



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, Affiliated to Anna University, Chennai, India)

Kaikkurichi, Pudukkottai – 622 303

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATION 2013

COURSE OUTCOMES (CO)

SEMESTER I	
HS6151 TECHNICAL ENGLISH-I	
Students will be able to	
CO1	Apply the collaborative and social aspects of research and writing processes.
CO2	Comprehend that research and writing is a series of tasks, including accessing, retrieving, evaluating, analyzing and synthesizing appropriate data and information from sources that vary in content, format, structure and scope.
CO3	Use appropriate technologies to organize, present and communicate information to address a range of audiences and genres.
CO4	Design the multidisciplinary settings to manage projects as an individual, as a member or leader after taking the exercises like role-play, group discussion and making presentations
CO5	Model the life-long learning methods suitable for all the environments committed to professional ethics and responsibilities after inculcating the habit of reading and writing
CO6	Analyze and identify the root for effective managerial skills through different spoken discourse and excerpts.
MA6151 MATHEMATICS-I	
Students will be able to	
CO1	Describe a clear idea of matrix algebra pertaining Eigen values and Eigen vectors in addition dealing with quadratic forms
CO2	Learn infinite series and their convergence and acquire the knowledge of with limitations.
CO3	Use infinite series approximations for solutions arising in mathematical modeling.
CO4	Explain and characterize phenomena which evolve around circle of curvature and envelope.
CO5	Extend the function of a one variable to several variables. Multivariable functions of real variables arise inevitable in engineering.
CO6	Exposed to double and triple integration so that they can handle integrals of higher order which are applied in engineering field.
PH6151 ENGINEERING PHYSICS-I	
Students will be able to	
CO1	Classify the Bravais lattices and different types of crystal structures and growth technique.
CO2	Demonstrate the properties of elasticity and heat transfer through objects.
CO3	Explain black body radiation, properties of matter waves and Schrodinger wave equations
CO4	Describe and analyzing the quantum nature of radiation and matter to solve the real time societal and technological problems.
CO5	Illustrate the acoustic requirements, production and application of ultrasonics.
CO6	Examine the characteristics of laser and optical fiber.
CY6151 ENGINEERING CHEMISTRY-I	
Students will be able to	
CO1	Classify the polymers, different polymerization techniques and its uses.
CO2	Describe the laws of thermodynamics, various thermodynamics functions and their significance
CO3	Explain the photo physical processes and the components of analytical instruments.
CO4	Illustrate the phase diagrams, alloys and heat treatment processes
CO5	Discuss the synthesis, characteristics and the applications of nano materials.
CO6	Create the knowledge of nonmaterial's and their applications in fields like medicinal, electrical,



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	electronic, chemical, etc
GE6151 COMPUTER PROGRAMMING	
Students will be able to	
CO1	Explain the basic organization of computers, the number systems and write the pseudo code for algorithms and flow chart.
CO2	Develop 'C' programming fundamentals, looping statements and solve problems.
CO3	Design 'C' programs for arrays and strings
CO4	Use functions with pass by value and reference, pointers in programs.
CO5	Develop coding in 'C' for structures and unions with storage classes and pre-processor.
CO6	Design and execute C programs for simple applications.
GE6152 ENGINEERING GRAPHICS	
Students will be able to	
CO1	Construct the conic sections and special curves and outline their practical applications and sketch the orthographic views from pictorial views and models.
CO2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.
CO3	Draw the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.
CO4	Design the sectional views of solids like cube, prisms, pyramids, cylinders & cones and Development of its lateral surfaces.
CO5	Apply the principles of isometric projection and perspective projection of simple solids and truncated prisms, pyramids, cone and cylinders.
CO6	Build an engineering component using Paper drawing as well as in CAD.
GE6161 COMPUTER PRACTICES LABORATORY	
Students will be able to	
CO1	Prepare data using MS-word & Excel to visualize graphs, charts in MS-Excel.
CO2	Outline the given problem using flowchart and to program using Switch case & Control structures
CO3	Develop the code using decision making & looping statements.
CO4	Apply passing parameters using Arrays & Functions.
CO5	Use structure and Union for a given database and to bring out the importance of Unions over structure.
CO6	Design and implement C programs for simple applications.
GE6162 ENGINEERING PRACTICES LABORATORY	
Students will be able to	
CO1	Demonstrate wiring for a simple residential house, identify the ratings of various appliances like Fluorescent tube, incandescent lamp, etc.
CO2	Calculate the different Electrical quantities, measure the energy consumption using single phase energy meter.
CO3	Measure the resistance to earth of an electrical equipment, analyze AC signal parameters using CRO
CO4	Verify the Truth tables of Logic gates AND, OR, EOR and NOT, generate clock signal using suitable gates.
CO5	Develop soldering in a PCB, measure ripple factor of Half Wave Rectifier and Full Wave Rectifier.
CO6	Provide exPROGRAM OUTCOMESure to the students with hands-on experience on various basic engineering practices in Civil and Mechanical Engineering



