



# ADITYA COLLEGE OF ENGINEERING

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## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### Course Outcomes

#### Class: I Year I Semester

Course Name with Code	Course Outcome	
Communicative English C111	CO1	Understand past culture, tradition, speaking English in real life situations, identify kinds of nouns
	CO2	Recall Nehru's intention in his letter to Indira Priyadarshini, answering a series of questions, greetings and leave takings, articles, prepositions
	CO3	Recognize Stephen Hacking's contribution, his life and goals, speaking, writing letters on various contexts, writing cover letters, CVs, E-mail etiquette
	CO4	Understand Wangari Maathai's hard work, Role plays for academic conversations, understand. Permissions, requesting, Inviting.
	CO5	Understand formal oral presentations writing academic proposals, research articles, Technical Vocabulary
	CO6	Understand the importance of soft skills, comprehend Scientific and Technical English
Mathematics-I C112	CO1	Discuss the Ratio test and Mean value theorems
	CO2	Solve First order Linear differential equations
	CO3	Solve the Higher order non-homogeneous Differential Equations
	CO4	Model physical phenomena of LCR series circuit and Simple Harmonic Motion.
	CO5	Determine the extreme values for the function of two variables.
	CO6	Compute double and triple integrals to find Area and Volume.
Applied chemistry C113	CO1	Explain about fabrication of plastic and recycling of e waste.
	CO2	Explain types of batteries and control methods of corrosion.
	CO3	Determine the preparation of Non elemental semiconducting materials
	CO4	Determine the synthesis of nano materials and its applications.
	CO5	Analyse spectroscopic instrumentations and compare sources of energy.
	CO6	Discuss molecular machines and molecular motors
Programming for Problem Solving using C C114	CO1	To discuss machine language with the help of numbering system and recognize different variables different statements and different storages to write a program
	CO2	To predict for which problem we have to use which type of decision statements and which type of loop
	CO3	To classify the data by storing data in different formats like arrays structures and unions
	CO4	To analyze diff application of pointers to access values of memory locations through address and variable
	CO5	To subdivide the problem into functions and retrieving file information using file operations
	CO6	To operate data in file information using file operations

<b>Engineering Drawing</b> C115	CO1	Understand the knowledge of basic geometries, geometric tools, and procedures used in engineering drawing.
	CO2	Draw simple curves of ellipse, cycloid and involutes.
	CO3	Construct projections of points, straight lines & planes inclined to one or both the planes.
	CO4	Construct Projections of planes inclined to one or both the planes.
	CO5	Construct projection of solids on different orientations
	CO6	Transform multi-views to isometric views and vice-versa
English Communication Skills Lab C116	CO1	Identify 44 sounds of language and develop correct pronunciation learning Phonetics
	CO2	Demonstrate language functions: LSRW Skills
	CO3	Develop and practice correct accent, intonation, and rhythm to get acquaintance with language.
	CO4	Develop speaking skills through participation in activities and vocabulary
Applied chemistry lab C117	CO1	Explain volumetric analysis with different indicators
	CO2	Calculate the Hardness of water by EDTA
	CO3	Determine the concentration of acids by using different instruments
	CO4	Analyse the quantity of ions in organic solutions
Programming for Problem Solving using C Lab C118	CO1	Knowledge on various concepts of C language.
	CO2	Draw flowcharts and write algorithms.
	CO3	Design and development of C problem solving skills
	CO4	Design and develop modular programming skills

**Class: I Year II Semester**

<b>Course Name with Code</b>	<b>Course Outcome</b>	
Mathematics -II C121	CO1	Explain system of linear algebraic equations using Gauss Elimination method
	CO2	Use Cayley-Hamilton theorem to find the inverse and power of a matrix problems
	CO3	Solve the approximate roots of polynomial and transcendental equations by using Iterative methods
	CO4	Solve the system of linear equations using Gauss Jacobi and Gauss-Seidal methods
	CO5	Apply Newton's forward and backward interpolation forequal intervals and Lagrange's formula for unequal intervals
	CO6	Apply Numerical Integral techniques to different Engineering problems

