



SARANATHAN COLLEGE OF ENGINEERING
 (Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

INDEX

Criterion 2.6.1

Programme: CIVIL			
COURSE NAME	COURSE CODE	NBA CODE	COURSE OUTCOMES (CO) Students will be able to
COMPUTER AIDED BUILDING DRAWING	CE8211	C116	Familiarize with principles of planning, orientation and complete joinery details for paneled and glazed doors and windows.
			Develop plan, elevation and section of buildings with load bearing walls.
			Create various types of plans for buildings with sloped roof and draw their corresponding elevation and section.
			Draw the plan, elevation and sectional view of R.C.C. framed structures with flat roof.
			Propose the drawing of R.C.C. framed structure with sloped roof.
			Draft the various views of Industrial Buildings - North light Roof Truss.
STRENGTH OF MATERIALS	CE8301	C201	Familiarize the concepts of stresses and strains.
			Analyze the principal stresses and principal planes.
			Determine shear force and bending moment in beams and understand concept of theory of simple bending.
			Calculate the deflection of beams by different methods and selection of method for determining slope or deflection.
			Design of circular shafts and helical springs by applying basic equation of torsion.
			Analyze the pin jointed plane and space trusses.
CONSTRUCTION MATERIALS LABORATORY	CE8311	C207	Acquire knowledge in testing of fine aggregates.
			Obtain knowledge in testing of coarse aggregate.
			Attain knowledge in testing of concrete.
			Gain knowledge in testing of bricks.
			Acquire knowledge in testing of blocks.
			Attain knowledge in the area of testing of construction materials and components of construction elements experimentally.
STRUCTURAL ANALYSIS I	CE6501	C301	Distinguish between static indeterminacy and kinematic indeterminacy.
			Solve and analyze the indeterminate pin jointed frames and indeterminate rigid jointed frames.

			Draw the shear force diagram and bending moment diagram for three hinged and two hinged arches.
			Calculate the support moments and reactions of a continuous beam by slope deflection method.
			Explain the NEylor's Simplification method.
			Describe Begg's deforemeter.
RAILWAYS AIRPORTS AND HARBOUR ENGINEERING	CE6604	C313	Describe about various activities regarding railway planning.
			Explain about the construction and maintenance of railways.
			Describe about the various activities regarding airport planning.
			Explain about the various design aspects of airports.
			Describe about various activities regarding harbour planning.
			Design various civil engineering aspects of harbour.
HOUSING PLANNING AND MANAGEMENT	CE6007	C405	Make use of basic terms of housing, housing laws and control regulations
			Identify public, private and non-government organizations
			Identify different types of sites
			Design and evaluate projects
			Choose effective materials for construction
			Make use of finance assistance given by government
Programme: CSE			
COURSE NAME	COURSE CODE	NBA CODE	COURSE OUTCOMES (CO) Students will be able to
PROBLEM SOLVING AND PYTHON PROGRAMMING	GE8151	C105	Develop Algorithmic solutions to simple Computational Problems
			Read, write, execute by hand simple python programs
			Structure Simple python programs for solving problems
			Decompose a python programs into functions
			Represent Compound data using Python lists, tuples and Dictionaries
			Read & Write Data from /to Files in python programs
DATABASE MANAGEMENT SYSTEMS	CS6302	C203	Design database application using fundamentals of Database Management Systems.
			Use the relational model and ER diagrams
			Apply concurrency control and recovery mechanisms for practical problems
			Design the Query Processor and Transaction Processor
			Apply security concepts to databases.
			Analyze concept of retrieval from web
COMPUTER GRAPHICS	CS6504	C305	Identify Software and Hardware Components of Graphics System and Display Techniques.
			Draw Two Dimensional Graphics. Apply Two Dimensional Geometric Transformations and Clipping Techniques.