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COURSE OUTCOMES (CO)

E6163 PHYSICS AND CHEMISTRY LABORATORY-I

Students will be able to

CO1	To apply the physics principles of Thermal physics and Properties of Matter to evaluate properties of materials
CO2	Evaluate the wavelength of spectral lines using spectrometer, the wavelength of laser, particle size, acceptance angle of an optical fiber using semiconductor diode laser and the thickness of a thin wire through interference fringes using Air wedge apparatus
CO3	Appraise the velocity of sound and compressibility of the liquid using ultrasonic interferometer and thermal conductivity for bad conductors using Lee's disc apparatus
CO4	Determine the DO content in water sample by winkler's method and molecular weight of polymer by Ostwald viscometer.
CO5	Find the strength of an acid using pH meter and conductometer.
CO6	Estimate the amount of weak and strong acids in a mixture by conductometer.

SEMESTER II

HS6251 TECHNICAL ENGLISH-II

Students will be able to

CO1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies.
CO2	Define the impact of the professional engineering solution in societal and environmental contexts with the help of the basic grammar taught to communicate effectively and confidently.
CO3	Write cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.
CO4	Read different genres of texts adopting various reading strategies.
CO5	Listen/view and comprehend different spoken discourses/excerpts in different accents.
CO6	Recognize, understand, and analyze the context within which language, information, and knowledge are produced, managed, organized, and disseminated.

MA6251 MATHEMATICS-II

Students will be able to

CO1	Solve ordinary differential equations that model most of the engineering problems.
CO2	Acquaint the concepts of vector calculus-like Gradient, Divergence, Curl, Directional derivative, Irrotational vector and Solenoidal vector.
CO3	Make to appreciate the e of using transforms to create new domain in which it is easier to handle the problem that is being investigated.
CO4	Develop an Explaining of the standard techniques of complex variable and mapping so as to enable the student to apply them with confidence, in application areas such as heat conduction, elasticity, fluid dynamics and flow of electric current.
CO5	Exposed to the concept of Cauchy's integral theorem, Taylor, Laurent expansions and Singular points.
CO6	Use Application of residue theorem to evaluate complex integrals.

PH6251 ENGINEERING PHYSICS – II

Students will be able to

CO1	Illustrate classical and quantum free electron theory and calculate carrier concentration in metals.
CO2	Describe the carrier concentration in semi conductors and identify the p-type and n-type semi conductor using hall effect.
CO3	Illustrate the special material properties such as magnetism.



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COURSE OUTCOMES (CO)

CO4	Discuss the super conductivity.
CO5	Explain the dielectrics, types of polarization, losses and breakdown
CO6	Discuss the properties, preparation and applications of metallic alloys, SMA, nano materials, NLO, Bio-materials.

CY6251 ENGINEERING CHEMISTRY-II

Students will be able to

CO1	Explain the problems of using hard water in boilers and the methods of treatment of water for boiler use.
CO2	Design the electrochemical cells and to identify the types of corrosion and the methods of preventing.
CO3	Illustrate the methods of harnessing energy from non-conventional energy sources.
CO4	Classify various engineering materials and their importance.
CO5	elate the significance of solid, liquid and gaseous fuels and to calculate the calorific values of fuels and the requirement of air for combustion in furnaces.
CO6	Analyze issues related to fuels and their synthesis and able to understand working of IC and diesel engines.

