Course Outcomes

Regulation 2017

Course Name	Course Outcomes
SEMESTER I	
HS8151-Communicative English	CO1**:**Read articles of a general kind in magazines and newspapers. CO2: Participate effectively in informal conversations; introduce themselves and their friends and express opinions in English. CO3:Comprehend conversations and short talks delivered in English CO4:Write short essays of a general kind and personal letters and emails in English CO5: Apply basic grammar principles and be able to synthesize and transform sentences.
MA8151 Engineering Mathematics I	CO 1: Apply both the limit definition and rules of differentiation to different functions. solve maxima and minima of functions CO 2: Analyse and solve the partial differentiation for functions of several variables by various methods CO 3: Evaluate integrals by using various techniques of integration such as substitution, partial fraction and by parts CO 4:Apply integration to compute mutliple integrals, Area, Volume in Polar in addition to change of order CO 5:Apply various techniques in solving differential equations.
PH8151-Engineering Physics	CO 1: Apply knowledge on the basics of properties of matter and its applications. CO 2:Apply knowledge on the concepts of waves and optical devices and their applications in fibre optics. CO 3:Apply knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers. CO 4: Discuss on advanced physics concepts of quantum theory and its applications in tunneling microscopes. CO 5: Apply the basics of crystals, their structures and different crystal growth techniques.
CY8151 - Engineering Chemistry	CO 1:Design water treatment techniques by analyzing the requirement of boiler feed water and its problems CO 2:Analyse the various Industrial applications of Surface Chemistry and Catalysis by understanding the basic concepts CO 3: Develop the applications to single and two component systems by understanding the basic concepts of phase rule and the significance of alloys. CO 4: Analyzing the manufacture of various types of fuels and to interpret its calorific value during combustion CO 5:Evaluating the production of electricity from different non conventional energy sources and to analyze the types of batteries and its efficiency.

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GE8152 - Engineering Graphics	CO 1:Apply the fundamentals and standards of Engineering graphics CO 2:Design the basic geometrical constructions and multiple views of objects. CO 3:Apply orthographic projections of lines and plane surfaces. CO 4:Construct projections and solids and development of surfaces. CO 5: Visualize and to project isometric and perspective sections of simple solids.
GE8151 – Problem Solving and Python Programming	CO 1:Adapt and analyse and develop standard algorithm to solve problem CO 2:Identify and use the appropriate data types for variable being critically aware of memory CO 3:Design and implement control flow and function concept in python program for solving problem CO 4:Apply python data structure list, tuple and dictionary for representing complex data problem CO 5:Develop and Implement python file modules and function which reacts robust to exceptional input for solving real world problem
GE 8161 – Problem Solving and Python Programming Laboratory	CO 1: Develop and debug simple Python programs. CO 2: Implement Python programs with conditionals and loops. CO 3:Develop Python programs step-wise by defining functions and calling them CO 4:Apply Python lists, tuples, dictionaries for representing compound data CO 5 Apply the concepts of Read and write data from/to files in Python.
BS8161 - Physics & Chemistry Laboratory	CO 1:Apply physics principles of optics and thermal physics to evaluate engineering properties of material. CO 2: Apply principles of elasticity, optics and thermal properties for engineering applications. CO 3:Evaluating quantitative chemical analysis of water quality related Parameters CO4 : Knowledge of methods to determine the calorific value of fuels, perform flue gas analysis and combustion analysis. Apply the science for understanding corrosion and its prevention. CO5: Demonstrate a knowledge of superconducting and organic electronic materials.
SEMESTER II	
HS8251- Technical English	CO 1:Read technical texts and write area-specific texts effortlessly. CO 2:Listen and comprehend lectures and talks in their area of specialisation successfully. CO 3:Speak appropriately and effectively in varied formal and informal contexts. CO 4:Write reports and winning job applications. .