			Draw Three Dimensional Graphics. Apply Three Dimensional Geometric Transformations.
			Apply Three Dimensional Viewing and Clipping Techniques.
			Apply Illumination and Color Models.
			Design Animation Sequence.
MOBILE COMPUTING	IT6601	C310	Explain the basics of mobile Computing
			Describe the functionality of Mobile IP and Transport Layer
			Classify different types of mobile telecommunication systems
			Illustrate the Adhoc networks concepts and its routing protocols
			Describe wireless and mobile communications systems able to choose an appropriate mobile system .
			Make use of Mobile Operating systems in developing mobile applications
ARTIFICIAL INTELLIGENCE	CS6659	C313	Learn problem formulation and algorithms like BFS,DFS, Hill Climbing and Heuristic functions and solve Constraint Satisfaction Problems
			Explain MinMax and Alpha Beta Pruning, Knowledge representation and Resolution using Predicate Logic
			Describe Inference, Forward and Backward chaining
			Explain Fuzzy reasoning, Bayesian theory and Dempster Shafer theory
			Explain Planning and Machine Learning using Strips and K Strips
			Describe the expert system architecture with any of the examples like MYCIN, DART,XCON
GRID AND CLOUD COMPUTING	CS6703	C403	Outline the concept of Grid and Cloud Architectures.
			Illustrate the data intensive grid service models and grid computing techniques.
			Demonstrate the concept of virtualization in cloud.
			Experiment with the programming model for globus toolkit.
			Interpret the hadoop framework in the grid and cloud environment.
			Illustrate the security models & IAM Practices in the cloud computing.
Programme: ECE			
COURSE NAME	COURSE CODE	NBA CODE	COURSE OUTCOMES (CO) Students will be able to
COMMUNICATIVE ENGLISH	HS8151	C101	Enable the learners to develop their basic communication skills in English based on LSRW skills.
			Inculcate the habit of reading and writing leading to effective and efficient communication.
			Read articles of general kind in magazines and news papers.
			Participate effectively in informal conversations; introduce themselves and their friends and express

			opinion in English.
			Comprehend conversations and short talks delivered in English.
			Write short essays of general kind and personal letters and emails in English.
CIRCUIT ANALYSIS	EC8251	C113	Apply Kirchhoff's current and voltage laws to simple circuits and Solve complex circuits using Mesh & Nodal Methods.
			Apply Network theorems to linear circuits and to solve simple and complex problems.
			Compute the Frequency response of Series and Parallel resonance and analyze tuned circuits.
			Estimate the Transient response of RLC circuits under DC and AC excitation using Laplace Transform
			Analyze and understand the behavior of two port networks
			Analyze the difference between Z parameter, Y parameter, ABCD parameter and H parameter in two port networks
ANALOG AND DIGITAL CIRCUIT LABORATORY	EC6311	C207	Design, construct and analyze the operations of different types of Biasing circuits
			Design, construct and analyze the performance of various Amplifiers
			Evaluate and Analyze the limitation of Bandwidth of single stage and multistage amplifier
			Design, construct, simulate and analyze the amplifier circuits using Spice
			Design, construct and analyze the performance of Cascade and Cascode amplifiers
			Design, construct and analyze the performance of various types of Shift registers
DIGITAL SIGNAL PROCESSING LABORATORY	EC6511	C306	Simulate the characteristics of different signals and manipulate the signals using convolution and correlation.
			Analyze the characteristics of signals in spectral domain using proper transformations and also design, simulate and analyze the characteristics of different types of FIR and IIR filters.
			Design and simulate the multirate filters and realize the equalizers.
			Study the architecture of DSP processors and emulate the operations related to MAC and addressing modes.
			Implement the IIR and FIR filtering operations, linear and circular convolution on different types of signals and also emulate the performance of FFT algorithm on DSP platforms.
			Implement the processes such as generation of waveforms and also analyze the effects of Finite word length on DSP systems.
COMPUTER	CS6551	C311	Identify the components required to build different

