2013-2014

COMPUTER SCIENCE ENGINEERING

ACADEMIC YEAR 2013-2014

S1S2 CSE (2013 Batch)

13.101	Engineering Mathematics I	Prabhiya
13.102	Engineering physics	Sreeti Gangadharan
13.103	Engineering Chemistry	Dr. Salini Sasi
13.104	Engineering graphics	K S Sasi
13.105	Engineering Mechanics	Anish Nair
13.106	Basic Civil Engineering	Lekshmi
13.107	Basic Mechanical Engineering	John P George
13.108	Basic Electrical & Electronics Engineering	Karthika V S
13.109	Foundations of Computing and Programming in C	Dhanunath R
13.110	Mechanical Engineering workshop	VK Soman
13.111	Electrical & Electronics Engineering Workshop	Pallavi Vijayan

COURSE OBJECTIVES AND COURSE OUTCOMES

13.101 ENGINEERING MATHEMATICS I

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	This course provides students an insight into the various applications of differentiation, partial differentiation techniques	At the end of the course, the students will be familiar with various concepts of calculus which are essential for engineering.
2	The methods for solving differential equations and the concept of linear algebra are also introduced as a part of this course.	They'll also become acquainted with the basic ideas of Laplace transforms and linear algebra
3	This course provides students an insight into the various applications of multiple integrals	
4	This course provides students an insight into the various applications of Laplace transforms.	

COURSE OBJECTIVES AND COURSE OUTCOMES

13.102: ENGINEERING PHYSICS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes On completion of course the students will be able to:
1	**Dynamics of mechanical and electrical oscillation using Fourier series and integrals; time and frequency representations for driven damped oscillators, resonance; one-dimensional waves in classical mechanics and electromagnetism; normal modes.**	**Solve for the solutions and describe the behavior of a damped and driven harmonic oscillator in both time and frequency domains. Damped and Forced Oscillations oscillating system problems.**
2	**The fundamental principles of photonics that complement the topics in the optics and laser courses and to help students develop problem-solving skills applicable to real-world photonics problems.**	**Define and explain the propagation of light in conducting and non-conducting media.**
	This course equip the students to assimilate engineering and technology through the exposure of fundamentals of Physics	**Define and explain the physics governing laser behaviour and light matter interaction ting and non-conducting media.**
4		**Apply wave optics and diffraction theory to a range of problems**
5		**Explain and calculate the physical effects of acoustic reflections, absorption, scattering, diffusion, diffraction, and propagation losses.**
6		**Use advanced theoretical, numerical, and experimental techniques to model and analyze acoustical elements in musical instruments, the human voice, room acoustics, and audio.**

COURSE OBJECTIVES AND COURSE OUTCOMES

13.103: ENGINEERING CHEMISTRY

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To impart sound knowledge in the different fields of theoretical chemistry so as to apply it to the problems in engineering field.	The confidence level of students will be improved to tackle problems in engineering field related to chemical aspects.
2	To develop analytical capabilities of students so that they can characterize, transform and use materials in engineering and apply knowledge gained in solving related engineering problems.	The students gain capability in fabricating novel materials with properties that find various engineering applications
	To acquire knowledge about desalination of brackish water and treatment of municipal water.	The students will be equipped to take up chemistry related topics as part of their project works during higher semesters of the course.
4	To gain the knowledge of conducting polymers, bio-degradable polymers and fibre reinforced plastics.	Develop innovative methods to produce soft water for industrial use and potable water at cheaper cost.
5	To understand mechanism of corrosion and preventive methods.	Substitute metals with conducting polymers and also produce cheaper biodegradable polymers to reduce environmental pollution. Design economically and new methods of synthesis nano materials.
6	To have an idea and knowledge about the Chemistry of Fuels.	Have the knowledge of converting solar energy into most needy electrical.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.104: ENGINEERING GRAPHICS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Enable the students to effectively communicate graphic representation as per standards	Able to prepare the orthographic projections of points and straight lines placed in various quadrants
2	To develop imagination skill in students and represent them effectively in a paper	Demonstrate the ability to draw orthographic projections of various solids.
	Learn to sketch and take field dimensions.	Ability to draw and interpret the sectioned views of solids
4	Learn to take data and transform it into graphic drawings.	Ability to draw the developments of various solids
5		Will be confident in preparing the isometric and perspective views of various solids.
6		Ability to draw the projections of intersection of solids and perform free hand sketching.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.105: ENGINEERING MECHANICS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To apply the principles of mechanics to practical engineering problems.	Understand the fundamental concepts of mechanics.
2	To identify appropriate structural system for studying a given problem and isolate it from its environment.	Students would be able to apply and demonstrate the concepts of resultant and equilibrium of force system.
	To develop simple mathematical model for engineering problems and carry out static analysis.	Students would be able to determine the properties of planes and solids.
4	To develop simple mathematical model for engineering problems and carry out static analysis.	Understand the concepts of moment of inertia.
5		Students would be able to apply fundamental concepts of dynamics to practical problems.
6		Understand the basic elements of vibration.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.106: BASIC CIVIL ENGINEERING

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	This course imparts to the students, the fundamentals of civil engineering and creates awareness on various issues related to our living environment and their remedies	At the end of the course, the students will be familiar with the different stages of building construction, various materials used for construction and environmental issues
2	To inculcate the essentials of civil engineering field to the students of all branches	The students will be able to illustrate the fundamental aspects of civil engineering
	To provide the students an illustration of the significance of the civil engineering profession satisfying societal needs.	The students should able to plan a building
4	To inculcate the essentials of civil engineering field to the students of all branches	Students will be able to explain about surveying for making horizontal and vertical measurements.
5	.	They will able to illustrate the uses of various building materials and construction of different components of a building.
6		The students will be able to illustrate the fundamental aspects of civil engineering