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MA8251 - Engineering Mathematics II	CO 1:Evaluate Eigen values and vectors, Diagonalization of matrices, positive definite matrices and similar matrices CO2: Analyze and to solve the problem of vector differentiation and vector integration CO 3:Analyze and to solve the problem of analytic function, conformal mapping and bilinear transformations CO 4:Evaluate the real integrals by applying the concept of complex integration CO 5:Analyse and apply the knowledge of Laplace Transform in solving ODE
PH8252 Physics for Information science	CO 1:Applythe knowledge on classical and quantum electron theories, and energy band structures, CO 2:Apply the knowledge on basics of semiconductor physics and its applications in various devices CO 3: Apply the knowledge on magnetic properties of materials and their applications in data storage, CO 4:Have the necessary understanding on the functioning of optical materials for optoelectronics, CO 5: Understand the basics of quantum structures and their applications in carbon electronics.
BE 8255 Basic Electrical, Electronics and Measurement Engineering	CO 1: Discuss the essentials of electric circuits and analysis. CO 2:Discuss the basic operation of electric machines and transformers CO 3: Apply knowledge on renewable sources and common domestic loads. CO 4: Apply measurement and metering for electric circuits.
GE8291 Environmental science and Engineering	CO1:Analyze the concept of an ecosystem and biodiversity to protect the environment CO2:Design the environmental friendly process in engineering to protect environment from various pollutions CO3:Evaluate the techniques which require optimum use of natural resources in future CO4: Demonstrate the need for sustainable development and to create awareness of important act and laws in respect to environment. CO5: Estimate the population and economic growth,energy requirement and demand.
CS 8251 Programming in C	CO 1:Develop and manage simple application in C using basic construct CO 2:Design and implement application to work with array and string CO 3:Develop and implement application related to good modular design within the framework of function pointer CO 4:Develop application in C using structure CO 5:Design and implement real time application using file processing

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GE 8261 Engineering Practice Laboratory	CO 1: Identify and Construct carpentry components and pipe connections including plumbing works. CO 2: Construct structure using welding equipments. CO 3:Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundary and fittings CO 4:Apply basic home electrical works and appliances Measure the electrical quantities
CS 8261 C Programming Laboratory	CO1: Apply the data types and syntax of C language. CO2: Develop C programs for simple applications making use of basic constructs, arrays and strings. CO3: Develop C programs involving functions, recursion, pointers, and structures. CO 4: Design applications using sequential and random access file processing. CO5:Demonstrate capability to choose appropriate algorithm to get the solutions for a problem
SEMESTER III	
MA 8351 Discrete Mathematics	CO1:Apply the concepts needed to test the logic of a program CO2: Design structures on many levels. CO3: Analyze the class of functions which transform a finite set into another finite set which relates to input and output functions in computer science. CO4: Develop the knowledge of the counting principles. CO5:Analyze the concepts and properties of algebraic structures such as groups, rings and fields.
CS 8391 Data Structures	CO 1: Apply abstract data types for linear data structures. CO 2:Identify the appropriate data structures for solving the problems CO 3:Apply the different linear and non-linear data structures to problem solutions. CO 4:Apply and analyze the different approaches to solve the problems algorithmically CO 5:Critically analyze the various sorting and Searching algorithms.
CS8351 Digital Principles and Systems Design	CO 1: Construct Boolean functions using KMap CO 2:Design and Analyze Combinational and Sequential Circuits CO 3:Implement designs using Programmable Logic Devices CO 4:Develop HDL code for combinational and Sequential Circuits CO5:Design and analyze synchronous and Asynchronous circuits.
CS8392 Object Oriented Programming	CO 1:Develop Java programs using OOP principles CO 2:Develop Java programs with the concepts inheritance and interfaces CO 3:Design Java applications using exceptions and I/O streams CO 4:Develop Java applications with threads and generics classes CO 5:Develop interactive Java programs using swings

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EC8395 Communication Engineering	CO 1:Analyze and design and develop pulse modulators and multiplex them. CO 2:Design combinational circuits using MSI devices CO 3:Design sequential circuits like registers and counters CO 4: Design combinational and sequential circuits using HDL CO 5: Apply Memory arrays for any Boolean function.
CS 8382 Digital Principles and System Design Laboratory	CO 1: Design simplified combinational circuits using basic logic gates. CO 2:Analyze and design analog modulation and demodulation system. CO 3:Analyze and design digital modulation and demodulation system. CO 4: Design combinational and sequential circuits using HDL CO 5: Apply Memory arrays for any Boolean function.
CS 8381 Data Structures Laboratory	CO 1:Apply linear and non-linear data structure operations CO 2:Identify and apply appropriate linear / non-linear data structure operations for solving a given problem CO 3: Apply the linear / non-linear data structure operations for a given problem CO 4:Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval CO 5: Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data.
CS8382 Object Oriented Programming Laboratory	CO 1: Develop and implement Java programs for simple applications that make use of classes, packages and interfaces. CO 2: Develop and implement Java programs with arraylist, exception handling and multithreading . CO 3: Design applications using file processing, generic programming and event handling. CO4: Apply dynamic memory management techniques using pointers, constructors, destructors, etc CO 5: Develop program/ Application using the concept of function overloading, operator overloading, virtual functions and polymorphism.
SEMESTER IV	
MA8402 - Probability and Queueing Theory	CO 1: Apply the fundamental knowledge of the concepts of probability and standard distributions which can scribe real life phenomenon. CO 2: Apply the basic concepts of one and two dimensional random variables in engineering applications CO 3: Apply the concept of random processes in engineering disciplines. CO 4:Analyze various queuing models CO 5:Identify and characterize phenomenon which evolve with respect to time in a probabilistic manner
CS 8451- Design and Analysis of Algorithms	CO 1:Design algorithms for various computing problems. CO 2:Apply the appropriate algorithms to solve the problems. CO 3:Analyze the time and space complexity of algorithms. CO 4:Critically analyze the different algorithm design techniques for a given problem. CO 5: Design and develop algorithms to improve existing algorithms efficiency.