NETWORKS			types of networks
			Choose the required functionality at each layer for given application
			Identify solution for each functionality at each layer
			Trace the flow of information from one node to another node in the network
			Learn the congestion control algorithms
			Learn the various application layer protocols.
SPEECH PROCESSING	EC6007	C405-E31	Design innovative projects in the area of speech signal processing
			Extract various features which describes the characteristics of speech signal and compare various speech parameters.
			Choose an appropriate statistical speech model for a given application.
			Develop a speech recognition system for various applications.
			Design various types of speech synthesis systems.
			Analyze the speech signal by applying various digital signal processing techniques.
Programme:EEE			
COURSE NAME	COURSE CODE	NBA CODE	COURSE OUTCOMES (CO) Students will be able to
BASIC CIVIL AND MECHANICAL ENGINEERING	GE6251	C114	Describe the conventional method of surveying
			Explain the various building materials used and the components in the building
			Explain the mechanics, forces acting on the structures and list the types of bridge and dam
			Identify the functions and working of components like pumps and turbines that are used in various power plants
			Demonstrate the working principles of petrol and diesel engine and the functions of boiler
			Explain the usage and working of different components of refrigeration and air conditioning cycles
ELECTROMAGNETIC THEORY	EE6302	C203	Explain the sources and effects of electromagnetic fields and apply the basic mathematical concepts to analyze the vector fields
			Discuss the electric field intensity due to discrete and continuous charge distributions by applying appropriate laws
			Explain the concept of electric potential, polarization, energy density, capacitance for different applications
			Describe the concepts of magnetic fields, magnetic materials, magnetization, magnetic torque, inductance, energy density and its applications
			Describe and apply Faraday's law, Maxwell's equations for electromagnetic field applications and differentiate field and circuit theory related applications

			Describe and analyze electromagnetic wave propagation, power in conductor, free-space, dielectric medium and its applications
POWER SYSTEM ANALYSIS	EE6501	C301	Explain the concept of the nature of the modern power system, including the behavior of the constituent components and sub-systems
			Apply load flow analysis to an electrical power network and interpret the results of the analysis
			Analyze the network under balanced fault conditions and interpret the results
			Analyze a network under unbalanced fault conditions and interpret the results
			Describe the concept of transient stability of a single machine/infinite bus system using both analytical and time simulation methods
			Explain the factors which determine transient stability in both single machine and multi-machine systems
POWER ELECTRONICS AND DRIVES LABORATORY	EE6611	C316	Design the triggering circuits for Thyristor and can analyze the static and dynamic switching behavior of power semiconductor devices
			Classify the different configurations of power converters according to the power application
			Analyze the working and characteristics of step up and step down choppers
			Evaluate the performance of IGBT based single phase and three phase inverter with resistive load
			Analyze the working of different configurations three phase AC voltage controller with resistive load
			Analyze the simulation results for 1 Φ & 3 Φ semiconverter, 1 Φ & 3 Φ fullconverter, dc-dc Converters, ac voltage controllers for various load condition
PROTECTION AND SWITCHGEAR	EE6702	C402	Interpret the principles of protection schemes for various natures of faults
			Infer the various types of relays to detect the presence of faults, its location and to initiate the action for quick removal of the faults in power systems
			Examine the protection schemes for various electrical apparatus using electromagnetic relays
			Examine and apply the static and numerical relays for power system protection
			Inspect the arc quenching phenomena for fault condition and illustrates various current zero interruption theories
			Summarize, compare and select the types of circuit breakers according to the various occurrences of faults
ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION	EE6801	C409	Interpret the basics of electric traction and their performance
			Explain the types of lamps and design the illumination systems for various lighting schemes
			Discuss the types of electric heating and welding