COURSE OBJECTIVES AND COURSE OUTCOMES

13.107: BASIC MECHANICAL ENGINEERING

Sl.	Course Objectives	Subject Learning Outcomes or

No.		Course Outcomes
		On completion of course the students will be able to:
1	**To expose the students to the thrust areas in Mechanical Engineering and their relevance by covering the fundamental concepts**	**The student will be able to understand the inter dependence of the thrust areas in Mechanical Engineering and their significance leading to the development of products, processes and systems.**
2	**This subject covers wide areas of Mechanical Engineering and is intended for exposing the students to the various theoretical and practical aspects of thermal engineering, fluid mechanics and machines, manufacturing and power transmission.**	**The student can able to understand the inter dependence of the thrust areas in Mechanical Engineering and their significance leading to the development of products and systems.**
3		**The students can able to understand working of automobiles.**
4		**Able to understand about various mechanical processes.**

COURSE OBJECTIVES AND COURSE OUTCOMES

13.108 BASIC ELECTRICAL & ELECTRONICS ENGINEERING

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To impart a basic knowledge in Electrical Engineering with an understanding of fundamental concepts.	Gain preliminary knowledge in basic concepts of Electrical Engineering.
2	To impart the basic knowledge about the Electric and Magnetic circuits.	Discuss the working of various dc and ac machines
	To inculcate the understanding about the AC fundamentals.	To predict the behavior of any electrical and magnetic circuits.
4	To understand the working of various Electrical Machines.	To identify the type of electrical machine used for that particular application.
5		To wire any circuit depending upon the requirement.
6		Understand working principle of various analogue electrical measuring instruments.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.109 FOUNDATIONS OF COMPUTING AND PROGRAMMING IN C

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Introduce Von-Neumann concept, Number systems in Data representation, perform arithmetic operations on number systems, ASCII and EBCDIC Character representations	Able to identify different components of computer hardware.
		Know about different number systems like binary, octal, hexadecimal etc
		Able to perform different arithmetic operations on number systems
		Basic idea about ASCII and EBCDIC character representations.
2	Understand different types of programming languages, concept of operating systems, compiler, assembler & interpreter, problem solving concepts, study algorithm and flowcharts, documentation, debugging, testing & verification of programs.	Brief overview of different programming languages.
		Aware of basic concepts of OS, compiler, interpreter and assembler
		Able to analyse and design simple problem solutions.
		Able to document, debug, test and verify a program correctly.
3	Understand important concepts of C programming, pre-processor directives, data types, operators, input and output, control statements, arrays, structure and union, storage classes, sorting and searching	Awareness about different types of pre-processor directives and storage classes.
		Able to develop simple C programs using arrays and structures
		Able to develop programs for sorting and searching simple things
4	Study the basic concepts of pointers, dynamic memory allocations, functions, files, command line programming	Develop C programs that help to store solutions permanently using files, pointers and functions.
		Awareness about the need and use of dynamic memory allocation in programs
		Basic idea about command line programming

COURSE OBJECTIVES AND COURSE OUTCOMES

13.110: MECHANICAL ENGINEERING WORKSHOP COURSE

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	**The Engineering Workshop Practice for engineers is a training lab course spread over entiresemester.**	**Student will be able to make various joints in the given object with the available work material.**
2	**The modules include training on different trades like Fitting, Carpentry, etc… which makes the students to learn how various joints are made using wood and other metal pieces.**	**Student will be able to know how much time a joint will take for the assessment of time**
	Familiarization of basic manufacturing hand tools and equipment like files, hacksaw, spanner chisel hammers, etc.	**Knowledge achieved to explain the various manufacturing process in the basic mechanical engineering workshop sections- smithy, carpentry, assembling, welding etc.**
4	**Familiarization of various measuring devises like vernier height gauge, vernier caliper, micrometer, steel rule etc.**	**Identify the various hand tools used in the basic mechanical engineering workshop sections-smithy, carpentry, assembling, welding etc.**
5		**Able to choose different measuring devises according to the work.**
6		**Skill achieved to construct models by using basic mechanical workshop sections like welding, moulding, smithy, carpentry etc.**

COURSE OBJECTIVES AND COURSE OUTCOMES

13.111: ELECTRICAL & ELECTRONICS ENGINEERING WORKSHOP

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To enable the student to have the practical skills for Electrical wiring and basic awareness of safety measures.	On successful completion of this course the student will have fundamental ideas about the electrical and electronic circuit, and will be able to apply safety practices to avoid accidents.
2	To impart fundamental knowledge in the use of electronic components to set up circuits by soldering and testing them.	Familiarity with supply arrangements and their limitations, knowledge of standard voltages and their tolerances, safety aspects of electrical systems and importance of protective measures in wiring systems.
3	The objective of this course is to familiarize the students with commonly used components, accessories and measuring equipment in Electrical installations.	Knowledge about the types of wires, cables and other accessories used in wiring. Creating awareness of energy conservation in electrical systems.
4	The course also provides hands on experience in setting up of simple wiring circuits	Students should be able to wire simple lighting circuits for domestic buildings, distinguish between light and power circuits.
5	This course gives the basic introduction of electronic hardware systems and provides hands-on training with familiarization, identification, testing, assembling, dismantling, fabrication and repairing such systems by making use of the various tools and instruments available in the Electronics Workshop	To measure electrical circuit parameters and current, voltage and power in a circuit.
6		Familiarity with backup power supply in domestic installation

S3 CSE (2012 Batch)

08.301	Engineering Mathematics II	Sreelekha T R
08.302	Problem Solving and Programming in C	Amitha R
08.303	Discrete Structures	Sangeetha
08.304	Electronic Circuits	Saranya Devi S
08.305	Digital System Design	Remya M R
08.306	Computer Organization	Sreyas L
08.307	Electronic Circuits Lab	Saranya Devi S
08.308	Programming Lab	Amitha R

