2015-2016

COMPUTER SCIENCE ENGINEERING

ACADEMIC YEAR 2015-2016

S1 CSE (2015 Batch) KTU

MA 101	Calculus	Ambili Mol
PH 100	Engineering physics	Sreeti Gangadharan
BE 100	Engineering Mechanics	Sankar Ram
BE 101-05	Introduction to computing and problem solving	Syamala S
BE 103	Introduction to Sustainable Engineering	Subi
ME 100	Basics of Mechanical Engineering	John P George
PH 110	Engineering Physics Lab	Sreeti Gangadharan
CS 110	Computer Science Workshop	Syamala S
ME 110	Mechanical Engineering Workshop	V K Soman

COURSE OBJECTIVES AND COURSE OUTCOMES

MA 101 CALCULUS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To give the definition of an infinite series and explain what is meant by the sequence of partial sums. Relate the convergence or divergence of the series to the sequence of partial sums.	Evaluate the limit of a sequence of numbers (infinite series) and determine whether the series converges.
2	Compute partial derivatives of functions of several variables. Apply the theorem on mixed partial derivatives.	Understand the meaning of partial derivatives and calculate partial derivatives.
3	Use concepts of calculus to the model real-world problems	Compute dot product, cross product, length of vectors. Compute partial derivatives, derivatives of vector-valued functions, gradient functions.
4	Evaluate volumes of bounded solids and areas of bounded regions by using the ideas of double and triple integrals.	To change a double integral to polar co ordinate. Compute (relatively simple) triple integrals
5	Apply the concept of line integral to work and circulation. Know the definition and properties of conservative vector fields and their relationship to gradient fields.	Determine if a vector field is conservative and find a potential function if conservative. Evaluate line integrals in the plane and in space, including line integrals of vector fields.

COURSE OBJECTIVES AND COURSE OUTCOMES

PH 100 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.
3	Introduce basic concepts and principles of acoustics.	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

BE-100 ENGINEERING MECHANICS COURSE

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

BE 101-05 INTRODUCTION TO COMPUTING AND PROBLEM SOLVING

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, Understand different types of programming languages, concept of operating systems, compiler, assembler & interpreter,	Able to identify different components of computer hardware.
		Brief overview of different programming languages.
		Aware of basic concepts of OS, compiler, interpreter and assembler
2	Provide an overview of problem solving concepts, study algorithm and flowcharts, documentation, debugging, testing & verification of programs.	Able to analyse and design simple problem solutions.
		Able to document, debug, test and verify a program correctly.
		Able to write algorithm and draw flowcharts of problems
3	Understand important concepts of Python, variables, expressions, logical operators, arithmetic operators, relational operators, control statements	Awareness of python basic data types, expression evaluation
		Able to develop simple Python programs including loops.

		Able to develop programs for multiplication and addition tables, simple menu driven applications
4	Study the basic concepts of functions	Understood the basic concept of modularized programming and benefits.
5	Study the basic concepts of string traversals, comparisons, lists, tuples, dictionaries	Able to develop simple matrix applications, alphabetical sorting of names, sort records
6	Introduce files and exceptions, classes and objects	Awareness about permanent storage and retrieval of data, encapsulation of data, abstraction of data, basic concepts of object oriented programming

COURSE OBJECTIVES AND COURSE OUTCOMES

BE103 INTRODUCTION TO SUSTAINABLE ENGINEERING

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To have an increased awareness among students on issues in areas of sustainability.	Able to appreciate and explain the different types of environmental pollution problems and their sustainable solutions
2	To have an insight into global environmental issues.	To be aware of problem related to global environmental issues
3	To establish a clear understanding of the role and impact of various aspects of engineering and engineering decisions on environmental, societal, and economic problems.	Able to apply the concepts of sustainability in their respective area of specialization
4	To understand the role of engineering in achieving sustainable world	To understand the need of waste disposal and management

COURSE OBJECTIVES AND COURSE OUTCOMES

ME 100: BASICS OF MECHANICAL ENGINEERING

Sl. No.	Course Objectives	Subject Learning Outcomes or 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