			Infer the phenomenon of solar radiation and explain the types of solar energy collectors
			Explain the basic principles, components of wind energy conversion systems
			Discuss the types of wind turbines and analyze the aerodynamic force acting on the blades
Programme: ICE			
COURSE NAME	COURSE CODE	NBA CODE	COURSE OUTCOMES (CO) Students will be able to
ENGINEERING MATHEMATICS - II	MA8251	C110	Eigen values and eigen vectors, diagonalisation of a matrix, Symmetric matrices, Positive definite matrices and similar matrices
			Gradient of a scalar point function, divergent and curl of a vector point function and related identities
			Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
			Analytic function, conformal mapping and bilinear transformation
			Solve contour integration using Cauchy's Residue theorem
			Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
DIGITAL LOGIC CIRCUITS	EE8351	C203	Assess and gain knowledge in various number systems, simplify the logical expressions using Boolean functions.
			Design and analysis of combinational logic circuits
			Design, Analyze and evaluate the synchronous circuits.
			Design, analyze and evaluate the asynchronous circuits.
			Ability to understand the concept of digital simulation for development of application oriented logic circuits.
Development of simple programs using VHDL.			
ANALYTICAL INSTRUMENTS	EI6501	C303	Infer various techniques and methods of analysis which occur in the various regions of the spectrum.
			Estimate the various methods of analysis of industrial gases.
			Estimate the importance of chemical methods of analysis.
			Compute the instrumentation systems and their applications to various industries.
			Classify the various chromatography techniques.
			Describe about nuclear magnetic resonance and microscopic techniques.
INDUSTRIAL INSTRUMENTATION LABORATORY	EI6611	C316	Know the overview of power generation in various plants
			Compute various parameters like flow, level, pressure in power generating sections
			Identify the firing rate demand in power generation

			Know the control of drum level using various techniques
			Describes the management of burner
			Outline the control of turbine
LOGIC AND DISTRIBUTED CONTROL SYSTEM	EI6702	C402	Know about the Programmable Logic Controller (PLC) and their programming languages.
			Know about the applications of PLC.
			Describe about Computer Controlled Systems.
			Identify the architecture and local control unit of Distributed Control System (DCS).
			Gives the basic knowledge in the interfaces used in DCS.
			Know about the importance and applications of PLC and DCS used in process industries.
COMPUTER CONTROL OF PROCESSES	EI6801	C411	Analyze the discrete time systems in state variable form
			Explain system identification techniques
			Explain direct discrete design techniques
			Discuss and demonstrate multi-loop regulatory control
			Discuss multi variable regulatory control
			Apply computer control to any practical systems
Programme: IT			
COURSE NAME	COURSE CODE	NBA CODE	COURSE OUTCOMES (CO) Students will be able to
ENGINEERING GRAPHICS	GE8152	C106	Draw basic geometrical curves using free hand sketch
			Represent multiple orthographic views of an given object using free hand sketch
			Project points, lines and planes in first angle projection by rotating method
			Project inclined views of any given solids by rotating object method
			Project sectioned view and to develop lateral surface of given solid
			Sketch isometric and perspective views of given solid
PROGRAMMING AND DATA STRUCTURES II	CS6301	C202	Design problem solution using object oriented techniques
			Explain the concepts of data abstraction, encapsulation and inheritance
			Describe the concepts of generic programming
			Explain the concepts of Non-linear data structures and Use the control structures of C++ appropriately
			Explain the graph algorithms
			Apply the different data structures to problem solutions
WEB PROGRAMMING LABORATORY	IT6512	C308	Design Web pages using HTML/DHTML and style sheets
			Learn the client side scripting.
			Design and Implement database applications using Java and PHP.