COURSE OBJECTIVES AND COURSE OUTCOMES

08.301 ENGINEERING MATHEMATICS II

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes On completion of course the students will be able to:
1	Learn to work with vectors in two and three dimensions.Learn to work with multivariable functions.Learn to work with vector functions.	Apply mathematics at this level to the real world, especially in the areas of physics and geometry.Find areas of plane regions, surface areas, and arc lengths
2	Mathematics fundamental necessary to formulate, solve and analyze engineering problems	Determine whether solutions of such an equation are linearly independent.
3	An understanding of Fourier Series and fourier Transform to solve real world problems	Use the methods of undetermined coefficients
4	Identify an partial differential equation and its order	How to transform a PDE of first order in canonical form.
5	Solve first order linear differential equations and seperable differential equation	How to solve PDE of first order using the method separation of variables
	To study the application of transform techniques to solve linear ordinary and partial differential equations and to solve boundary value problems by using Fourier series	Understand the basics of transformation techniques.
		Apply the transform techniques for solving ordinary differential equations and partial differential equations

COURSE OBJECTIVES AND COURSE OUTCOMES

08.302 PROBLEM SOLVING AND PROGRAMMING IN C

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Introduce Von-Neumann concept, types of programming languages, problem solving concepts, documentation and debugging of programs	Able to identify different components of computer hardware.
		Brief overview of different programming languages
		Able to analyse and design simple problem solutions
		Able to document and debug a program correctly
2	Understand important concepts of C programming, pre-processor directives, data types, operators, input and output, control statements, arrays, structure and union, storage classes, sorting and searching	Awareness about different types of pre-processor directives and storage classes.
		Able to develop simple C programs using arrays and structures
		Able to develop programs for sorting and searching simple things
3	Study the basic concepts of pointers, dynamic memory allocations, functions, files, command line programming	Develop C programs that help to store solutions permanently using files, pointers and functions.
		Awareness about the need and use of dynamic memory allocation in programs
		Basic idea about command line programming

COURSE OBJECTIVES AND COURSE OUTCOMES

08.303 DISCRETE STRUCTURES

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Use mathematically correct terminology and notation.	Be familiar with constructing proofs.
		Be familiar with elementary formal logic.
2	Construct correct direct and indirect proofs.	Be familiar with set algebra.
		Be familiar with combinatorial analysis.
3	Use division into cases in a proof	Be familiar with recurrence relations.
4	Use counterexamples.	Be familiar with graphs and trees, relations and functions, and finite automata.
5	Apply logical reasoning to solve a variety of problems	Be exposed to the strategies for compare relative efficiency of algorithms.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.304: ELECTRONIC CIRCUITS

Sl No.	Course Objectives	Course Outcomes
1	To explain the basic wave shaping circuits using R, L and C	Can evaluate R-L-C dc circuits and complete response of R-L and R-C transient circuits.
2	To understand real mathematical model of a diode and to solve diode circuits.	Design various diode circuits like clippers, clampers and rectifiers.
3	To introduce the voltage regulator circuits.	Design of transistor voltage regulators.
4	To explain the DC analysis of BJT circuits	To be able to analyze DC biasing circuits.
5	To develop the basic understanding of amplifier designing and its analysis using hybrid model	Explain classification of amplifiers and analyze the CE, CB, CC amplifiers using small signal hybrid model and derive the voltage gain, current gain, input impedance and output impedance.
6	To study and analyze the performance of FETs on the basis of their operation and working.	Design and analyze different types of the MOS amplifiers and their frequency response by using the small signal model.
7	To make students aware of amplifier operation at low and high frequency and its frequency responses.	Design and analyze single stage amplifiers and their frequency response, its gain band width product and effect of coupling and bypass capacitors in amplifiers.
8	To make students learn about different types of Power amplifiers.	Design and analyze different types of power amplifiers and compare them in terms of efficiency.
		Design and analyze basic circuits using diodes.
		Design and analyze different BJT and FET amplifier circuits.

COURSE OBJECTIVES AND OUTCOMES

08.305 DIGITAL SYSTEM DESIGN

Sl No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To analyze and design combinational and sequential logic circuits.	Create the appropriate truth table from a description of a combinational logic function.
2	Consolidation of the design methodologies for combinational and sequential digital systems	Create a gate-level implementation of a combinational logic function described by a truth table using and/or/inv gates, muxes or ROMs, and analyze its timing behavior
3	To understand the functionality of digital systems, design and implement hardware digital systems incorporating memory modules.	Create a state transition diagram from a description of a sequential logic function and then convert the diagram into an implementation of a finite-state machine with the appropriate combinational and sequential components
		Describe the operation and timing constraints for latches and registers
		Draw a circuit diagram for a sequential logic circuit and analyze its timing properties (input setup and hold times, minimum clock period, output propagation delays).

COURSE OBJECTIVES AND OUTCOMES

08.306 COMPUTER ORGANIZATION

Sl No	Course Objectives	Subject Learning Outcomes or Course Outcomes **On completion of course the students will be able to:**
1	Review development of computer systems.	assemble a simple computer with hardware design including data format, instruction format, instruction set, addressing modes, bus structure, input/output, memory, Arithmetic/Logic unit, control unit, and data, instruction and address flow
2	Examine the operation of the major building blocks of a computer system	use Boolean algebra as related to designing computer logic, through simple combinational and sequential logic circuits
3	studying and analyzing fundamental issues in architecture design and their impact on performance	

COURSE OBJECTIVES AND COURSE OUTCOMES

08.307 ELECTRONIC DEVICES LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce to the students the fundamental concepts of electronic devices and circuits for engineering applications	Explain, illustrate, and design the different electronic circuits using electronic components
2	To develop the skill of analysis and design of various analog circuits using electronic devices	Design circuits using operational amplifiers for various applications
3	To provide comprehensive idea about working principle, operation and applications of electronic circuits	
4	To equip the students with a sound understanding of fundamental concepts of operational amplifiers	
5	To expose to the diversity of operations that operational amplifiers can perform in a wide range of applications	
6	To expose to a variety of electronic circuits/systems using various analog ICs	

COURSE OBJECTIVES AND COURSE OUTCOMES

08.308 PROGRAMMING LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To impart the basic concepts C programming	Able to develop simple applications like calculator, interest calculations etc.
2	Understand the C programming using array, structure	Able to develop programs for alphabetical sorting of names, sorting of students details based on certain criteria
3	Practice usage of functions in programming	Familiarized with modularized programming
4	To provide the knowledge of pointers, programming using command line arguments, files	Able to store and retrieve data records permanently