PH 110 ENGINEERING PHYSICS LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes **On completion of course the students will be able to:**
1	Competency in an engineering or science profession via promotion to positions of increasing responsibility, publications, and/or conference presentations.	An ability to apply knowledge of mathematics, science, and engineering.
2	Adaptability to new developments in science and technology by successfully completing or pursuing graduate education in engineering or related fields, or participating in professional development and/or industrial training courses.	An ability to design and conduct experiments, as well as to analyze and interpret data.
3		An ability to identify, formulate, and solve engineering problems
4		Understanding of professional and ethical responsibility
5		The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
6		A recognition of the need for, and an ability to

		engage in life-long learning

COURSE OBJECTIVES AND COURSE OUTCOMES

CS110 COMPUTER SCIENCE WORKSHOP

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 Python programming	Able to develop simple applications like calculator, interest calculations etc.
2	Understand the Python control statements and do programming	Able to develop programs for prime check, palindrome check, Armstrong check
3	Practise usage of functions in programming	Familiarized with modularised programming
4	To make them confident to develop a simple application using files	Able to store and retrieve data records permanently

COURSE OBJECTIVES AND COURSE OUTCOMES FOR

ME 110 MECHANICAL ENGINEERING WORKSHOP

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Introduction to basic manufacturing process like welding, moulding, fitting, assembling, smithy, carpentry works etc.	Knowledge achieved to explain the various manufacturing process in the basic mechanical engineering workshop sections-smithy, carpentry, assembling, welding etc.
2	Familiarization of basic manufacturing hand tools and equipment like files, hacksaw, spanner chisel hammers, etc.	Identify the various hand tools used in the basic mechanical engineering workshop sections-smithy, carpentry, assembling, welding etc.
3	Familiarization of various measuring devises like vernier height gauge, vernier caliper, micrometer, steel rule etc.	Able to choose different measuring devises according to the work.
4	Demonstration and study of various machine tools like lathe, drilling machine, milling machine etc.	Ability to name and summarise the operations of various machine tools like lathe, milling, drilling and shaping machines.
5	Familiarizing the disassembling and assembling of machine parts.	Knowledge achieved to disassemble and assemble the machine like IC engines.
6		Skill achieved to construct models by using basic mechanical workshop sections like welding, moulding, smithy, carpentry etc.

S3 CSE (2014 Batch)

13.301	Engineering Mathematics II	Sincy S
13.302	Humanities	Prof. P J Rajan
13.303	Discrete Structures	Ambady
13.304	Electronic Devices & Circuits	Anup Vasavan
13.305	Digital System Design	Sukesh Babu V S
13.306	Data Structures and Algorithms	Freeshma Karunan
13.307	Electronic Circuits Lab	Preetha R
13.308	Programming Lab	Amitha R

COURSE OBJECTIVES AND COURSE OUTCOMES

13.301 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

13.303 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

13.304 ELECTRONIC DEVICES AND CIRCUITS

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 OUTCOMES

13.305: 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 impart an understanding of the basic concepts of Boolean algebra and digital systems. .	Study courses in higher semesters which includes organization of digital systems and hardware design.
2	Getting familiar with the design and implementation of different types of practically used sequential circuits	Design and implement different types of practically used combinational and sequential circuits
3	To provide an introduction to use Hardware Description Language.	Use Hardware Description language for defining simple logic circuits.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.306 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
13.307 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
13.308 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	Able to develop programs for alphabetical

	array, structure	sorting of names, sorting of students details based on certain criteria
3	Practise 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 (2013 Batch)

13.501	Abstract Algebra, Number Theory and Optimization	Aneesh
13.502	Linear Algebra and Queuing Theory	Liji
13.503	Operating systems	Dhanunath R
13.504	Systems Programming	Vivitha Vijay
13.505	Microprocessors and Interfacing	Girija D Devi
13.506	Object Oriented Design and JAVA Programming	Suma S G
13.507	Object Oriented Programming Lab	Vivitha Vijay
13.308	Application Software Development Lab	Sibi S

COURSE OBJECTIVES AND COURSE OUTCOMES

13.501 ABSTRACT ALGEBRA, NUMBER THEORY AND OPTIMIZATION

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.	Compute the distance between points, the distance from a point to a line, and the distance from a point to a plane in the three-dimensional coordinate system. Perform algebraic operations with vectors in two and three dimensions, Find the length of a vector, Compute dot and cross product of vectors.
2	An understanding of Fourier Series and Laplace Transform to solve real world problems	Solve first-order linear or separable equations, finding both the general solution and the solution satisfying a specified initial condition.
3	Identify an ordinary differential equation and its order	Sketch and describe regions in space.
4	Verify whether a given function is a solution of a given ordinary differential equation (as well as verifying initial conditions when applicable	Solve constant-coefficient, linear, homogeneous equations of higher order (especially second order) and find the solution satisfying specified initial conditions

