability and Queueing Theory

CO1	Discuss the concepts of the fundamental Probability Theory, Baye's theorem
CO2	Associate the concepts of Standard distributions with real life phenomena.
CO3	Summarize the concepts of covariance, correlation and regression. central limit theorem
CO4	Explain the concept of Markov chain in terms of a transition probability matrix and transition diagram.
CO5	Extend birth and death processes which evolve with respect to time in a probabilistic manner
CO6	Interpret the Queuing models.

COURSE CODE & COURSE TITLE: CS8491 & Computer Architecture

CO1	Describe the basic structures of a computer system.
CO2	Explain the various arithmetic operations for computers.
CO3	Analyze pipelined control units and the different types of hazards in the instructions.
CO4	Interpret the concepts of parallel processing architecture
CO5	Summarize the fundamentals of memory system.
CO6	Describe the concepts of I/O system

COURSE CODE & COURSE TITLE: CS8492 & Database Management Systems

CO1	Discuss the fundamental concepts of relational database and SQL
CO2	Use ER model for Relational model mapping to perform database design effectively
CO3	Summarize the properties of transactions and concurrency control mechanisms
CO4	Outline the various storage and optimization techniques
CO5	Compare and contrast various indexing strategies in different database systems
CO6	Explain the different advanced databases

COURSE CODE & COURSE TITLE: CS8451 & Design and Analysis of Algorithms

CO1	Discuss the fundamental concepts problem solving algorithm, its types and the parameters to analyze those algorithms
CO2	Explain the Brute Force method and Divide and Conquer method to solve computing problems.
CO3	Explain the dynamic programming and greedy techniques to solve computing problems.
CO4	Describe how scientific problems can be solved using iterative method and how to cope with limitations of algorithm power.
CO5	Critically analyze the different algorithm design techniques for a given problem based on its time and space complexity.

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CO6	Modify existing algorithms to improve efficiency

COURSE CODE & COURSE TITLE: CS8493 & Operating Systems

CO1	Explain the overall view of the computer system and operating system
CO2	Identify various scheduling algorithm and deadlock prevention and avoidance algorithm
CO3	Compare and contrast various memory management schemes and file system functionalities
CO4	Discuss the performance of the various page replacement algorithms and interpret the file system implementation, sharing and protection mechanisms.
CO5	Demonstrate administrative tasks on Linux servers and to be familiar with the basics of Mobile OS.
CO6	Make use of various algorithms to solve computing problems

COURSE CODE & COURSE TITLE: CS8494 & Software Engineering

CO1	Identify the key activities in managing a software project and recognize different process model
CO2	Explain the concepts of requirements engineering and Analysis Modeling.
CO3	Outline the systematic procedures for software design and deployment.
CO4	Compare various testing and maintenance methods
CO5	Interpret the project schedule, estimate project cost and effort required.
CO6	Develop a software using the software engineering principles

COURSE CODE & COURSE TITLE: CS8481 & Database Management Systems Laboratory

CO1	Use typical data definitions and manipulation commands.
CO2	Design applications to test Nested and Join Queries
CO3	Implement simple applications that use Views
CO4	Make use of ER modeling and normalization to design and implement database
CO5	Implement applications that require a Front-end Tool
CO6	Critically analyze the use of Tables, Views, Functions and Procedures

COURSE CODE & COURSE TITLE: CS8461 & Operating Systems Laboratory

CO1	Illustrate the various CPU scheduling algorithms.
CO2	Implement deadlock avoidance and detection algorithms.
CO3	Implement semaphore concepts.
CO4	Create processes and implement IPC.
CO5	Analyze the performance of the various page replacement algorithms.

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CO6	Implement file organization and file allocation strategies.

COURSE CODE & COURSE TITLE: HS8461 & Advanced Reading & Writing

CO1	Read and evaluate the text intelligently.
CO2	Understand parts of speech and use appropriate connectives in writing a paragraph.
CO3	To write effective job application letter.
CO4	Implement speed reading techniques.
CO5	Perform critical thinking in various professional contexts.
CO6	To prepare descriptive and narrative writing.

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II YEAR / V SEMESTER

COURSE CODE & COURSE TITLE: MA8551 & Algebra & Number Theory

CO1	Summarize the notations and properties of algebraic structures such as groups, rings and fields.
CO2	Explain the concepts of finite fields and polynomials to solve problems in advanced algebra.
CO3	Associate the applications of divisibility theory and canonical decompositions.
CO4	Describe the concept of Diophantine equations and congruences and exhibit the efficient use of advanced algebraic techniques in number theory.
CO5	Extend the concepts of multiplicative functions and classical theorems.
CO6	Associate the knowledge of integrated approach to Number theory and abstract algebra.