			Create dynamic web pages using server side scripting.
			Write Client Server applications.
			Write application using C#.
COMPILER DESIGN	CS6660	C313	Learned the design and implement a prototype compiler.
			Develop lexical rules and grammars for a programming language. Use lex tools to create a lexical analyzer
			Implement the parsing techniques Top-down parsing for the given programming construct described in Context Free Grammar.
			Implement the parsing techniques Bottom-up parsing for the given programming construct described in Context Free Grammar Yacc tools to create a parser.
			Apply different error recovery routines to recover the errors seen at different phases of compilation. Describe the concepts of storage administration for different programming environments.
			Applied the various optimization techniques .Using the different compiler construction tools for various software developments
DATA WARE HOUSING AND DATA MINING	IT6702	C403	Design a datawarehouse
			Compare a various business analysis tools
			Outline the data mining concepts
			Compare and summarize the various Association rule mining algorithms
			Describe the classification algorithms
			Explain the clustering techniques
BUSINESS INTELLIGENCE	IT6010	C411E45	Explain about Business Intelligence Architecture,Life cycle and Projects
			Explain about various Knowledge Delivery techniques
			Explain about various Efficiency Analysis Methods
			Explain about various Business Intelligence Applications
			Explain about Future trends of Business Intelligence
			Explain about Machine Learning
Programme: MECH			
COURSE NAME	COURSE CODE	NBA CODE	COURSE OUTCOMES (CO) Students will be able to
BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING	BE8253	C112	Calculate total and branch current, voltage and power in a DC circuits for domestic and Industrial premises.
			Explain the types of loads and implementation of wiring
			Explain the working principle and operation of DC Machines, AC machines and Transformer
			Describe the concept and use of PN diode, BJT, FET and Op-amp
			Explain the importance of Transducer and their types.
			Select appropriate instruments for electrical measurement for a specific application

ENGINEERING THERMODYNAMICS	ME8391	C202	Infer the fundamentals of thermodynamics such as system, properties, process, state, cycles and equilibrium, Zeroth & First law of thermodynamics
			Apply the First law of thermodynamics for various processes of mass and energy transfer in open and closed systems
			Apply the second law of thermodynamics and entropy concepts in calculating the effectiveness of heat engines and refrigerators
			Analyze the rankine cycles and its efficiency improvement using steam tables and mollier diagrams
			Define the properties of Ideal and real gases and derive relations between them
			Make use of Psychrometry charts to study various psychrometric processes
COMPUTER AIDED DESIGN	ME6501	C301	Distinguish between the various parametric modeling transformations to reflect the engineering requirements.
			Explain the various representations of curves and its uses.
			Distinguish between the various modeling techniques and their applications.
			Describe the uses of shading, colouring models and also about the computer animation techniques
			Explain the concept of assembly with interference checking, position and orientation to ensure that parts will not interfere throughout their complete range of motion.
			Distinguish the various CAD standards to transfer images, files and graphics.
DESIGN AND FABRICATION PROJECT	ME6612	C317	Able to understand the concept of initial design, modelling, software to be used.
			Identify the different machines available in our department to fabricate the model.
			Knowledge about the feasible study to convert the designed model into a working model.
			Develop a strong base about purchasing the required components to fabricate their project.
			Teamwork to fabricate their designed model by using the machines available in our department along with the guidance of the supervisor and supporting staff.
			Students will be able to measure their own ability and performance in demonstrating their fabricated model within the stipulated time.
MECHATRONICS	ME6702	C402	Develop a simulation model for simple physical systems and explain mechatronics design process.
			Outline appropriate sensors and actuators for an engineering application.
			Write simple microcontroller programs.
			Interpret linearization of nonlinear systems and elements of data acquisition.

			Knowledge on various applications of design of mechatronics systems.
			Able to design mechatronics system with the help of Microprocessor, PLC and other electrical and Electronics Circuits.
ENGINEERING ECONOMICS	MG6863	C410	Apply the appropriate engineering economics analysis method(s) for problem solving: present worth, annual cost, rate-of-return, payback, break-even, benefit-cost ratio.
			Evaluate the cost effectiveness of individual engineering projects using the methods learned and draw inferences for the investment decisions.
			Compute the depreciation of an asset using standard depreciation techniques to assess its impact on present or future value.
			Apply all mathematical approach models covered in solving engineering economics problems
			Compare the differences in economic analysis between the private and public sectors. Recognise the limits of mathematical models for factors hard to quantify.
			Knowledge Make or Buy decision.
Programme: ME COMMUNICATION SYSTEMS			
COURSE NAME	COURSE CODE	NBA CODE	COURSE OUTCOMES (CO) Students will be able to
ADVANCED RADIATION SYSTEMS	CU5191	C102	Explain the antenna fundamental concepts
			Design an aperture antenna
			Design procedure and concepts of antenna arrays
			Design antenna for various applications
			Design a micro strip antenna and understand the basic concepts of modern antenna for automobiles.
Knowledge of modern antenna design			
DIGITAL COMMUNICATION RECEIVERS	CU5071	C111PE2	Explain the basic principles of digital communication techniques.
			Gain knowledge about receivers for AWGN channel
			Gain knowledge about receivers for fading channel
			Analyze the concepts of synchronization.
			Analyze the concepts of adaptive equalization techniques.
Analyze and design the equalizers for various applications			
MILLIMETER WAVE COMMUNICATIONS	CU5301	C201	Explain the characteristics and applications of millimeter wave communication
			Analyze Millimeter devices and circuits
			Modulations for millimeter wave communications and its design considerations.
			Analyze MM WAVE MIMO SYSTEMS
			Design antenna for Millimeter wave frequencies
Learn Millimeter wave technology			