Applied physics C122	CO1	Understand the concepts of interference, diffraction and polarization: connect it to a few engineering applications.
	CO2	Explain concepts of lasers and Optical fibers .
	CO3	Explain the fundamental concepts of Quantum behavior of matter and electron theory.
	CO4	Describe basics of dielectrics and magnetism.
	CO5	Comprehend the use of concepts of semiconductor physics. Explore a few of their technological applications.
	CO6	Illustrate basics of Superconductivity and its applications.
Object Oriented Programming Through Java C123	CO1	Compare Procedure oriented programming and Object oriented approaches for solving a problem..
	CO2	Understand OOPs Concept , Java language features
	CO3	make use of objects and classes and for developing programs
	CO4	Examine java programs for complex problems using features like class hierarchies, inheritance and polymorphic, dynamic method dispatch.
	CO5	Experiment with how to implement multithreaded programming
	CO6	Development driven GUI based applications using AWT for real world scenarios.
Network Analysis C124	CO1	Use network techniques, like node analysis and loop analysis to write equations for large linear circuits.
	CO2	Explain the RLC circuits behavior in detailed.
	CO3	Analyze the performance of periodic waveforms.
	CO4	Apply Thevenin's and Norton's theorems to analyze and design for maximum power transfer theorem. Apply the concept of linearity and the associated technique of superposition to circuits and networks.
	CO5	Analyze simple two – port circuit.
	CO6	Apply graph theory to circuits.
Basic Electrical Engineering C125	CO1	Understand the principle of operation, constructional details and characteristics of DC Machines.
	CO2	Determine the EMF and Torque developed by the DC motor.
	CO3	Understand the constructional details, principle of operation and performance of the single phase transformers.
	CO4	Understand principle of operation, construction and details of synchronous machines.
	CO5	Understand the principle of operation, constructional details and performance of 3-phase induction motors
	CO6	Understand the principle of operation of various single phase motors

Electronic Workshop Lab C126	CO1	Identify and classify of R, L, C components. Calculate capacitance & Resistance from 3 colour code and verify with multimeter.
	CO2	Explain about breadboard and its internal connection. Connect a LED ON/OFF circuit in breadboard.
	CO3	Identify active components
	CO4	Identify switches and cables Voltmeters, Ammeters with neat sketches, and also maintenance of multimeter.
	CO5	Recognize Regulated power supply and verify the same with multimeter
	CO6	Measure amplitude and frequency using CRO. Plot the same on graph
Basic Electrical Engineering Lab C127	CO1	Demonstrate the magnetization characteristics of DC shunt generator
	CO2	Demonstrate the speed control techniques for a DC shunt motor
	CO3	Determine the performance characteristics of DC machine by conducting direct and indirect tests.
	CO4	Compute the performance of 1-phase transformer by conducting OC & SC tests and Sumpner's test
	CO5	Evaluate the efficiency of 3-phase induction motor by conducting brake test
	CO6	Determine the regulation of alternator by synchronous impedance method
Applied Physics Lab C128	CO1	Determine the various parameters like wavelength of different light sources, curvature of lens using spectrometer and travelling microscope
	CO2	Apply the concepts related to semiconductors, electric and magnetic fields
	CO3	Demonstrate the photo electric effect
	CO4	Apply theoretical principles for measurements in the laboratory

**Class: II Year I Semester**

Course Name with Code	Course Outcome	
Electronic Devices And Circuits C211	CO1	Discuss the basic concepts of semi-conductor physics and Explain the formation of PN Junction and how it can be used as a diode in different modes of operation.
	CO2	Classify and explain special semiconductor devices
	CO3	Analyze the construction, working principle of rectifiers with and without filters and necessary comparisons.
	CO4	Explain the construction, principle of operation of BJT and FET, with their VI characteristics in different configurations.
	CO5	Recognize the need of transistor biasing and discuss various biasing techniques, stabilization concepts for BJT and FET.
	CO6	Analyze small-signal amplifier circuits using BJT and FET in different

		configurations.
Switching Theory And Logic Design C212	CO1	Classify different number systems
	CO2	Discuss about different logical operations
	CO3	Use of minimization techniques to reduce the functions
	CO4	Design different combinational logical circuits
	CO5	Apply knowledge of flipflop in designing registers and counters
	CO6	Design methodology for sequential circuits and algorithmic state machines
Signals And Systems C213	CO1	Discuss the various classifications of signals and systems
	CO2	Explain the frequency domain representation of signals using fourier series.
	CO3	Determine the systems based on their properties and determine the response of LTI systems.
	CO4	Illustrate the sampling process and various types of sampling techniques.
	CO5	Choosing laplace transform to analyse signals and systems.
	CO6	Choosing z- transform to analyse signals and systems.
Mathematics-Iii C214	CO1	Compute Line, Surface, Volume integrals using Green's, Stoke's and Divergence theorems.
	CO2	Use Laplace Transform methods to solve initial value problems for constant coefficient linear ordinary differential equations.
	CO3	Discuss the expansion of a given periodic function by Fourier series in the given interval.
	CO4	Solve engineering problems using Fourier Transforms and Inverse Fourier Transforms.
	CO5	Apply a range of techniques to solve first and second order linear partial differential equations.
	CO6	Model physical phenomena of Heat and Wave equations by using Partial differential equations.
Random Variables And Stochastic Processes C215	CO1	Summarize the concept of the random experiments, event probabilities, random variables and their description, functions of random variables
	CO2	Evaluate and apply moments & characteristic functions and understand the concept of inequalities and probabilistic limits.
	CO3	Characterize probability models and function of random variables based on single & multiples random variables.
	CO4	Analyze the concept of random processes and their time domain description
	CO5	Summarize the spectral characteristics of random processes, and filtered random processes