S5 CSE (2011 Batch)

08.501	Engineering Mathematics IV	Sumi
08.502	Advanced Mathematics and Queuing Models	Liji
08.503	Data Base Design	Sukesh Babu V S
08.504	Systems Programming	Binu B
08.505	Microprocessors and Interfacing	Chitra G Sasi
08.506	Object Oriented Design and JAVA Programming	Indu R Netaji
08.507	Object Oriented Programming Lab	Indu R Netaji
08.308	Application Software Development Lab	Sukesh Babu V S

COURSE OBJECTIVES AND COURSE OUTCOMES

08.501 ENGINEERING MATHEMATICS IV

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes On completion of course the students will be able to:
1	Understand how complex numbers provide a satisfying extension of the real numbers;	Compute sums, products, quotients, conjugate, modulus, and argument of complex numbers. Write complex numbers in polar form. . Compute exponentials and integral powers
2	Perform algebra with complex numbers.Compute complex line integ	Explain the fundamental concepts of complex analysis and their role in modern mathematics and applied contexts
3	Model decision making problems using major modeling formalisms of artificial intelligence and operations research, including propositional logic, constraints, linear programs and Markov processes,	Formulate simple reasoning, learning and optimization problems, in terms of the representations and methods presented (homework, quiz)
4	To provide adequate knowledge about the water treatment processes and its design	Demonstrate ability to solve systems of linear equations.
5		Demonstrate ability to work within vector spaces and to distill vector space properties

COURSE OBJECTIVES AND COURSE OUTCOMES

08.502: ADVANCED MATHEMATICS AND QUEUING MODELS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To provide students with the ability to understand and conduct computer systems modelling and performance analysis.	To acquire skills in handling situations involving more than one random variable and functions of random variables.
2	To establish the necessary background, the course starts with an introduction to basic probability tools and concepts. It then builds up to more advance topics that are particularly useful in modeling, such as Markov models and queueing theory.	To apply basic probability techniques and models to analyze the performance of computer systems, and, in particular, of networks and queues.
3	To understand probabilistic models are employed in countless applications in all areas of science and engineering.	To have a well – founded knowledge of standard distributions which can describe real life phenomena.
4	To provide necessary mathematical support and confidence to tackle real life problems.	To understand and characterize phenomena which evolve with respect to time in a probabilistic manner.
5		To understand basic characteristic features of a queuing system and acquire skills in analyzing queuing models.
		To use discrete time Markov chains to model computer systems.

COURSE OBJECTIVES AND COURSE OUTCOMES FOR

08.503 DATABASE DESIGN

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce the concept of database and the real life applications. Introduced different models for designing databases. Also give an idea about different types of databases.	Ability to draw ER diagrams for databases. Able to search appropriate data from databases using various searching techniques. Able to classify the databases.
2	To introduce key concepts in the database design. To introduce how to create databases and how to retrieve databases. To give an idea about various normal forms.	Ability to create databases. Able to insert, delete values from databases. Students can able to do various operations on the databases. Ability to explain the concepts of dependency of databases.
3	To introduce the concepts of transactions in real life applications like banking applications. To introduce how to provide security to databases.	Ability to identify the properties of transactions and able to do transactions and can provide security to confidential databases.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.504 SYSTEM PROGRAMMING

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To impart the basic concepts of system software design.	Able to understand different system software architectures.
2	Different assembler design options and assembler implementations. Basic functions of loaders, linkers and macro processors.	Design and develop loader, linker and macro processor.
3	Basic functions macro processors. Overview of text editors and debuggers.	Design and develop macro processor. Able to understand the features of UNIX OS.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.505 MICROPROCESSOR AND INTERFACING

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Study on 8085 microprocessor, its memory and interfacing, analog to digital converters, read and write timing signals	To study instruction sets and know in detail about working of microprocessor, to help them in design of microprocessors.
2	Study on 8086 microprocessor, addressing modes, timing diagrams	To study about instructions, its execution, develop new real time applications using instruction sets, to get basic knowledge about the micro processor and to work on improvements in processing speeds.
3	Study on timers, counters, interfaces like keyboard	The program motivates students to develop strong skills in research, analysis and interpretation of complex information The program prepares students to successfully compete for employment in Electronics, Manufacturing and Teaching industry

COURSE OBJECTIVES AND COURSE OUTCOMES

08.506 Object Oriented Design and Programming

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To understand the basic concepts of Object Oriented Design Techniques.	Apply object oriented principles in software design process.
2	To give a thorough understanding of Java language. Handling Exceptions in Java.	Applying various object oriented features like inheritance, data abstraction, encapsulation and polymorphism to solve various computing problems using Java language.
3	Implementing threads in java. Applet programming. Introduction to GUI classes and event Handling mechanisms. To impart the techniques of creating GUI based applications.	Interpret Event handling techniques for interaction of the user with GUI. Analyze JDBC drivers to connect Java applications with relational databases.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.507 OBJECT ORIENTED PROGRAMMING LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	**1. To introduce basic concepts of object oriented design techniques.**	1.apply object oriented principles in software design process.
2	**2. To give a thorough understanding of Java language.**	2. develop programs for real applications using java constructs and libraries.
3	**3. To provide basic exposure to the basics of multithreading, database connectivity etc.**	3.understand and apply various object oriented features like inheritance, data abstraction, encapsulation and polymorphism to solve various computing problems using C++ language.
4	**4. To impart the techniques of creating GUI based applications.**	4. implement Exception Handling in C++.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.508 APPLICATION SOFTWARE DEVELOPMENT LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce basic commands and operations on database	Design and implement a database for a given problem using database design principles
2	To introduce stored programming concepts (PL-SQL)using Cursors and Trigger	Apply stored programming concepts (PL-SQL) using Cursors and Triggers.
3	To familiarize front end tools of database	Use graphical user interface, Event Handling and Database connectivity to develop and deploy applications and applets.
		Develop medium-sized project in a team.