CS6201 DIGITAL PRINCIPLES AND SYSTEM DESIGN

Students will be able to

CO1	Perform arithmetic operations in any number system..
CO2	Explain the basics of Boolean algebra
CO3	Simplify the Boolean expression using K-Map and Tabulation techniques.
CO4	Use boolean simplification techniques to design a combinational hardware circuit.
CO5	Design and Analysis of a given digital circuit – combinational and sequential.
CO6	Design using PLD

GE6161 COMPUTER PRACTICES LABORATORY

Students will be able to

CO1	Prepare data using MS-word & Excel to visualize graphs, charts in MS-Excel.
CO2	Outline the given problem using flowchart and to program using Switch case & Control structures
CO3	Develop the code using decision making & looping statements.
CO4	Apply passing parameters using Arrays & Functions.
CO5	Use structure and Union for a given database and to bring out the importance of Unions over structure.
CO6	Design and implement C programs for simple applications.

CS6202 PROGRAMMING AND DATA STRUCTURES I

Students will be able to

CO1	Explain the basics of C programming.
CO2	Use the conditional and control statements of C appropriately for problems.
CO3	Distinguish the usage of Structures and Unions
CO4	Implement abstract data types for linear data structures.
CO5	Apply the different linear data structures to problem solutions.
CO6	Critically analyse the various algorithms like sorting, searching etc.,



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GE6163 PHYSICS AND CHEMISTRY LABORATORY-II

Students will be able to

CO1	Appraise the Young's modulus of the beam by uniform and non uniform bending method, the moment of inertia and Rigidity Modulus for thin wire using Torsion Pendulum.
CO2	Use Poiseuille's method for determining the coefficient of viscosity of the liquid
CO3	Estimate the refractive index of spectral lines for determining the dispersive power of a prism circuit.
CO4	Determine the type, amount of alkalinity, hardness in a given water sample.
CO5	Evaluate the amount of copper using EDTA method.
CO6	Examine the potentiometric redox titration and Conductometric precipitation titration.

CS6211 DIGITAL LABORATORY

Students will be able to

CO1	Evaluate the basic gates using boolean theorms
CO2	Use boolean simplification techniques to design a combinational hardware circuit.
CO3	Design and Implement combinational and sequential circuits.
CO4	Analyze a given digital circuit – combinational and sequential.
CO5	Design the different functional units in a digital computer system.
CO6	Design and Implement a simple digital system.

CS6212 PROGRAMMING AND DATA STRUCTURES LABORATORY I

Students will be able to

CO1	Design and implement C programs for implementing stacks, queues, linked lists.
CO2	Apply good programming design methods for program development
CO3	Illustration of usage of files
CO4	Apply the different data structures for implementing solutions to practical problems
CO5	Develop searching and sorting programs
CO6	Develop searching and sorting programs

SEMESTER III

MA6351 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

CO1	Develop boundary value problem using Fourier series analysis.
CO2	Explain about the higher order LPDE
CO3	Develop the complex form of Fourier series.
CO4	Develop mathematical tools for the solutions of partial differential equations
CO5	Apply Fourier transform techniques used in wide variety of situations
CO6	Develop Z transform techniques for discrete time systems

CS6301 PROGRAMMING AND DATA STRUCTURES II

Students will be able to

CO1	Design problem solutions using Object Oriented Techniques
CO2	Apply the concepts of data abstraction, encapsulation and inheritance for problem solutions.



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COURSE OUTCOMES (CO)

CO3	Use the control structures of C++ appropriately.
CO4	Critically analyze the various algorithms.
CO5	Apply the linear data structures to problem solutions.
CO6	Apply the non-linear data structures to problem solutions.
CS6302 DATABASE MANAGEMENT SYSTEMS	
Students will be able to	
CO1	Design Databases for applications.
CO2	Use the Relational model, ER diagrams.
CO3	Apply concurrency control and recovery mechanisms for practical problems.
CO4	Design the Query Processor and Transaction Processor.
CO5	Apply advanced concepts in databases.
CO6	Apply security concepts to databases.
CS6303 COMPUTER ARCHITECTURE	
Students will be able to	
CO1	Analyze the concept of instructions
CO2	Design arithmetic and logic unit.
CO3	Design and analyze pipelined control units
CO4	Evaluate performance of memory systems.
CO5	Explore the parallel processing architectures
CO6	Explain the concept of I/O systems
CS6304 ANALOG AND DIGITAL COMMUNICATION	
Students will be able to	
CO1	Apply analog communication techniques
CO2	Apply digital communication techniques
CO3	Use data communication techniques
CO4	Use pulse communication techniques
CO5	Analyze Source and Error control coding.
CO6	Utilize multi-user radio communication.
GE6351 ENVIRONMENTAL SCIENCE AND ENGINEERING	
Students will be able to	
CO1	Finding and implementing scientific, technological solutions to environmental problems
CO2	Finding and implementing economic and political solutions to environmental problems
CO3	Discuss about interrelationship between living organism and environment.
CO4	Describe about the surrounding environment, its functions and its value
CO5	Explain about dynamic process and features of earth's interior surface
CO6	Learn about natural resources, pollution control and waste management
IT6311 PROGRAMMING AND DATA STRUCTURES LABORATORY II	
Students will be able to	
CO1	Design and implement C++ programs for manipulating constructors, destructors and copy constructors
CO2	Design and implement C++ programs for manipulating friend function, friend class, inheritance, polymorphism
CO3	Design and implement C++ programs for manipulating stacks, queues, linked lists, trees, and