COURSE CODE & COURSE TITLE: CS8591 & Computer Networks

CO1	Identify various layers of network and discuss the functions of physical layer
CO2	Discuss how data flows from one node to another node with regard to data link layer
CO3	Explain the different services of network layer
CO4	Compare the different transport layer protocols and their applicability based on user requirements
CO5	Describe the working of various application layer protocols
CO6	Evaluate the performance of network and analyze routing algorithms

COURSE CODE & COURSE TITLE: EC8691 & Microprocessor and Microcontroller

CO1	Explain the architecture and instruction set of Microprocessor
CO2	Discuss about System Bus Structure for Multiprocessor Configuration
CO3	Infer the functions of various interfacing integrated chips
CO4	Explain the architectures and instruction set of Microcontroller
CO5	Illustrate the functions of various interfacing devices with Microcontroller
CO6	Build an assembly language program for interfacing

COURSE CODE & COURSE TITLE: CS8501 & Theory of Computation

CO1	Design automata for any given pattern
CO2	Specify regular expression of string pattern
CO3	Write context free grammar for any language
CO4	Apply Turing machine to propose computation solutions
CO5	Interpret whether a problem is decidable or not
CO6	Interpret NP class problems

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COURSE CODE & COURSE TITLE: CS8592 & Object-Oriented Analysis and Design

CO1	Express the software design concepts with UML diagram.
CO2	Construct the domain model and design model to various use case scenarios.
CO3	Design software applications using object-oriented concepts.
CO4	Identify various scenarios based on software requirements.
CO5	Transform UML based software design into pattern-based design using design patterns.
CO6	Explain the various testing methodologies for object-oriented software.

COURSE CODE & COURSE TITLE: OCE551/ Air Pollution and Control Engineering

CO1	An understanding of the nature and characteristics of air pollutants, noise pollution and basic concepts of air quality management
CO2	Ability to identify, formulate and solve air and noise pollution problems
CO3	Ability to design stacks and particulate air pollution control devices to meet applicable standards.
CO4	Ability to select control equipments.
CO5	Ability to ensure quality, control and preventive measures
CO6	Understand the principle and design of control of Indoor/ particulate/ gaseous air pollutant and its emerging trends

COURSE CODE & COURSE TITLE: EC8681 & Microprocessor and Microcontroller Laboratory

CO1	Interpret the architecture and operation of microprocessor (8086).
CO2	Implement simple assembly language programs using instruction sets of microprocessor and microcontroller.
CO3	Compare instruction sets of 8086 microprocessor and 8051 microcontroller.
CO4	Implement assembly language programs using instruction sets of microcontroller.
CO5	Develop applications using instructions of microprocessors and microcontroller.
CO6	Interpret the architecture and operation of microcontroller(8051)

COURSE CODE & COURSE TITLE: CS8582 & Object Oriented Analysis and Design Laboratory

CO1	Make use of object oriented and design concepts to solve a given problem specifications
CO2	Identify and map basic software requirements in UML mapping
CO3	Apply design patterns to improve the software quality
CO4	Test the compliance of the software with SRS
CO5	Map the object oriented design to the developed code
CO6	Apply object oriented design to develop a software

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COURSE CODE & COURSE TITLE: CS8581 & Networks Laboratory

CO1	Implement various protocols using TCP and UDP
CO2	Compare the performance of different transport layer protocols
CO3	Use simulation tools to analyze the performance of various network protocols
CO4	Analyze various routing algorithms
CO5	Implement error correction codes
CO6	Explain Network simulator (NS) and Simulate Congestion Control Algorithms using NS

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MALANKARA HILLS, ELAVUVILAI, MARTHANDAM - 629 171
KANYAKUMARI DISTRICT, TAMILNADU, INDIA

Mar Ephraem
College of Engineering & Technology
(NAAC Accredited Institution)
Run by Catholic Diocese of Marthandam

Approved by AICTE, Affiliated To Anna University, Chennai

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Web: www.marephraem.edu.in, Ph: 04651 – 271111, 273111, Fax: 04651 – 270158, e-mail:marephraem@gmail.co

III YEAR / VI SEMESTER

COURSE CODE & COURSE TITLE: CS8651 & Internet Programming

CO1	Demonstrate simple website using HTML and CSS.
CO2	Build dynamic web pages with validation using Java Script objects and apply different event handling mechanisms.
CO3	Illustrate server side programs using Servlet and JSP.
CO4	Demonstrate simple web pages in PHP and to represent data in XML format.
CO5	Illustrate AJAX and web services to develop interactive web applications.
CO6	Develop interactive web applications for real world problems.