08.701	Computer Graphics	Dhanunath R
08.702	Design and Analysis of Algorithms	Remya M R
08.703	Computer Networks	Roshini R
08.704.2	Multimedia Systems and Data Compression	Vivitha Vijay
08.705.2	Computer Hardware and Interfacing	Chitra G Sasi
08.706	Computer Hardware and Interfacing Lab	Chitra G Sasi
08.707	Operating Systems and Network Programming Lab	Dhanunath R
08.708	Project Design and Seminar	Roshini R

COURSE OBJECTIVES AND OUTCOMES

08.701 COMPUTER GRAPHICS

Sl No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Know and be able to describe the general software architecture of programs that use 3D computer graphics.	Understand the structure of modern computer graphics systems
2	Know and be able to discuss hardware system architecture for computer graphics.	Understand the basic principles of implementing computer graphics primitives
3	Know and be able to use the underlying algorithms, mathematical concepts, supporting computer graphics	Familiarity with key algorithms for modeling and rendering graphical data
		Develop design and problem solving skills with application to computer graphics

COURSE OBJECTIVES AND COURSE OUTCOMES

08.702 DESIGN AND ANALYSIS OF ALGORITHMS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce the important of algorithms and its running time in various applications. Also introduced how to find the time needed for executing an algorithm.	Ability to calculate the running time of algorithms using various methods. Able to a list using different sorting techniques.
2	To introduce tree graph and different operations can be applied to trees and graphs.	Ability to generate different types of trees and do various operations on them. Ability create trees from graphs.
3	To introduce different techniques for designing algorithms. To introduce different optimization techniques. To introduce the concept of NP-completeness.	Ability to design algorithms for given problems. Able to solve different optimization problems. Able to prove the given problem is under Np or not.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.703 COMPUTER NETWORKS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Build an understanding of the fundamental concepts of computer networking.	Describe the different aspects of networks, protocols and network design models. Explain the various Data Link layer design issues and Data Link protocols
2	Familiarize the student with the basic taxonomy and terminology of the computer networking area.	Analyze and compare different LAN protocols. Compare and select appropriate routing algorithms for a network. Able to understand congestion control algorithms.
3	To understand the functions of network layer, transport layer and application layer.	Able to understand IP addressing. Able to understand IP protocols. Able to understand the functions of network layer, transport layer and application layer in internetworking.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.704.2 MULTIMEDIA SYSTEMS AND DATA COMPRESSION

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce the concepts related to multimedia DBMS.	1. Identify different digital media, and explain the features and architecture of multimedia systems.
2	To create a basic knowledge in compression and decompression of different types of media.	2. Discuss the various applications of multimedia systems.
3	To develop an awareness regarding different types of multimedia systems.	3. Discuss the properties of multimedia DBMS and apply them in data modeling.
		4. Analyze compression techniques for different media like text, image, audio and video and use them in real world applications.
		5. Describe multimedia synchronization and its reference model.
		6. Clearly distinguish the types of multimedia systems.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.705.2 COMPUTER HARDWARE AND INTERFACING

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Components of a computer, Introduction to memory, memory arrangements, memory modules, mother board features	Be familiar with the components of a computer. Detailed knowledge on memory to select type of memory in your PC.. Identify the names, distinguishing features, and units for measuring different kinds of memory. Study on motherboard and its constituent components
2	Get familiarized with power supply components, mass storage medium and categories	Identify and rectify the hardware issues, do maintenance work. Select storage device of your requirement
3	Study on different i/o ports , types of keyboard, connectors, audio standards	To choose buses as per your requirement ,to select connectors .To trouble shoot keyboard and connectors

COURSE OBJECTIVES AND COURSE OUTCOME

08.706 COMPUTER HARDWARE AND INTERFACING LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Familiarization of pc components. Assembling PC	Be familiar with the components of a computer. Detailed knowledge on memory to select type of memory in your PC.. Identify the names, distinguishing features, and units for measuring different kinds of memory. Study on motherboard and its constituent components
2	Interfacing through parallel :Interfacing with pc, Controlling stepper motor through parallel port: base address of parallel port	To familiarize the parallel port, its registers, data transfer through parallel port
3	Interfacing through serial port: base address of serial port	To familiarize the serial port, its registers, data transfer through parallel port
4	8051 Micro controller experiments:- - Familiarization of 8051 trainer kit by executing simple Assembly Language programs such as Multi byte addition, searching, sorting, and code conversion	Generate user application to suit everyday needs. Generate square waveform, saw-tooth waveform and other mixed waveform using 8051

COURSE OBJECTIVES AND COURSE OUTCOMES

08.707 OPERATING SYSTEMS AND NETWORK PROGRAMMING LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce the concept of process, threads, inter process communication. Also introduced the concepts of various methods amiable for inter process communication.	Able to do process creation, do inter process communication by various methods. Also able to implement dining philosophers problem and bankers algorithm.
2	To introduce network concepts and communication between client and server.	Ability to do client server communication using different protocols.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.708 PROJECT DESIGN AND SEMINAR

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To improve the professional skill and competency of the students	Able to understand the primary things to start a project
2	To understand the hardware and software design of a good product	Able to analyse a problem and design a solution to the problem.
3	To study about a topic in trend, based on the literature survey in leading journals	Able to create a report on a new topic in trend based on the study and literature survey.