Sl. No.		
5	Solve first order linear differential equations Find solutions of separable differential equations, Model radioactive decay, compound interest, and mixing problems using first order equations, Model population dynamics	Determine whether solutions of such an equation are linearly independent. Use the methods of undetermined coefficients and variation of parameters to solve non homogeneous equations equation

COURSE OBJECTIVES AND COURSE OUTCOMES

13.502: LINEAR ALGEBRA AND QUEUING THEORY

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.

Sl. No.		
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

13.503 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

13.504 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.	Design and develop assembler.

3	Basic functions of loaders, linkers and macro processors.	Design and develop loader, linker and macro processor.
4	Overview of text editors and debuggers. General overview of the UNIX operating system	Able to understand the features of UNIX OS.

COURSE OBJECTIVES AND COURSE OUTCOMES FOR

13.505 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, interrupt controller, dma controller	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

13.506 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 impart 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.	Implement object oriented principles for reusability.
3	Handling Exceptions in Java. Implementing threads in java. Applet programming.	Assign priorities and resolve run-time errors with Multithreading and Exception Handling techniques.
4	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. Develop client/server applications using socket programming. Analyze JDBC drivers to connect Java applications with relational databases.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.507 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

13.508 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	Apply stored programming concepts (PL-

	concepts (PL-SQL)using Cursors and Trigger	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.

S7 CSE (2012 Batch)

08.701	Computer Graphics	Sukesh Babu V S
08.702	Design and Analysis of Algorithms	Sreeji C
08.703	Computer Networks	Sibi S
08.704.2	Multimedia Systems and Data Compression	Amitha R
08.705.2	Computer Hardware and Interfacing	Shreyas L
08.706	Computer Hardware and Interfacing Lab	Shreyas L
08.707	Operating Systems and Network Programming Lab	Dhanunath R
08.708	Project Design and Seminar	Sreeji C

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.

S2 CSE (2015 Batch) KTU

MA 102	Differential Equations	Manju
BE 102	Design & Engineering	Syamala S
CE 100	Basics of Civil Engineering	Greeshma
EC 100	Basics of Electronics Engineering	Linta
CY 100	Engineering Chemistry	Renju R
BE 110	Engineering graphics	K S Sasi
CY 110	Engineering chemistry Lab	Renju R
CE 110	Civil Engineering workshop	Greeshma
EC 110	Electronics Engineering workshop	Linta

COURSE OBJECTIVES AND COURSE OUTCOMES

MA 102 - DIFFERENTIAL EQUATIONS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To put it briefly, the point of this class is to take your existing knowledge of calculus and apply it towards the construction and solution of mathematical models in the form of differential equations.	Distinguish between linear, partial and ordinary differential equations. State the basic existence theorem for 1st order ODE's and use the theorem to determine a solution interval
2	Solve non-homogeneous linear equations with constant coefficients using the methods of undetermined coefficients and variation of parameters.	Recognize and solve a non homogeneous differential equation. Find particular solutions to initial value problems.
3	Introduce the Fourier series and its application to the solution of partial differential equation.	Find the Fourier series representation of a function of one variable.
4	To provide the student with the concept and the understanding of basics in Partial Differential Equations.	Knowledge in the Technic, methodology of solving Partial Differential Equations. A basic understanding in the Transforms which are useful in solving engineering problems.

5	This course introduces ideas of wave equation and heat equation which are widely used in the 36 modeling and analysis of a wide range of physical phenomena and has got applications across all branches of engineering.	At the end of the course students will have acquired basic knowledge of differential equations and methods of solving them and their use in analyzing typical mechanical or electrical systems.