COURSE CODE & COURSE TITLE: CS8691 & Artificial Intelligence

CO1	List the characteristics and types of intelligent agents
CO2	Interpret search algorithms for any AI problem
CO3	Illustrate a problem using first order and predicate logic
CO4	Explain the appropriate agent strategy to solve a given problem
CO5	Develop software agents to solve a problem
CO6	Demonstrate applications for NLP that use Artificial Intelligence

COURSE CODE & COURSE TITLE: CS8601 & Mobile Computing

CO1	Understand the basic concepts of mobile computing
CO2	Explain the basics of mobile telecommunication systems
CO3	Illustrate the generations of telecommunication systems in wireless networks
CO4	Demonstrate the functionality of MAC, network layer and Identify a routing protocol for a given Ad hoc network
CO5	Explain the functionality of Transport and Application layers
CO6	Develop a mobile application using android/blackberry/ios/Windows SDK

COURSE CODE & COURSE TITLE: CS8602 & Compiler Design

CO1	Illustrate a lexical analyzer for a sample language.
CO2	Explain different parsing algorithms to develop the parsers for a given grammar.
CO3	Understand syntax-directed translation and run-time environment.
CO4	Understand intermediate code generation and run-time environment.
CO5	Apply code optimization techniques for programming construct.
CO6	Develop a scanner and a parser using LEX and YACC tools.

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COURSE CODE & COURSE TITLE: CS8603 & Distributed Systems

CO1	Elucidate the foundations and issues of distributed systems
CO2	Understand the various synchronization issues and global state for distributed systems.
CO3	Comprehend the Mutual Exclusion and Deadlock detection algorithms in distributed systems
CO4	Show the use of agreement protocols and fault tolerance mechanisms in distributed systems.
CO5	Relate the features of peer-to-peer and distributed shared memory systems
CO6	Interpret the real-time distributed system applications

COURSE CODE & COURSE TITLE: IT8076 / Software Testing

CO1	Outline the software testing criteria for developing test cases	
CO2	Build the test cases for software development	
CO3	Explain the various level of testing	
CO4	Discuss about the test metrics, measurements and Management process	
CO5	Make use of the latest test tool for functional and performance testing	
CO6	Apply test metrics and measurements	

COURSE CODE & COURSE TITLE: CS8661 & Internet Programming Laboratory

CO1	Construct web pages using HTML/XML and style sheets.
CO2	Build dynamic web pages with validation using javascript objects and apply different event handling mechanisms.
CO3	Develop dynamic web pages using server side scripting.
CO4	Use PHP programming to develop web applications.
CO5	Construct web applications using AJAX and web services.
CO6	Develop interactive web applications for real world problems.

COURSE CODE & COURSE TITLE: CS8662 & Mobile Application Development Laboratory

CO1	Illustrate mobile applications using GUI and Layouts.
CO2	Demonstrate mobile applications using Event Listener.
CO3	Experiment with mobile applications using Databases.
CO4	Make use of mobile applications using RSS Feed, Internal/External Storage, SMS, Multithreading and GPS.
CO5	Build own mobile app for simple needs.
CO6	Model various mobile applications using different application development frameworks.

COURSE CODE & COURSE TITLE: CS8611 & Mini Project

CO1	Choose problems with technical importance and societal contribution

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CO2	Identify and survey the relevant literature for getting exposed to related solutions
CO3	Build project plans with feasible requirements
CO4	Analyse, design and develop adaptable and reusable solutions
CO5	Implement and test solutions to trace against the user requirements
CO6	Deploy the solutions for better manageability and provide scope for improvability

COURSE CODE & COURSE TITLE: HS8581 & Professional Communication

CO1	To classify the content material and make effective presentations.
CO2	Employ adequate soft skills to successfully execute the job on hand.
CO3	To respond favorably to the values of others opinion and manage difficult situations in group discussions wisely.
CO4	To execute various skills in grooming for any profession.
CO5	To display the body language in a very pleasant manner and react to even tough situations with ease.
CO6	To perform intelligently during job interviews and be successful.