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COURSE OUTCOMES (CO)

	Graphs.
CO4	Apply good programming design methods for program development.
CO5	Apply the different data structures for implementing solutions to practical problems.
CO6	Develop recursive programs using trees and graphs.
IT6312 DATABASE MANAGEMENT SYSTEMS LABORATORY	
Students will be able to	
CO1	Design and implement a database schema for a given problem-domain
CO2	Populate and query a database
CO3	Create and maintain views, Synonyms, Sequence, Indexes, Save point..
CO4	Analyze relationship between database
CO5	Create and maintain tables using PL/SQL.
CO6	Prepare reports.
SEMESTER IV	
MA6453 PROBABILITY AND QUEUEING THEORY	
Students will be able to	
CO1	Explain the fundamental knowledge of the probability concepts.
CO2	Describe phenomenon which evolve with respect to time in a probabilistic manner..
CO3	Explain how to usage of covaraince, distribution.
CO4	Describe about the different random process model.
CO5	Acquire skills in analyzing queuing models.
CO6	Detail about the queuing model in advanced method
CS6551 COMPUTER NETWORKS	
Students will be able to	
CO1	Explain the fundamental knowledge of the probability concepts.
CO2	Describe phenomenon which evolve with respect to time in a probabilistic manner..
CO3	Explain how to usage of covaraince, distribution.
CO4	Describe about the different random process model.
CO5	Acquire skills in analyzing queuing models.
CO6	Detail about the queuing model in advanced method
CS6401 OPERATING SYSTEMS	
Students will be able to	
CO1	Design algorithms for various computing problems.
CO2	Apply the principles of concurrency.
CO3	Design deadlock, prevention and avoidance algorithms.
CO4	Compare and contrast various memory management schemes.
CO5	Design and Implement a prototype file systems.
CO6	Perform administrative tasks on Linux Servers.
CS6402 DESIGN AND ANALYSIS OF ALGORITHMS	
Students will be able to	
CO1	Learn about basics of algorithm with its notation
CO2	Analyze the time and space complexity of algorithms.



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COURSE OUTCOMES (CO)

CO3	Design the algorithm for sorting and searching methods
CO4	Critically analyze the different algorithm design techniques using dynamic and greedy technique
CO5	Design algorithms for various computing problems.
CO6	Modify existing algorithms to improve efficiency.

EC6504 MICROPROCESSOR AND MICROCONTROLLER

Students will be able to

CO1	Explain the fundamental knowledge of the probability concepts.
CO2	Describe phenomenon which evolve with respect to time in a probabilistic manner..
CO3	Explain how to usage of covaraince, distribution.
CO4	Describe about the different random process model.
CO5	Acquire skills in analyzing queuing models.
CO6	Detail about the queuing model in advanced method

EC6504 MICROPROCESSOR AND MICROCONTROLLER

Students will be able to

CO1	Design and implement programs on 8086 microprocessor.
CO2	Explain about the Bus Structure in Micro Processor
CO3	Design I/O circuits.
CO4	Discuss about usage of i/o circuits in real time application
CO5	Design and implement 8051 microcontroller based systems
CO6	Design Memory Interfacing circuits.

CS6403 SOFTWARE ENGINEERING

Students will be able to

CO1	Identify the key activities in managing a software project.
CO2	Compare different process models.
CO3	Concepts of requirements engineering and Analysis Modeling.
CO4	Develop the architectural design for software
CO5	Compare and contrast the various testing.
CO6	Description of how to manage the software development

CS6411 NETWORKS LABORATORY

Students will be able to

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	Illustrate simulation tools to analyze the performance of various network protocols.