COURSE OBJECTIVES AND COURSE OUTCOMES

BE 102 DESIGN AND ENGINEERING COURSE

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To excite the student on creative design and its significance	To appreciate different elements involved in design and to apply them when they called for.
2	To make the student aware of the processes involved in design	Aware of product centred and user centred aspects that makes in the design process.
3	To make the student understand the interesting interaction of various segments of humanities, sciences and engineering in the evolution of a design	To be aware of different stages in design process and results of incorporating other fields with engineering stream
4	To get an exposure as to how to engineer a design.	Understand different stages in manufacturing of a designed product

COURSE OBJECTIVES AND COURSE OUTCOMES

CE 100: BASICS OF 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

EC 100 BASICS OF ELECTRONICS ENGINEERING

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To get basic idea about types, specification and common values of passive components.	Student can identify the active and passive electronic components.
2	To familiarise the working and characteristics of diodes transistors, MOSFET and some measuring instruments.	Student can setup simple circuits using diodes, transistors and other electronic components.
3	To understand working of diodes in circuits and in rectifiers.	Student will get fundamental idea about basic communication and entertainment electronics.
4	To understand the concept of mobile networks.	Student will get fundamental idea about mobile operation.
5		Student will get fundamental idea about different electronic circuits.

COURSE OBJECTIVES AND COURSE OUTCOMES

CY100 ENGINEERING CHEMISTRY

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To acquire knowledge about desalination of brackish water and treatment of municipal water.	Develop innovative methods to produce soft water for industrial use and potable water at cheaper cost.
2	To gain the knowledge of conducting polymers, bio-degradable polymers and fibre reinforced plastics.	Substitute metals with conducting polymers and also produce cheaper biodegradable polymers to reduce environmental pollution. Design economically and new methods of synthesis nano materials.
3	To learn significance of green chemistry and green synthesis.	Have the knowledge of converting solar energy into most needy electrical.
4	To understand mechanism of corrosion and preventive methods.	Apply their knowledge for protection of different metals from corrosion.To prevents the monuments from getting corroded.
5.	To have an idea and knowledge about the Chemistry of Fuels.	Recent trends in electrochemical energy storage devices.

6.	To study different types of spectroscopy.	Learn how to use different spectroscopy techniques for analysis purpose of simple molecules.

COURSE OBJECTIVES AND COURSE OUTCOMES

BE 110: ENGINEERING GRAPHICS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Increase ability to communicate with people.	To hand letter will improve.
2	Learn to sketch and take field dimensions.	To perform basic sketching techniques will improve.
3	Learn to take data and transform it into graphic drawings.	To draw orthographic projections and sections.
4	Learn basic Auto Cad skills.	To use architectural and engineering scales will increase.
5	Learn basic engineering drawing formats	To produce engineered drawings will improve
6	Prepare the student for future Engineering positions	To convert sketches to engineered drawings will increase.
		7. Students will become familiar with office practice and standards.

		8. Students will become familiar with Auto Cad two dimensional drawings.
		9. Students will develop good communication skills and team work.

COURSE OBJECTIVES AND COURSE OUTCOMES

CY110 ENGINEERING CHEMISTRY LAB

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To make students familiarize with the practical aspects of volumetric analysis of water samples ad determine the parameters like alkalinity, chlorides and hardness.	To equip the students to apply the knowledge of Chemistry and take up Chemistry related topics as parts of their project works during higher semester of the course.
2	To improve the knowledge of different types of titrations used in volumetric analysis	To impart sound knowledge in the different fields of theoretical chemistry so as to apply it to the problems in engineering field. (b) 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
3	To make students develop in terms of practical skills required for analytical	To develop abilities and skills that are relevant to the study and practice of

	projects.	Chemistry.
4	To study flash and fire point	To familiarize the students with different application oriented topics like new generation engineering material different instrumental methods etc.
		To enable the students to aquire the knowledge in the concepts of chemistry for engineering applications.