S4 CSE (2012 Batch)

08.401	Engineering Mathematics III	Sreelekha T R
08.402	Humanities	Prof. P J Rajan
08.403	Computer Hardware Design	Remya M R
08.404	Object Oriented Techniques	Amitha R
08.405	Data Structures and Algorithms	Vivitha Vijay
08.406	Operating Systems	Sukesh Babu V S
08.407	Data Structures Lab	Vivitha Vijay
08.408	Digital System Lab	Sukesh Babu V S

COURSE OBJECTIVES AND COURSE OUTCOMES FOR

08.401: ENGINEERING MATHEMATICS III

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	**To introduce the basic notion in complex analysis such as Analytic Functions, Harmonic functions and their applications in fluid mechanics and differentiations and integration of complex functions, transformations and their applications in engineering fields.**	**After successful completion of this course, the students will be able to use numerical methods to solve problems related to engineering fields.**
2	**Numerical techniques for solving differential equations are also introduced as a part of this course.**	**This course helps students to master the basic concepts of complex analysis which they can use later in their career.**

COURSE OBJECTIVES AND OUTCOMES

08.403 COMPUTER HARDWARE DESIGN

Sl No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To impart an understanding of the basic concepts of Boolean algebra and digital systems	Apply the basic concepts of Boolean algebra for the simplification and implementation of logic functions using suitable gates namely NAND, NOR etc.
2	To impart familiarity with the design and implementation of different types of practically used sequential circuits.	Design simple Combinational Circuits such as Adders, Subtractors, Code Convertors, Decoders, Multiplexers, Magnitude Comparators etc.
3	To introduce the concepts of processor logic design and control logic design.	Design ALU.
		Design processing unit using the concepts of ALU and control logic design
		Identify the pros and cons of different types of control logic design in processors.

COURSE OBJECTIVES AND COURSE OUTCOMES
08.404 OBJECT ORIENTED TECHIQUES

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	This course provides in-depth coverage of object-oriented programming principles and techniques using C++.	Perform object oriented programming to develop solutions to problems demonstrating usage of control structures, modularity, I/O. and other standard language constructs.
2	Topics include classes, overloading, data abstraction, information hiding, encapsulation,	Demonstrate adeptness of object oriented programming in developing solutions to problems demonstrating usage of data abstraction, encapsulation, and inheritance.
3	Topics include inheritance, polymorphism, templates and low-level language features	Demonstrate ability to implement one or more patterns involving realization of an abstract interface and utilization of polymorphism in the solution of problems which can take advantage of dynamic dispatching.
4	Topics file processing, exceptions, container classes, and low-level language features.	Learn syntax, features of, and how to utilize the Standard Template Library. Learn other features of the C++ language including templates, exceptions, forms of casting, conversions, covering all features of the language. Learn features of the language which can be problematic with execution time or space and some techniques to resolve them. Learn features of the language which are non-deterministic, should not be utilized in hard real-time systems, and techniques for replacing those features.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.405 DATA STRUCTURE AND ALGORITHMS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To learn basic concepts programming methodologies and analysis of algorithms.	After successful completion of this course, students will be able to Interpret and compute asymptotic notations of an algorithm to analyze the consumption of resources (time/space).
2	To learn concepts of various data structures such as stack, queue, priority queue, strings, trees and graphs.	Implement stack, queue, list and tree ADT to manage the memory using static and dynamic allocations.
3	To acquire knowledge on various sorting techniques.	Develop and compare the searching and sorting algorithms.
4	To develop the skill to choose the most appropriate data structures for solving a given problem.	Identify appropriate data structure and algorithm for a given problem and implement in any programming language.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.406 OPERATING SYSTEMS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To provide an understanding of concepts those underlie operating systems.	After successful completion of this course, the student will be able to understand how operating system works in the background
		Makes the user interact with the Machine.

COURSE OBJECTIVES AND COURSE OUTCOMES FOR

08.407 FOR DATA STRUCTURES LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To teach efficient storage mechanisms of data for an easy access.	To choose appropriate data structure as applied to specified problem definition.
2	To design and implementation of various basic and advanced data structures.	To handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.
3	To introduce various techniques for representation of the data in the real world.	To apply concepts learned in various domains like DBMS, compiler construction etc.
4	To develop application using data structures.	To use linear and non-linear data structures like stacks, queues , linked list etc.
5	To teach the concept of protection and management of data.	
6	To improve the logical ability.	

COURSE OBJECTIVES AND COURSE OUTCOMES

08. 408 DIGITAL SYSTEM LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To understand different positional number systems and conversions.	Compare various positional number systems and binary codes
2	To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression	Apply Boolean algebra in logic circuit design
3	To analysis and design various combinational circuits and sequential circuits	Design combinational and sequential circuits
4	To study the fundamentals of HDL	Design and implement digital systems using basic programmable blocks
5	To design and implement synchronous sequential circuits	

S6 CSE (2011 Batch)

08.601	Compiler Design	Dhanunath R
08.602	Principles of Programming Language	Binu B
08.603	Formal languages and Automata Theory	Roshini R
08.604	Digital Signal Processing	Sujith S Pillai
08.605	High Performance Microprocessors	Chitra G Sasi
08.606	Data Communication	Anjana Devi
08.607	Microprocessor Lab	Chitra G Sasi
08.608	System Software Lab	Binu B

COURSE OBJECTIVES AND OUTCOMES

08.601 COMPILER DESIGN

Sl No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce the major concept areas of language translation and compiler design.	To apply the knowledge of lex tool & yacc tool to devleop a scanner & parser.
2	To enrich the knowledge in various phases of compiler ant its use, code optimization techniques, machine code generation, and use of symbol table.	To design & conduct experiments for Intermediate Code Generation in compiler.
3	To extend the knowledge of parser by parsing LL parser and LR parser.	To design & implement a software system for backend of the compiler.
4	To provide practical programming skills necessary for constructing a compile	To learn & use the new tools and technologies used for designing a compiler
		To develop program to solve complex problems in compiler
		To learn the new code optimization techniques to improve the performance of a program in terms of speed & space.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.602 PRINCIPLES OF PROGRAMMING LANGUAGES

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	The course is built around an investigation of what programming languages are, and the notion of programs as artefacts. Two key aspects of the study of programming languages are their semantics, and their syntax.	Manipulate and generate lambda-terms, extending a system such as Church numerals; check and assign types to lambda terms.
2	We will survey some of the fundamental principles of the semantics and computational behaviour of programs, including the lambda calculus, types and fixed-points.	Solve simple recursive equations by determining the limit of the Kleene fixpoint construction.
3	Rigorous proofs of properties of programs, such as are needed for safety-critical software, or for program transformations such as are carried out by optimising compilers, require a formal description of the 'meaning' and behaviour of programs	design and extend operational and denotational definitions for basic programming language constructs. prove properties of programs by various formal means, including structural and fixpoint induction.
4	The syntax of programming	demonstrate correspondences between

	languages is routinely defined by well-understood means, in terms of formal grammars and their relation to certain classes of automata.	**grammars, languages and automata.** **use standard parser and lexer generator tools to construct and implement translations such as a very simple compiler.**