COMMUNICATION NETWORK SECURITY	NC5291	C203PE6	Learn the need and concept of security and Apply number theory in security mechanisms.
			Analyze symmetric and asymmetric key cryptography
			Explain authentication methods and digital signature standard
			Learn various protocols used for trusted identity
			Explain security at different layers
			Analyze firewall and S/MIME

COURSE OUTCOMES IN Sara Portal

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COURSE OUTCOMES FOR THE SUBJECT - LINEAR INTEGRATED CIRCUITS

Degree & Branch :B.E. Electronics and Communication Engineering, Sem:4 ,Sec A
Subcode EC8453, Faculty: eindhumathy-ec

NBA Code for the Subject C214 Target 65 Credits 3

- At the end of this course, Student will be able to

CO	Course outcome Description
C214.1	Analyze the basic building blocks of linear integrated circuits.
C214.2	Design linear and non linear applications of OP AMPS
C214.3	Design applications using analog multiplier and PLL
C214.4	Design ADC and DAC using OP AMPS
C214.5	Generate waveforms using OP AMP Circuits
C214.6	Analyze special function ICs

Mapping Course outcome - Programme outcome - Program Specific outcome

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
C214.1	2	2	2	2	2	2	-	-	-	-	2	2	2	2	-	-
C214.2	2	2	2	2	2	2	-	-	-	-	2	2	2	2	-	-
C214.3	2	2	2	2	2	2	-	-	-	-	2	2	2	2	-	-
C214.4	2	2	2	2	2	2	-	-	-	-	2	2	2	2	-	-
C214.5	2	2	2	2	2	2	-	-	-	-	2	2	2	2	-	-
C214.6	2	2	2	2	2	2	-	-	-	-	2	2	2	2	-	-

Note: Enter correlation levels 1, 2 or 3 as defined below:
1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High). If there is no correlation, put "-"

You have frozen the CO-PO Mapping. No more corrections possible.

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COURSE OUTCOMES FOR THE SUBJECT - LINEAR INTEGRATED CIRCUITS LABORATORY

Degree & Branch :B.E. Electronics and Communication Engineering, Sem:4 ,Sec A
Subcode EC8462, Faculty: eindhumathy-ec

NBA Code for the Subject C217 Target 80 Credits 2

- At the end of this course, Student will be able to

CO	Course outcome Description
C217.1	Evaluate the circuit parameters, design and construct both Linear and Non linear applications using OPAMP IC741and
C217.2	Evaluate the circuit parameters to construct the oscillators and amplifiers using operational amplifiers IC741 and
C217.3	Evaluate the design parameters of the filters using Opamp IC741 and perform experiment for analyzing the frequency
C217.4	Analyze the principle operation of PLL - construct a frequency multiplier circuit using PLL and R-2R Ladder Type D- A
C217.5	Evaluate the design parameters of DC power supply circuits, construct and analyze the performance of power supply
C217.6	Analyze the performance of oscillators, multivibrators, A/D converters and Analog multipliers using SPICE simulation