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IV YEAR / VII SEMESTER

COURSE CODE & COURSE TITLE: MG8591 / Principles of Management

CO1	Discuss the evolution of management thoughts and the challenges of managerial activities in a global business environment.
CO2	Explain the types of Planning and Decision making methodologies in Organizations..
CO3	Summarize various types of Organization structure and associated Human Resources activities for man-power utilization.
CO4	Explain about motivation theories, behavior, leadership theories and communication for effective directing.
CO5	Explain various Controlling techniques to maintain standards in Organizations.
CO6	Associate managerial functions and knowledge on international aspect for Organizational growth

COURSE CODE & COURSE TITLE: CS8792 & Cryptography and Network Security

CO1	Describe the fundamentals of networks security, security architecture, threats and vulnerabilities
CO2	Discuss the mathematical support for both symmetric and asymmetric key cryptography
CO3	Make use of symmetric key cryptographic algorithms to perform cryptographic operations
CO4	Solve cryptographic operations using public key cryptographic algorithms
CO5	Apply the various Authentication schemes to simulate different applications.
CO6	Explain various Security practices and System security standards

OURSE CODE & COURSE TITLE: CS8791 & Cloud Computing

CO1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
CO2	Explain the key and enabling technologies that help in the development of cloud.
CO3	Make use of NIST cloud computing architecture to solve architecture design challenges
CO4	Explain the core issues of cloud computing such as resource management and security.
CO5	Install and use current cloud technologies.
CO6	Illustrate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.

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COURSE CODE & COURSE TITLE: IT8075 & Software Project Management

CO1	Explain the software project evaluation techniques and planning
CO2	Demonstrate different software process models and cost estimation techniques
CO3	Outline the risk management process
CO4	Explain the need for Software Project Management and control

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CO5	Summarize the organizational behavior and working in teams
CO6	Understand staff selection process and the issues related to people management.

COURSE CODE & COURSE TITLE: CS8079 / Human Computer Interaction

CO1	Interpret the computer devices and HCI models.
CO2	Demonstrate the interactive design basics and HCI software process
CO3	Identify the stake holders requirements and choose the appropriate models.
CO4	Develop mobile HCI using mobile elements and tools by considering mobile eco system.
CO5	Design meaningful user interface.
CO6	Understand the importance of user feedback.

COURSE CODE & COURSE TITLE: OCY751& Waste Water Treatment

CO1	Understand various water treatment methods including adsorption and oxidation process.
CO2	Understand the various methods available for water treatment.
CO3	Acquire knowledge about the requirements of water and its preliminary water treatment.
CO4	Understand the various methods available for industrial water treatment.
CO5	Understand the various conventional water treatment methods.
CO6	Understand the various waste water treatment methods.

COURSE CODE & COURSE TITLE: CS8711 & Cloud Computing Laboratory

CO1	Configure various virtualization tools such as Virtual Box, VMware workstation.
CO2	Design and deploy a web application in a PaaS environment link layer
CO3	Learn how to simulate a cloud environment to implement new schedulers
CO4	Demonstrate generic cloud environment that can be used as a private cloud
CO5	Manipulate large data sets in a parallel environment.
CO6	Apply Hadoop single node cluster and run simple applications

COURSE CODE & COURSE TITLE: IT8761 & Security Laboratory

CO1	Develop code for classical Encryption Techniques to solve the problems.
CO2	Build cryptosystems by applying symmetric and public key encryption algorithms.
CO3	Construct code for authentication algorithms.
CO4	Develop a signature scheme using Digital signature standard
CO5	Demonstrate the network security system using open source tools
CO6	Develop code for classical Encryption Techniques to solve the problems

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IV YEAR / VIII SEMESTER

COURSE CODE & COURSE TITLE: CS8076/ Cyber Forensics

CO1	Understand the basics of computer forensics.
CO2	Apply a number of different computer forensic tools to a given scenario.
CO3	Analyze and validate forensics data.
CO4	Identify the vulnerabilities in a given network infrastructure
CO5	Implement real-world hacking techniques to test system security

COURSE CODE & COURSE TITLE: CS8078/ Green Computing

CO1	Adopt green computing practices to minimize negative impacts on the environment.
CO2	Understand energy saving practices in their use of hardware.
CO3	Evaluate technology tools that can reduce paper waste and carbon footprint by the stakeholders.
CO4	Understand the ways to minimize equipment disposal requirements.
CO5	Understand the issues related to Green Compliance.
CO6	Understand green computing grid framework.

COURSE CODE & COURSE TITLE: CS8811/ Project Work

CO1	Identify technically and economically feasible problems of social relevance
CO2	Plan and build the project team with assigned responsibilities
CO3	Identify and survey the relevant literature for getting exposed to related solutions
CO4	Analyse, design and develop adaptable and reusable solutions of minimal complexity by using modern tools
CO5	Implement and test solutions to trace against the user requirements
CO6	Deploy and support the solutions for better manageability of the solutions and provide scope for improvability

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