COURSE OBJECTIVES AND COURSE OUTCOMES FOR

08.603 FORMAL LANGUAGES AND AUTOMATA THEORY (FR)

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Through automata, computer scientists are able to understand how machines compute functions and solve problems and more importantly, what it means for a function to be defined as *computable* or for a question to be described as *decidable.*	**Major objective** of automata theory is to develop methods by which computer scientists can describe and analyze the dynamic behavior of discrete systems, in which signals are sampled periodically. The behavior of these discrete systems is determined by the way that the system is constructed from storage and combinational elements.
2	Context-free languages have many applications in programming languages; in particular, most arithmetic expressions are generated by context-free grammars.	An *objective* taxonomy of SSDLs would be based on the computation model, which ... *CFG*) while the representations oriented to architecture are based on FSMs.
3	How a *turing machine* can be implementeon *real* life operations for example how we can explain working of an ATM using *turing machine*	To design a computationa model.based on this we create an abstract machine.

COURSE OBJECTIVES AND OUTCOMES

08.604 DIGITAL SIGNAL PROCESSING

Sl No.	Course Objectives	Course Outcomes
1	Coverage of continuous and discrete-time signals and systems, their properties and representations and methods those are necessary for the analysis of continuous and discrete-time signals and systems.	Student understand continuous-time signals and discrete-time signals
		Student understand linear time-invariant systems theory and applications
		Student can perform mathematical and graphical convolution of signals and systems
2	Knowledge of time-domain representation and analysis concepts as they relate to difference equations, impulse response and convolution, etc.	Students can perform analysis to difference equations, impulse response etc
3	Knowledge of frequency-domain representation and analysis concepts using Fourier Analysis tools, Z-transform	Learn the basic elements of digital signal processing frequency domain sampling, properties of DFT, FFT.
		Analyze CT and DT systems using Laplace transforms and Z Transforms.
4	To study computationally efficient method of DFT-FFT.	To learn butterfly diagram, DIT FFT and DIF FFT.
5	To give an understanding of essential DSP structures and applications .	Learn the Direct Form, Cascade Form, parallel and Lattice Structure for FIR and IIR filters.

COURSE OBJECTIVES AND OUTCOMES FOR

08.605 HIGH PERFORMANCE MICROPROCESSORS

Sl.No	Course Objectives	Course Outcomes On the completion of the course the student will be able to:
1	To study the architectural features of 80x86 and Pentium processor family	Differentiate between the architectural features of 80x86 and Pentium processors
2	Understand the instructional and architectural features of RISC processors	Explain the concepts of Hyper threading and Branch prediction
3	To study the instructions set of ARM processors	Explain the implementation of compiler based register optimization, pipelining and the use of register file
4	To study the architecture of MIPS and SPARC processors	Explain the architecture of MIPS and SPARC processors and relate it to the RISC processor characteristics
5	To study the architecture, instruction set and interfacing of 8051 microcontroller	Relate the ARM processor instruction set to instructional characteristics of RISC processors
		Describe the architectural features of 8051 microcontroller
		Classify the instructions of 8051 microcontroller
		Interface 16x2 LCD, keyboard and temperature sensor with 8051 microcontroller

COURSE OBJECTIVES AND COURSE OUTCOMES

08.606 DATA COMMUNICATION

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Familiarize the student with the basic taxonomy and terminology of the computer networking area. Discuss the different transmission media for data communication.	Students will be able to explain Data Communications concepts and its components. Identify the different types of Transmission media and their functions within a network.
2	To introduce the concepts of different encoding and multiplexing.	Select and use appropriate signal encoding techniques for a given scenario.
3	To introduce different error detection and error correction techniques. Discuss the different Switching and Spread spectrum methods. Introduction to wireless communication.	Design suitable error detection and error correction algorithms to achieve error free data Communication. Select and use appropriate switching techniques for a given scenario.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.607 MICROPROCESSOR LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To get concept about 8085 Microprocessor and their instruction set	Develop and execute programs to perform data transfer, arithmetic& logical operations. and code conversions using 8085 microprocessors and basic arithmetic operations using 8086.
2	To explain and execute arithmetic and logical programs for microprocessor based applications in electrical and electronics engineering.	Generate square wave using 8085 microprocessor and to interface using PPI 8255
3	To know about the basic operating concepts of microprocessors	Make use of 8085 microprocessor for speed and position control of dc motor and stepper motor
4	To generate low level programming like generation of square wave, triangular wave etc	
5	To give awareness about the concept of 8086 Microprocessor	

6	To understand the basic operations that can be run on 8086 microprocessors	

COURSE OBJECTIVES AND COURSE OUTCOMES

08.608 SYSTEM SOFTWARE LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	• To design and implement assembler for a hypothetical machine. • To design Macro processor. • To get an exposure to design and implement various components of system software.	• Understand latest features of translators. • Apply the concept of finite automata to implement components of system software. • Design system software using latest tools.