Mapping Course outcome - Programme outcome - Program Specific outcome

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
C217.1	3	3	3	3	3	2	-	-	-	-	3	2	2	3	-	-
C217.2	3	3	3	3	3	2	-	-	-	-	3	2	2	3	-	-
C217.3	3	3	3	3	3	2	-	-	-	-	3	2	2	3	-	-
C217.4	3	3	3	3	3	2	-	-	-	-	3	2	2	3	-	-
C217.5	3	3	3	3	3	2	-	-	-	-	3	2	2	3	-	-
C217.6	3	3	3	3	3	2	-	-	-	-	3	2	2	3	-	-

Note: Enter correlation levels 1, 2 or 3 as defined below:
1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High). If there is no correlation, put "-"

Please tick to freeze your CO-PO Mapping

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EC8453 - Linear Integrated Circuits

Program Educational Objectives (PEOs)

Graduates of Electronics and Communication Engineering will

PEO1: have a **strong foundation** in the required sciences in order to pursue studies in Electronics and Communication Engineering.

PEO2: have a **broad exposure** to the students in various topics related to Electronics and Communication Engineering fields, to enable them to excel in their professional career / higher studies.

PEO3: possess **innovative skills** in order to solve the technical problems which will arise in their professional life.

PEO4: have **professional and ethical** attitude and an ability to visualize the engineering issues in a broader social context.

Program Specific Outcomes (PSOs)

Graduates of Electronics and Communication Engineering will be able to:

PSO1: Comprehend and demonstrate the principles and concepts of Semiconductor theory, Signal Processing & Embedded systems in the fields of Consumer Electronics, Medical Electronics and Defense Electronics.

PSO2: Apply emerging Information and Communication Engineering Techniques to solve real time problems.

Course Outcomes (COs)

C214.1	Analyze the basic building blocks of linear integrated circuits.
C214.2	Design linear and non linear applications of OP – AMPS
C214.3	Design applications using analog multiplier and PLL
C214.4	Design ADC and DAC using OP – AMPS
C214.5	Generate waveforms using OP – AMP Circuits
C214.6	Analyze special function ICs

COs	Programme Outcomes												PSOs	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C214.1	2	2	2	2	2	2	-	-	-	-	2	2	2	2
C214.2	2	2	2	2	2	2	-	-	-	-	2	2	2	2
C214.3	2	2	2	2	2	2	-	-	-	-	2	2	2	2
C214.4	2	2	2	2	2	2	-	-	-	-	2	2	2	2
C214.5	2	2	2	2	2	2	-	-	-	-	2	2	2	2
C214.6	2	2	2	2	2	2	-	-	-	-	2	2	2	2
AVG	2	2	2	2	2	2	-	-	-	-	2	2	2	2

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Record Note book

Course Outcomes (COs)

C217.1	Evaluate the circuit parameters, design and construct both Linear and Non linear applications using OPAMP IC741 and analyze the performance metrics
C217.2	Evaluate the circuit parameters to construct the oscillators and amplifiers using operational amplifiers IC741 and analyze the performance of the same
C217.3	Evaluate the design parameters of the filters using Opamp IC741 and perform experiment for analyzing the frequency response
C217.4	Analyze the principle operation of PLL - construct a frequency multiplier circuit using PLL and R-2R Ladder Type D- A Converter using Op-amp.
C217.5	Evaluate the design parameters of DC power supply circuits, construct and analyze the performance of power supply circuits using LM317 and IC723.
C217.6	Analyze the performance of filters, multivibrators, A/D converters and Analog multipliers using SPICE simulation tool.