CS6412 MICROPROCESSOR AND MICROCONTROLLER LABORATORY

Students will be able to

CO1	Write ALP Program for fixed and Floating Point and Arithmetic
CO2	Interface different I/Os with processor



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COURSE OUTCOMES (CO)

CO3	Generate waveforms using Microprocessors.
CO4	Execute Programs in 8051.
CO5	Explain the difference between simulator and Emulator
CO6	Working with MASM

CS6413 OPERATING SYSTEMS LABORATORY

Students will be able to

CO1	Implement deadlock avoidance, and Detection Algorithms
CO2	Compare the performance of various CPU Scheduling Algorithm
CO3	Critically analyze the performance of the various page replacement algorithms
CO4	Create processes and implement IPC
CO5	Develop the program in C using system calls.
CO6	Detail about shell programming

SEMESTER V

MA6566 DISCRETE MATHEMATICS

Students will be able to

CO1	Describe about the concepts needed to test the logic of a program.
CO2	Describe the ideas to identifying structures on many levels.
CO3	Elobrate functions to transform a finite set into another finite set.
CO4	Associate the applications of Graph theory models and data structures.
CO5	Detail about counting principles
CO6	Explain the concepts and properties of algebraic structures such as groups, rings and fields

CS6501 INTERNET PROGRAMMING

Students will be able to

CO1	Construct a basic website using HTML and Cascading Style Sheets.
CO2	Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.
CO3	Develop server side programs using Servlets and JSP
CO4	Construct simple web pages in PHP and to represent data in XML format.
CO5	Use AJAX and web services to develop interactive web applications
CO6	Explain about java-specific web services architecture

CS6502 OBJECT ORIENTED ANALYSIS AND DESIGN

Students will be able to

CO1	Explain the basics of Object oriented analysis and design
CO2	Design and implement projects using OO concepts
CO3	Use the UML analysis and design diagrams
CO4	Apply appropriate design patterns
CO5	Create code from design.
CO6	Compare and contrast various testing techniques

CS6503 THEORY OF COMPUTATION



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COURSE OUTCOMES (CO)

Students will be able to	
CO1	Discuss the basics of fourier transforms.
CO2	Perform frequency transforms for the signals.
CO3	Design IIR and FIR filters.
CO4	Finite word length effects in digital filters
CO5	Implement different frequency sampling techniques
CO6	Explain the fixed and floating point numbers representations

CS6504 COMPUTER GRAPHICS

Students will be able to	
CO1	Describe the graphics hardware devices, software used and different drawing algorithms
CO2	Apply two dimensional transformations and clipping techniques to graphical object
CO3	Design three-dimensional graphical objects and apply three dimensional transformations into graphical objects.
CO4	Create the illumination and color models.
CO5	Design an animation sequences.
CO6	Apply clipping techniques in graphics.

CS6511 CASE TOOLS LABORATORY

Students will be able to	
CO1	Design and implement projects using OO concepts.
CO2	How to map design to code.
CO3	Use the UML analysis and design diagrams.
CO4	Apply appropriate design patterns.
CO5	Create code from design.
CO6	Compare and contrast various testing techniques.

CS6512 INTERNET PROGRAMMING LABORATORY

Students will be able to	
CO1	Construct Web pages using HTML/XML and stylesheets..
CO2	Build dynamic webpages with validation using Java Script objects and by applying different event handling mechanisms.
CO3	Develop dynamic webpages using server side scripting
CO4	Use PHP programming to develop web applications.
CO5	Construct web applications using AJAX and web services.
CO6	Design Client Server applications.

CS6513 COMPUTERGRAPHICS LABORATORY

Students will be able to	
CO1	Make use of algorithms to draw 2D and 3D objects
CO2	Show transformations and projections for 2D and 3D objects
CO3	Manipulate a graphical object using clipping algorithms and viewing technique
CO4	Use an image editing tool for image manipulation and enhancement
CO5	Utilize for image manipulation and enhancement the authoring tool to develop a 3D scene and to perform



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COURSE OUTCOMES (CO)