Course Name	Course Outcomes
CS 8491 - Computer Organization and Architecture	CO 1:Illustrate the basic structure and operation of digital computer CO 2:Design arithmetic and logic unit CO 3:Design and Analyze pipelined control units CO 4: Illustrate parallel processing architectures. CO 5: Evaluate performance of memory systems.
CS8494- Software Engineering	CO 1:Identify the key activities in managing a software project and Compare different process models. CO 2: Apply the Concepts of requirements engineering and Analysis Modeling CO 3: Apply systematic procedure for software design and deployment. CO 4: Apply the concepts of various testing and maintenance. CO 5:Discuss project schedule, estimate project cost and effort required
CS 8493 - Operating Systems	CO 1: Demonstrate the basics concepts of operating systems like kernel, shell, types and views of operating systems. CO 2: Design of deadlock, prevention and avoidance algorithms and compare various memory Management schemes. CO 3:Apply various memory management techniques and concept of thrashing CO 4: Apply disk management and disk scheduling algorithms for better utilization of external memory and Recognize file system interface, protection and security mechanisms. CO 5: Identify and apply the operating system for appropriate applications.
CS 8492- Database Management Systems	CO 1:Design DB in SQL. Classify the modern and futuristic database applications based on size and complexity CO 2:Analyze and Map ER model to Relational model to perform database design effectively CO 3:Design DB using normalization criteria and optimize queries CO 4:Analyze, Compare and contrast various indexing strategies in different database systems CO 5:Analyze and Appraise how advanced databases differ from traditional databases.
CS8461 – Operating Systems Lab	CO 1:Compare the performance of various CPU Scheduling Algorithms CO 2:Implement Deadlock avoidance and Detection Algorithms CO 3:Implement Semaphores CO 4:Create processes and implement IPC CO 5:Analyze the performance of the various Page Replacement Algorithms.
CS8481 - Database Management Systems Lab	CO 1:Design Databases for applications. CO 2:Apply the Relational model, ER diagrams on real time applications. CO 3:Apply concurrency control and recovery mechanisms for practical problems. CO 4:Design the Query Processor and Transaction Processor. CO 5:Apply security concepts to databases.

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HS 8461Advanced Reading and writing	CO 1:Write different types of essays. CO 2:Write winning job applications CO 3:Read and evaluate texts critically. CO 4:Display critical thinking in various professional contexts. CO 5: Analyze a variety of communication acts.
SEMESTER – V	
MA8551 Algebra and Number Theory	CO 1:Apply the basic concepts of groups, rings and fields CO 2: Apply the fundamental concepts of advanced algebra CO 3:Demonstrate accurate &efficient use of advanced algebraic techniques CO 4:Demonstrate their manstry by solving non-trivial problems CO 5:Apply integrated approach to number theory and abstract algebra
CS8591- Computer Networks	CO 1: Identify the layer functions in Computer CO 2: Identify the layer functions in Computer CO 3: Identify the various components require to build Network. CO 4: Analyze and Design routing algorithm. CO 5: Identify and use various application layer protocol.
CS8501 - Theory of Computation	CO 1: Construct automata, regular expression for any pattern. CO 2: Apply Context free grammar for any construct. CO 3: Design Turing machines for any language. CO 4: Apply Turning machines for computation solutions. CO 5: Analyze whether a problem is decidable or not.
CS8592 Object Oriented Analysis and Design	CO 1:Analyse the software design with UML diagrams CO 2:Design Software applications using OO concept CO 3:Identify various scenarios based on the requirements. CO 4: Build UML based software design using design patterns. CO 5: Apply various testing Methodologies.
EC 8691- Microprocessors and Microcontrollers	CO 1: Design and execute progams based on 8086 microprocessor CO 2: Design memory interfacing circuits CO 3: Design and interface microprocessors with supporting CO 4: Design and analyze the architecture of 8051 microcontroller CO 5: Design and analyze the microcontroller based system.
OCE552 Geographic Information systems	CO 1:Apply the basic idea of fundamentals of GIS CO 2:Design different types of data models CO 3:Apply the knowledge about data inputs and topology CO 4:Apply the knowledge on data quality and standards CO 5:Design data management functions and data input.
CS8581 - Networks Laboratory	CO 1:Analyze the performance of different transport layer protocols. CO 2:Apply simulation tools to analyze the performance of various network protocols. CO 3:Analyze various routing algorithms. CO 4:Design error correction codes. CO5: Design various protocols using TCP and UDP.