CO / PO MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2
C217.1	3	3	3	3	3	2	-	-	-	-	3	2	2	3
C217.2	3	3	3	3	3	2	-	-	-	-	3	2	2	3
C217.3	3	3	3	3	3	2	-	-	-	-	3	2	2	3
C217.4	3	3	3	3	3	2	-	-	-	-	3	2	2	3
C217.5	3	3	3	3	3	2	-	-	-	-	3	2	2	3
C217.6	3	3	3	3	3	2	-	-	-	-	3	2	2	3
Average	3	3	3	3	3	2	-	-	-	-	3	2	2	3

L. Mohan V.
STAFF

H. S. Reddy
HOD/ECE

EC 8462

LINEAR INTEGRATED CIRCUITS LAB

Program Educational Objectives (PEOs)

- PEO1: Have a strong foundation in the required sciences in order to pursue studies in Electronics and Communication Engineering.
- PEO2: Have a broad exposure to the students in various topics related to Electronics and Communication Engineering fields, to enable them to excel in their professional career/higher studies.
- PEO3: possess innovative skills in order to solve the technical problems which will arise in their professional life.
- PEO4: have professional and ethical attitude and an ability to visualize the engineering issues in a broader social context.

Program Specific Outcomes (PSOs)

- PSO1: Comprehend and demonstrate the principles and concepts of Semiconductor theory, Signal Processing & Embedded systems in the fields of Consumer Electronics, Medical Electronics and Defence Electronics.
- PSO2: Apply emerging Information and Communication Engineering Techniques to solve real time problems.

Course Outcomes (COs) At the end of this course, Student will be able to

C217.1	Evaluate the circuit parameters, design and construct both Linear and Non linear applications using Opamp IC741 and analyze the performance metrics
C217.2	Evaluate the circuit parameters to construct the oscillators and amplifiers using operational amplifiers IC741 and analyze the performance of the same
C217.3	Evaluate the design parameters of the filters using Opamp IC741 and perform experiment for analyzing the frequency response
C217.4	Analyze the principle operation of PLL - construct a frequency multiplier circuit using PLL and R-2R Ladder Type D-A Converter using Op-amp
C217.5	Evaluate the design parameters of DC power supply circuits, construct and analyze the performance of power supply circuits using LM317 and IC723
C217.6	Analyze the performance of oscillators, multivibrators, A/D converters and Analog multipliers using SPICE simulation tool.

Programme Outcomes

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C217.1	3	3	3	3	2	-	-	-	-	3	2	2	2	3	-
C217.2	3	3	3	3	2	-	-	-	-	3	2	2	2	3	-
C217.3	3	3	3	3	2	-	-	-	-	3	2	2	2	3	-
C217.4	3	3	3	3	2	-	-	-	-	3	2	2	2	3	-
C217.5	3	3	3	3	2	-	-	-	-	3	2	2	2	3	-
C217.6	3	3	3	3	2	-	-	-	-	3	2	2	2	3	-

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STAFF

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HOD | ECE

Branch: ECE A

COURSE LOG

Subject: EC8462 Linear Integrated Circuits Lab

Date	Day	Order	Period	Particulars of Portions Covered	Remarks
12.12.19	2		234	I cycle experiments	
14.12.19	4		638	I cycle experiments	
18.12.19	2		234	I cycle experiments	experiment
20.12.19	4		678	I cycle experiments	1406
4.1.2020	2		234	I cycle experiments	
7.1.2020	4		678	I cycle experiments	
20.1.2020	4		678	I cycle experiments	
23.1.2020	2		234	I cycle experiments	
25.1.2020	4		678	I cycle experiments	
29.1.2020	2		234	I cycle experiments	
31.1.2020	4		678	I cycle experiments	8xpt
4.2.2020	2		634	II cycle experiments	7xpt
10.2.2020	4		678	II cycle experiments	
10.2.2020	2		234	II cycle experiments	
14.2.2020	4		678	II cycle experiments	
15.2.2020	2		34	II cycle experiments	
18.2.2020	4		678	II cycle experiments	
21.2.2020	2		234	II cycle experiments	
25.2.2020	4		678	II cycle experiments	
28.2.2020	4		678	II cycle experiments	
5.3.2020	2		834	II cycle experiments	
12.3.2020	4		678	II cycle experiments	
12.3.2020	2		34	II cycle experiments	
14.3.2020	4		678	II cycle experiments	