	2D animation
CO6	Design multimedia presentation/Game/Project.
SEMESTER VI	
CS6601 DISTRIBUTED SYSTEMS	
Students will be able to	
CO1	Discuss trends in Distributed Systems
CO2	Apply network virtualization.
CO3	Apply remote method invocation and objects.
CO4	Explain the ideas behind the peer to peer and file system
CO5	Analyze about Synchronization in Distributed Systems
CO6	Design process and resource management systems
IT6601 MOBILE COMPUTING	
Students will be able to	
CO1	Explain the basics of mobile telecommunication system
CO2	Choose the required functionality at each layer for given application.
CO3	Description of the services provided in network layer and transport layer.
CO4	Identify solution for each functionality at each layer.
CO5	Use simulator tools and design Ad hoc networks.
CO6	Develop a mobile application..
CS6660 COMPILER DESIGN	
Students will be able to	
CO1	Design and implement a prototype compiler
CO2	Understand the Conversion of Regular Expression to Automata,
CO3	Design and implement a parser
CO4	Identify the SDD and implement the Type Systems.
CO5	In detail about the storage Organization
CO6	Apply the various optimization techniques
IT6502 DIGITAL SIGNAL PROCESSING	
Students will be able to	
CO1	Discuss the basics of fourier transforms.
CO2	Perform frequency transforms for the signals.
CO3	Design IIR and FIR filters.
CO4	Finite word length effects in digital filters
CO5	Implement different frequency sampling techniques
CO6	Explain the fixed and floating point numbers representations
CS6659 ARTIFICIAL INTELLIGENCE	
Students will be able to	
CO1	Identify problems that are amenable to solution by AI methods.



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CO2	Identify appropriate AI methods to solve a given problem
CO3	Formalize a given problem in the language/framework of different AI methods..
CO4	Implement basic AI algorithms.
CO5	Design an empirical evaluation of different algorithms on a problem formalization
CO6	Carry out an empirical evaluation of different algorithms on a problem formalization

GE6757 TOTAL QUALITY MANAGEMENT

Students will be able to

CO1	Explain the basics of Total Quality Management
CO2	Elaborate key concepts of Customer satisfaction
CO3	Learn about the principles and improvement process
CO4	Describe about traditional tools for quality
CO5	Identify the sigma concepts for quality function development
CO6	Explain the key constraints for Quality Systems

IT6611 MOBILE APPLICATION DEVELOPMENT LABORATORY

Students will be able to

CO1	Design and Implement various mobile applications using emulators.
CO2	Know the components and structure of mobile application development frameworks for Android OS based mobiles
CO3	Know the components and structure of mobile application development frameworks for windows OS based mobiles.
CO4	How to work with various mobile application development frameworks
CO5	Design concepts and issues of development of mobile applications.
CO6	Deploy applications to hand-held devices

IT6612 COMPILER LABORATORY

Students will be able to

CO1	Implement the different Phases of compiler using tools
CO2	Analyze the control flow and data flow of a typical program
CO3	Usage of the LEX and YACC tools
CO4	Implement the strategies for storage allocation.
CO5	Optimize a given program
CO6	Generate an assembly language program equivalent to a source language program

GE6674 COMMUNICATION AND SOFT SKILLS LABORATORY

Students will be able to

CO1	To be totally learner-centric with minimum teacher intervention as the course revolves around practice
CO2	Suitable audio/video samples from Podcast/YouTube to be used for illustrative purposes.
CO3	Portfolio approach for writing to be followed. Learners are to be encouraged to blog, tweet, text and email employing appropriate language
CO4	GD/Interview/Role Play/Debate could be conducted off the laboratory (in a regular classroom)



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CO5	Expose to telephonic interview and video conferencing.
CO6	Learners are to be assigned to read/write/listen/view materials outside the classroom as well for gaining proficiency and better participation in the class.

SEMESTER VII

CS6701 CRYPTOGRAPHY AND NETWORK SECURITY

Students will be able to

CO1	Explain various encryption techniques and the basics of number theory and apply algorithm to test the numbers
CO2	Use block cipher methods to calculate the ciphers and summarize public key cryptography
CO3	Discuss authentication algorithm and apply various authentication functions and secure algorithms.
CO4	Evaluate firewall rules and policy setup implementations
CO5	Design secure applications
CO6	Inject secure coding in the development applications

CS6702 GRAPH THEORY AND APPLICATIONS

Students will be able to

CO1	Define basic concepts & terminologies of Graph, Isomorphism, Trees and its properties
CO2	Analyze solution for Konigsberg bridge problem using Euler's graph
CO3	Analyze a solution for a maximum flow in network using Network Flow Graph theory
CO4	Describe the principles of Inclusion and Exclusion, Binomial theorem and traffic problem.
CO5	Apply permutation and Combination and solve seating arrangement problem.
CO6	Evaluate precise and accurate mathematical definitions of objects in graph theory