COURSE OBJECTIVES AND COURSE OUTCOMES

CE110 CIVIL ENGINEERING WORKSHOP

Sl No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To inculcate the essentials of civil engineering field to the students of all branches.	The ability to practice civil engineering using up-to-date techniques, skills, and tools as a result of life-long learning ability to design and conduct experiments
2	To provide the students an illustration of the significance of the civil engineering profession satisfying societal needs.	An ability to design a system or component to satisfy stated or code requirements of Civil Engineering.
3	To develop awareness about the instruments used in civil engineering field work.	The students will be able to illustrate the fundamental aspects of civil engineering
4	.	The students should able to plan a building

COURSE OBJECTIVES AND COURSE OUTCOME

EC 110 ELECTRONICS ENGINEERING WORKSHOP

Sl. No.	Course Objectives	Course Outcomes
		On completion of course the students will be able to:
1	To gives the basic introduction of electronic hardware systems.	Students can identify the active and passive electronic components.
2	To provide hands on training with familiarization, testing, assembling.	Students get hands on assembling, dismantling and repairing systems.
3	To develop knowledge of electrical wiring and electronic circuits.	Drawing of electronic circuit diagrams using BIS/ IEEE symbols.
4	To use the various tools and instruments available in the Electronic Workshop.	Testing of electronic components (Resistor, Capacitor, Diode)

5		Assembling of electronic circuit / system on general purpose PCB.

S4 CSE (2014 Batch)

13.401	Engineering Mathematics III	Liji Mol
13.402	Computer Organization & Design	Dhanunath R
13.403	Object Oriented Techniques	Neethu Krishna
13.404	Data communication	Suma S G
13.405	Database Design	Sukesh babu V S
13.406	Formal languages and Automata Theory	Sibi S
13.407	Data Structures Lab	Dhanunath R
13.408	Digital System Lab	Preetha R

COURSE OBJECTIVES AND COURSE OUTCOMES FOR

13.401: 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.

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COURSE OBJECTIVES AND OUTCOMES

13.402 COMPUTER ORGANIZATION AND DESIGN

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Sl No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Introduce students to the fundamental concepts underlying modern computer organization and architecture.	understand the basics of computer hardware and how software interacts with computer hardware
2	To familiarize students about hardware design including logic design, basic structure and behavior of the various functional modules of the computer and how they interact to provide the processing needs of the user	analyze and evaluate computer performance
		understand how computers represent and manipulate data
		understand computer arithmetic and convert between different number systems
		understand basics of Instruction Set Architecture (ISA) – MIPS.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.403 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

13.404 DATA COMMUNICATION

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 data transmission. Familiarize the student with the basic taxonomy and terminology of the computer networking area.	After the successful completion of the course 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 methods.	Select and use appropriate signal encoding techniques for a given scenario.
3	To discuss the multiplexing techniques. To introduce different error detection and error correction techniques to achieve error free data communication	Independently understand basic computer network technology. Design suitable error detection and error correction algorithms to achieve error free data Communication.
4	To discuss the different Spread Spectrum and Switching Techniques. Preparing the student for understanding advanced courses in computer networking	Select and use appropriate multiplexing and switching techniques for a given scenario.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.405 DATABASE DESIGN

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 understanding of the theory and applications of database management systems. To introduce the concept of ER model.	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 the concepts of database	Ability to create databases. Able to insert,

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		delete values from databases. Students can able to do various operations on the databases.
3	To introduce the concepts of normalization and how to normalize the database.	Ability to normalize database to avoid redundancy of database.
4	To introduce the organization of data in a database. 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.

The first row continues from "languages. To introduce how to create database and how to retrieve data from database using SQL."

COURSE OBJECTIVES AND COURSE OUTCOMES

13.406 FORMAL LANGUAGES AND AUTOMATA THEORY

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	*Languages that can be generated from one-element languages by applying certain standard operations a finite number of times*. They are the languages that can be recognized by finite automata.	Describe the formal relationships among machines, languages and grammars.
3	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.
4	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 COURSE OUTCOMES

13.407 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 implement basic linear and non-linear data structures and their major operations.	Appreciate the importance of structure and abstract data type, and their basic usability in different applications.
2	To implement applications using these data structures.	Analyze and differentiate different algorithms based on their time complexity.

3	To implement algorithms for various sorting techniques.	Implement linear and non-linear data structures using linked lists.
4	Strengthen the ability to the students to identify and apply the suitable data structure for the given real world problem.	Understand and apply various data structure such as stacks, queues, trees, graphs, etc. to solve various computing problems
5	Enables them to gain knowledge in practical applications of data structures.	Implement various kinds of searching and sorting techniques, and decide when to choose which technique.
6	Be capable to identity the appropriate data structure for given problem.	Identify and use a suitable data structure and algorithm to solve a real world problem.