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CS8582 - Object Oriented Analysis & Design Lab	CO 1: Demonstrate the Conceptual model of UML and SDLC. CO 2: Analyse classes modeling techniques and instances modeling techniques CO 3: Design interaction diagrams and their modeling techniques. CO 4: Develope activity diagram and their modeling techniques. CO5:Demonstrate component and deployment diagram
EC8681 – Microprocessors and Microcontroller Laboratory Lab	CO 1:Apply ALP Programmes for fixed and Floating Point and Arithmetic operations CO 2: Design different I/Os with processor CO 3:Design waveforms using Microprocessors CO 4:Develop Programs in 8051 CO 5: Analyse the difference between simulator and Emulator.
SEMESTER VI	
CS8691- Artificial Intelligence	CO 1: Design appropriate search algorithms for any AI problem CO 2: Apply first order and predicate logic to represent a problem CO 3: Apply the apt agent strategy to solve a given problem CO 4:Design software agents to solve a problem CO 5: Design applications for NLP that use Artificial Intelligence.
CS8651 Internet Programming	CO 1:Develop a basic website using HTML and Cascading Style Sheets CO 2:Design and develop a dynamic web page with validation using JavaScript CO 3:Design and develop a server side programs using Servlets and JSP CO 4:Build a simple web page in PHP with XML data format CO 5:Develop interactive web application using web service and AJAX
CS8602- Compiler Design	CO 1: Apply knowledge to understand the different phases of compiler. CO 2:Design a lexical analyzer for a sample language. CO 3:Apply different parsing algorithms to develop the parsers for a given grammar. CO 4:Apply knowledge to understand the syntax-directed translation and run-time environment. CO 5:Apply code optimization techniques and develop a simple code generator
CS8601 Mobile Computing	CO 1: Identify various components of mobile telecommunication system. CO 2: Illustrate the generation of telecommunication system in wireless network. CO 3: Analyze the functionality of MAC, Network layer and Identify routing protocol for given networks. CO 4: Analyze the functionality transport and Application layer. CO 5: Develop a Mobile Application using Android.

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CS8603 Distributed Systems	CO 1:Analyze the foundations and issues of distributed systems CO 2:Apply the various synchronization issues and global state for distributed systems. CO 3: Apply the Mutual Exclusion and Deadlock detection algorithms in distributed systems CO 4:Design the agreement protocols and fault tolerance mechanisms in distributed systems. CO 5:Analyse the features of peer-to-peer and distributed shared memory systems
IT8076 Software Testing	CO 1: Apply software testing knowledge and engineering methods to solve the problem. CO 2:Design software testing problems and solve them. CO 3: Design and conduct various types and levels of software testing. CO 4:Apply basic knowledge of contemporary issues in software testing & planning. CO 5: Identify the needs of software test automation and develop a test tool to support test automation.
CS8661 - Internet Programming Lab	CO 1:Develop a Web Page using HTML and CSS CO 2:Build a dynamic web page using java script CO 3:Develop a dynamic web page using Server side scripting CO 4:Develop Web application using PHP CO 5:Construct Web application using AJAX and web service
CS8662 – Mobile Application Development Laboratory	CO 1:Develop mobile applications using GUI and Layouts. CO 2:Develop mobile applications using Event Listener. CO 3:Develop mobile applications using Databases. CO 4:Develop mobile applications using RSS Feed, Internal/External Storage, SMS, Multi-threading and GPS. CO 5:Analyze and discover own mobile app for simple needs.
CS8611 Miniproject	CO 1: Apply knowledge to make links across different domain and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.. CO2 : Apply the skills to communicate effectively and to present ideas clearly and coherently to specific audience in both the written and oral forms. CO3 : Apply collaborative skills through working in a team to achieve common goals. CO 4: Design solution using appropriate methodology to take up challenging real world problems. CO 5:Demonstrate and build the project successfully by hardware requirements, coding, emulating and testing.
HS8581Professional Communication	CO 1: Design effective presentations CO 2: Develop confident in participating Group Discussions. CO 3: Develop an ability to attend job interviews and be successful in them. CO 4:Develop adequate Soft Skills required for the workplace CO5:Develop awareness of appropriate communication strategies