CS6703 GRID AND CLOUD COMPUTING

Students will be able to

CO1	Use of the basics of distributed computing and grid
CO2	Apply grid computing techniques to solve large scale scientific problems
CO3	Apply the concept of virtualization
CO4	List out the deployment models of cloud
CO5	Use the grid and cloud tool kits
CO6	Apply the security models in the grid and the cloud environment

CS6704 RESOURCE MANAGEMENT TECHNIQUES

Students will be able to

CO1	Solve the linear programming problems using Graphical method and implex method
CO2	Solve specialized Linear programming problems like transportation and assignment problems.
CO3	Using Branch & Bound technique solve real world problems.
CO4	Compute critical path analysis to solve real life project schedule time and timely delivery
CO5	Analyze the role & applications of PERT/COST/CPM for project scheduling
CO6	Evaluate the optimization problems using simple method.

CS6003 AD HOC AND SENSOR NETWORKS



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATION 2013

COURSE OUTCOMES (CO)

Students will be able to	
CO1	Detail about the needs of wireless Adhoc and sensor network in current scenario of technology
CO2	Explain the concepts, network architectures and applications of ad hoc and wireless sensor networks
CO3	Analyze the protocol design issues of ad hoc and sensor networks.
CO4	Design routing protocols for ad hoc and wireless sensor networks with respect to some protocol with design issues
CO5	Detail about how various signal processing and coding techniques combat channel uncertainties
CO6	Evaluate the QoS related performance measurements of ad hoc and sensor networks.
CS6007 INFORMATION RETRIEVAL TECHNIQUES	
Students will be able to	
CO1	Make use of an open source search engine framework and explore its capabilities
CO2	Apply appropriate method of classification or clustering.
CO3	Design and implement innovative features in a search engine.
CO4	Design and implement a recommender system
CO5	Explain about the concepts of Collaborative Filtering
CO6	Apply the algorithm for Neural Network Model
IT6712 SECURITY LABORATORY	
Students will be able to	
CO1	Implement the cipher techniques
CO2	Implement the Encryption techniques
CO3	Develop the various security algorithms
CO4	Learn about secure data transfer
CO5	Use different open source tools for network security
CO6	Analysis different open source tools for network security
IT6713 GRID AND CLOUD COMPUTING LABORATORY	
Students will be able to	
CO1	Use the grid and cloud tool kits
CO2	Apply the Virtualization
CO3	Design applications on the Grid
CO4	Implement applications on the Grid
CO5	Design applications on the Cloud.
CO6	Implement applications on the Cloud.

SEMESTER VIII

CS6801 MULTI CORE ARCHITECTURES AND PROGRAMMING

Students will be able to	
CO1	Describe the parallel architecture and parallel programming model
CO2	Analyze the issues related to various challenges in parallel programming model
CO3	Develop parallel programming applications using OpenMp.
CO4	Design and Develop distributed programming application using OpenMPI
CO5	Compare and analyze parallel programming model for serial processor and parallel processor



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REGULATION 2013

COURSE OUTCOMES (CO)

	implementation
CO6	Analyze OpenMP and OpenMPI implementations.
IT6011 KNOWLEDGE MANAGEMENT	
Students will be able to	
CO1	Usage about Introduction to Yoga and meditation
CO2	Apply ethics in society,
CO3	Discuss the ethical issues related to engineering and realize the responsibilities and rights in the society.
CO4	Analyze the Weapons Development – Engineers as Managers
CO5	Analyze the concept of Risk Benefit Analysis and Reducing Risk
CO6	Gain knowledge about Senses of ‘Engineering Ethics’
GE6075 PROFESSIONAL ETHICS IN ENGINEERING	
Students will be able to	
CO1	Describe basic purpose of profession, professional ethics and various moral and social issues
CO2	Outline of professional rights and responsibilities of a Engineer, safety and risk benefit analysis of Engineer
CO3	Utilize acquiring knowledge of various roles of Engineer In applying ethical principles at various professional levels
CO4	Define professional Ethical values and contemporary issues
CO5	Relate in competitive and challenging environment to contribute to industrial growth.
CO6	Choose academic learning with experimental learning in a profession.
IT6811 PROJECT WORK	
Students will be able to	
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