S8 CSE (2010 Batch)

08.801	Software Engineering and Project Management	Divya V
08.802	Computer System Architecture	Chitra G Sasi
08.803	Cryptography and Networks Security	Anjana Devi
08.804	Distributed System	Indu R Netaji
08.805.3	Mobile and Wireless Networks	Shreyas L
08.806.4	Internet Technology	Vivitha Vijay
08.807	Algorithm Design Lab	Dhanunanth R
08.808	Project Work and Viva Voce	Divya V

COURSE OBJECTIVES AND COURSE OUTCOMES

08.801 SOFTWARE ENGINEERING AND PROJECT MANAGEMENT

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	• Apply software testing and quality assurance techniques at the module level, and understand these techniques at the system and organization level. Understand common lifecycle processes including waterfall (linear), incremental approaches (such as Unified process), and agile approaches.	• Design and implement both the server and client components of a client-server application, such as a web-based application. • Know commonly used architectural patterns, styles, and tactics. o Identify their impact upon various quality concerns such as scalability, performance, and reliability.
2	• Work collaboratively in a small team environment to develop a moderate-sized software system from conceptualization to completion, including requirements elicitation, system modelling, system design, implementation,	• Give examples of the primary project management activities associated with each major software engineering activity including requirements elicitation, analysis and specification; analysis and design; implementation;
3	• Work collaboratively in a small team environment to unit and system testing, integration, source code management configuration management, and release management.	• Apply the principles and techniques of software engineering in the architectural design, detail design, and implementation of computer games or other entertainment focused software applications.
4	• Prepare technical documentations and make presentations on various aspects of a software development project, including the technical	• Develop a business plan for a start-up software business to be presented to a venture capitalist.

	aspects as well as the managerial aspects .	

COURSE OBJECTIVES AND OUTCOMES

08.802 COMPUTER SYSTEM ARCHITECTURE

Sl No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To acquire a basic knowledge about computer system architecture, arithmetic, digital circuits and the low - level programming skills.	Describe the principles of computer design.
2	Ability to describe the operation of modern and high performance computers.	Classify instruction set architectures.
3	Ability to undertake performance comparisons of modern and high performance computers.	Describe the operation of performance enhancements such as pipelines, dynamic scheduling, branch prediction, caches, and vector processors
4	Development of software to solve computationally intensive problems.	Describe modern architectures such as RISC, Super Scalar, VLIW (very large instruction word), multi-core and multi-cpu systems.
		Develop applications for high performance computing systems.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.803 CRYPTOGRAPHY & NETWROK SECURITY

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Introduce cryptography, key terms, substitution techniques, transposition techniques, rotor machines, symmetric cipher models: DES, AES, IDEA	Able to understand cipher model, substitution and transposition techniques.
		Brief overview of symmetric models
		Understood round structure of DES, AES, IDEA
2	Provide an overview of Asymmetric encryption, RSA, Diffie Hellman key exchange, Elliptic curve cryptography, SHA, MD5, digital signatures	Able to differentiate symmetric and asymmetric encryption techniques.
		Able to encrypt simple messages using RSA, ECC
		Understood the concept of message authentication using SHA,MD5
		Obtained the basic concept and significance of digital signatures
3	Provide an overview of need and possibilities for Network security. Introduce email security protocols PGP, S/MIME, Give a brief idea about IPSec, firewalls	Awareness about the working of PGP and S/MIME protocols.
		Understood about different protocols that provide network security at IP layer.
		Obtained an idea about different firewalls.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.804 DISTRIBUTED SYSTEMS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	The course aims to provide an understanding of the principles on which the Internet and other distributed systems are based; their architecture, algorithms and how they meet the demands of contemporary distributed applications.	• Key concepts and well-known methods will be explained in lectures, classes or online, where syllabus material will be presented and the subject matter will be illustrated with demonstrations and examples;
2	The course covers the building blocks for a study of distributed systems, and addressing the characteristics and the challenges that must be addressed in their design: scalability, heterogeneity, security and failure handling being the most significant.	• Tutorials will focus on problem solving and they will provide practice in the application of theory and procedures, allow exploration of concepts with teaching staff and other students, and give feedback on your progress and understanding;
3	This course also covers issues and solutions related to the design and the implementation of distributed applications.	• Computer laboratory sessions provide practices in the application of developing basic distributed applications using RPC;

COURSE OBJECTIVES AND COURSE OUTCOMES

08.805.2 MOBILE AND WIRELESS NETWORK

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce the major concepts related to wireless communication.	After successful completion of this course, the students will be able to: Explain different transmission techniques and modulation schemes for wireless communication
2	To develop awareness regarding the medium access control protocols in designing wireless networks.	Use appropriate medium access control protocol in designing wireless networks
3	To provide an understanding regarding different generations of cellular wireless networks.	Summarize various technology trends for next generation cellular wireless networks.
4		Identify the components of GSM, GPRS and Bluetooth software model for mobile computing
5		Describe protocol architecture of WLAN technology, WAP and WML file systems.
6		Illustrate routing algorithms and different transmission control techniques in transport layer.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.806.2 INTERNET TECHNOLOGY

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To learn the basic web concepts and Internet protocols, To familiarize with Scripting Languages, To learn basic concepts of PHP programming	Able to do simple web page designs
		Brief awareness about java script
		Obtained basic knowledge about PHP programming
2	Provide a brief overview about web server hardware and software, working of e-commerce software, different online payment methods	Understood the working of an e-commerce software
		Awareness about different online transactions
		Understood the concept of web server and different web servers
3	To make them aware about some web application protocols	Awareness about internet domain names.
		Basic idea about email protocols
		Knowledge about different file transfer protocols

COURSE OBJECTIVES AND COURSE OUTCOMES

08.807 ALGORITHM DESIGN LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce different computer graphics techniques. Introduced various algorithms for drawing line, circle, etc. Introduced the concept of projections, transformations etc.	Ability to draw lines, circles by using different algorithms. Able to do transformations, projections etc.
2	To introduce the concept of animations.	Students can do animations for various applications with the help of computer graphics techniques.
3	To introduce the concepts of trees, graphs, different searching methods, optimization problems etc.	Ability to do graph traversal, tree creation, find shortest path, solves different optimization problems.

COURSE OBJECTIVES AND COURSE OUTCOMES

08.808 PROJECT WORK AND VIVA VOCE

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To improve the professional skill and competency of the students	Able to develop a product and present it effectively.
2	To encourage the students to develop an application by themselves	Acquired enough confidence to enter into an industry

3	To make them industry ready people by enhancing their technical and softskills.	Improves interpersonal communication skills
2	To assess their overall knowledge about the subjects studied in their carriculam	Able to identify their weaker areas and helps to improve.