Course Name	Course Outcomes
SEMESTER VII	
MG8591 -Principle of Management	CO 1: Identify and communicate the purpose and functions of management. CO2: Demonstrate an understanding of the impact of globalisation on management and the role cultural factors play in the workplace. CO3: Analyse methods of employee compensation and their impact on employee motivation. CO 4: Develop the components of business strategy. CO 5: Apply the concepts of decision making in a business situation.
CS 8792 - Cryptography and Network Security	CO 1: Apply the fundamentals of networks security, security architecture, threats and vulnerabilities CO 2:Design the different cryptographic operations of symmetric cryptographic algorithms CO 3:Design the different cryptographic operations of public key cryptography CO 4: Apply the various Authentication schemes to simulate different applications. CO 5:Analyse various Security practices and System security standards.
CS 8791 Cloud computing	CO1: Analyse the main concepts, key technologies, and limitations of cloud computing. CO 2: Design the key and enabling technologies that help in the development of cloud. CO 3: Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models. CO 4: Analyse the core issues of cloud computing such as resource management and security. CO 5:Design and install current cloud technologies.
OME752 Supply Chain Management	CO1: Apply the basic concepts of decision phases, drivers and competitive supply chain strategies. CO2: Analyze factors influencing network design. CO3: Apply the design, routing and scheduling principles of transportation network in supply chain. CO4: Analyse sourcing and coordination effects of supply chain. CO5: Design the role of information technology and analyze the customer, supplier relationship coordination in a supply chain.
CS 8079 Human Computer Interaction	CO 1:Design effective dialog for HCI CO 2:Design effective HCI for individuals and persons with disabilities. CO 3:Analyse the importance of user feedback. CO 4: Develop the HCI implications for designing multimedia/ ecommerce/ e-learning Web sites. CO 5:Develop meaningful user interface.
CS 8711 Cloud Computing Laboratory	CO 1: Design various virtualization tools such as Virtual Box, VMware workstation. CO 2:Design and deploy a web application in a PaaS environment. CO 3: Analyse how to simulate cloud environment to implement new schedulers. CO 4: Develop and use a generic cloud environment that can be used as a private cloud. CO 5: Develop large data sets in a parallel environment.

Course Name	Course Outcomes
IT8761 Security Laboratory	CO 1: Develop code for classical Encryption Techniques to solve the problems. CO 2:Build cryptosystems by applying symmetric and public key encryption algorithms. CO 3: Construct code for authentication algorithms. CO 4: Develop a signature scheme using Digital signature standard. CO 5: Demonstrate the network security system using open source tools
SEMESTER VIII	
GE8076 Professional Ethics in Engineering	CO1: Apply the morals and values for professional excellence. CO2: Analyse the different ideas of engineering studies. CO3: Develop an aware about global issues of ethics and its applicability. CO4: Apply knowledge on how to managing the stress. CO5: Develop knowledge to realize engineering ethical issues in global level.
CS8080 Information Retrieval Techniques	CO 1:Apply open source search engine framework and explore its capabilities CO 2:Apply appropriate method of classification or clustering. CO3: Design and implement innovative features in a search engine. CO 4: Design and implement a recommender system. CO 5:Apply neighbourhood models.
CS8811 Project Work	CO 1: Apply knowledge to make links across different domain and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.. CO2 : Apply the skills to communicate effectively and to present ideas clearly and coherently to specific audience in both the written and oral forms. CO3 : Apply collaborative skills through working in a team to achieve common goals. CO 4: Design solution using appropriate methodology to take up challenging real world problems. CO 5:Demonstrate and build the project successfully by hardware requirements, coding, emulating and testing.