COURSE OBJECTIVES AND COURSE OUTCOMES

13. 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	Apply Boolean algebra in logic circuit design

	Boolean algebra and show the correlation between Boolean expression	
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 (2013 Batch)

13.601	Compiler Design	Dhanunath R
13.602	Principles of Programming Language	Neethu Krishna
13.603	Design and Analysis of Algorithms	Sreeji C
13.604	Computer Networks	Vivitha Vijay
13.605	PC Hardware & Interfacing	Shreyas L
13.606	Signals & systems	Abhijith

13.607	Microprocessor Lab	Kavya
13.608	System Software Lab	Vivitha Vijay

COURSE OBJECTIVES AND OUTCOMES

13.601 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	Identify different language translators and explain the concepts and different phases of compilation with compile time

		error handling. . ..
2	To develop an awareness of the function and complexity of modern compilers	Represent language tokens using regular expressions, context free grammar and finite automata and design lexical analyzer for a language
3	To provide practical, hands on experience in compiler design.	Compare top down with bottom up parsers, and develop appropriate parser to produce parse tree representation of the input
		Explain syntax directed translation schemes for a given context free grammar and generate intermediate code
		Apply optimization techniques to intermediate code and generate machine code for high level language program

COURSE OBJECTIVES AND COURSE OUTCOMES FOR

13.602 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	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 languages is routinely defined by well-understood means, in terms of formal grammars and their relation to certain classes of automata.	demonstrate correspondences between 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

13.603 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	Ability to calculate the running time of

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
	algorithms and its running time in various applications. Also introduced how to find the time needed for executing an algorithm.	algorithms using various methods. Able to a list using different sorting techniques.
2	To introduce different types of height balanced trees.	Able to create height balanced trees and can perform various types of operations on such types of trees.
3	To introduce graph different operations can be applied to graphs.	Ability create trees from graphs. Able to do various operations on graphs.
4	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

13.604 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.
3	Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking	Able to understand IP addressing. Able to understand congestion control algorithms. Able to understand IP protocols.
4	Allow the student to gain expertise in some specific areas of networking such as the design and maintenance of individual networks.	Able to understand the functions of network layer, transport layer and application layer in internetworking.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.605 PC HARDWARE 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 architecture of 80286,386,486,Pentium	• Developing of assembly level programs and providing the basics of the processors. The course objective is to introduce the basic concepts of microprocessor and to develop in students the assembly language programming skills and real time applications of Microprocessor • Analyze abstract problems and apply a combination of hardware and software to address the problem;
2	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
3	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
4	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 OUTCOMES

13.606: SIGNALS AND SYSTEMS

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
2		Student understand linear time-invariant systems theory and applications
3		Student can perform mathematical and graphical convolution of signals and systems
4	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
5	Knowledge of frequency-domain representation and analysis concepts using Fourier Analysis tools, Z-transform	Analyze CT and DT systems using Laplace transforms and Z Transforms.
6		Student understand continuous-time and discrete-time Fourier series/transforms
7		Student can sketch the magnitude and phase of signals in transform domains
8		Analyze system properties based on impulse response and Fourier analysis.
	Introduction to the principle, algorithms and applications of modern digital signal processing.	Learn the basic elements of digital signal processing frequency domain sampling, properties of DFT, FFT.
	To study the design of FIR and IIR filters.	Discuss various methods to design IIR and FIR filters like window method, frequency sampling method , impulse invariance, bilinear transformation.

COURSE OBJECTIVES AND COURSE OUTCOMES

13.607 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 FOR SYSTEM SOFTWARE LAB 13.608

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 (2012 Batch)

08.801	Software Engineering and Project Management	Sibi S
08.802	Computer System Architecture	Sukesh Babu V S

08.803	Cryptography and Networks Security	Divya V
08.804	Distributed System	Amitha R
08.805.1	Fuzzy Set Theory and Applications	Sreeji C
08.806.4	Internet Technology	Vivitha Vijay
08.807	Algorithm Design Lab	Amitha R
08.808	Project Work and Viva Voce	Shreyas L

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 aspects as well as the managerial aspects .	• Develop a business plan for a start-up software business to be presented to a venture capitalist.

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

Sl.	Course Objectives	Subject Learning Outcomes or 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.	Course Objectives	Subject Learning Outcomes or

No.		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.