	CO6	Demonstrate the specific applications to Poisson and Gaussian processes and Representation of low pass and band pass noise models.
Oops Through Java Lab L216	CO1	Identify classes, objects, members of a class and the relationship among them needed for a specific problem
	CO2	Demonstrate the concepts of polymorphism and inheritance, packages and Strings
	CO3	Apply Exception handling and event handling
	CO4	Demonstrate on the multi-tasking by using multiple threads
	CO5	Apply File handling methods
	CO6	Design simple GUI interfaces to interact with users, using Applets, swings and AWT.
Electronic Devices And Circuits Lab L217	CO1	Apply analytical skill to measure voltage, frequency and phase of any waveform using CRO
	CO2	Sketch and Analyze the characteristics of basic two terminal electronics devices like PN Junction diode and Zener diode.
	CO3	Design and Analyze diode rectifier circuits
	CO4	Sketch and Analyze the characteristics of BJT and FET.
	CO5	Sketch and Analyze the characteristics of SCR and UJT.
	CO6	Design and Analyze Transistor biasing and amplifiers.
Switching Theory And Logic Design Lab L218	CO1	Develop Boolean Expressions using Gates
	CO2	Design logic gates using universal gates
	CO3	Design Full adder and subtractor
	CO4	Design of Multiplexer and Demultiplexer
	CO5	Design of convertors, registers using flipflops
	CO6	Design Asynchronous counters using flip-flops, and Comparators

**Class: II Year II Semester**

<b>Course Name with Code</b>	<b>Course Outcome</b>	
Electronic Circuit Analysis C221	CO1	Analyze small signal high frequency transistor amplifier using BJT and FET
	CO2	Classify Multistage Amplifiers using BJT and FET
	CO3	Explain feedback principle and concept
	CO4	Explain frequency of oscillation and condition for oscillations of RC and LC oscillators.
	CO5	Categorize the characteristics of negative feedback amplifier
	CO6	Classify power and tuned amplifiers and their analysis with performance comparison

Digital Ic Design C222	CO1	Summarize the basics of Hardware Description Languages
	CO2	Demonstrate the combinational Logic Design with relevant digital ICs with HDL
	CO3	Illustrate the sequential logic design with relevant digital ICs with HDL
	CO4	Analyze the Sequential MOS Logic circuits
	CO5	Categorize different CMOS logic circuits with neat architectures
	CO6	Evaluate the behavior of Sequential MOS logic circuits with various flip-flops
Analog Communication C223	CO1	Describe various techniques for amplitude modulation and demodulation
	CO2	Differentiate various SSB & DSB modulation and demodulation schemes and their spectral characteristics
	CO3	Differentiate various angle modulation and demodulation schemes and their spectral characteristics
	CO4	Describe various functional blocks of radio transmitters and receivers
	CO5	Calculate noise characteristics of various analog modulation methods
	CO6	Differentiate various pulse modulation and demodulation schemes and their spectral characteristics
Linear Control Systems C224	CO1	Discuss the concept of systems and control systems Determine the transfer functions of Mechanical systems
	CO2	Calculate the transfer function using block diagram algebra and signal flow graph methods and analyse the transient and steady state performance of the control system
	CO3	Evaluate the stability of LTI system using Routh's stability criterion and the root locus method
	CO4	Evaluate the stability of LTI system using frequency response methods
	CO5	Design lag, lead, lag-lead compensators to improve system performance from bode diagrams
	CO6	Determine the state models to solve time invariant state equations and outline the concepts of controllability and observability of control systems
Management And Organizational Behavior C225	CO1	Understand the process of management, principles, leadership styles and basic concepts of Organization
	CO2	Understand the conceptual knowledge of Functional Management, Human resource management, Marketing Management
	CO3	Understand the Contemporary Management practices and Strategic Management
	CO4	Understand the theories of Motivation in connection with individual behaviour
	CO5	Associating the organizations groups that affect the climate of an entire organization
	CO6	Understand the importance of identification of stress in organizations and the strategies to handle the stress
Electric Circuit	CO1	Determine $f_T$ of given transistor

Analysis Lab L226	CO2	Design various feedback amplifiers and simulate it.
	CO3	Design various power amplifiers and simulate it.
	CO4	Design and simulate RC/Wien/Hartley/ Colpott's Oscillator
	CO5	Design and simulate two stage RC coupled amplifier
	CO6	Design and simulate various tuned amplifier
Analog Communication Lab L227	CO1	Illustrate various analog modulation and demodulation techniques using hardware and develop the required code using simulation software.
	CO2	Apply the sampling theorem to reconstruct the original signal and write the code for simulation.
	CO3	Compare, discriminate, identify the different analog pulse modulation techniques (PAM,PWM and PPM) using hardware and develop the required code using simulation software.
	CO4	Calculate the modulation index and frequency deviation of FM through calibration using hardware and can develop the code using MATLAB
	CO5	Analyze the AGC characteristics of amplifier
	CO6	Examine the frequency response of pre-emphasis and de-emphasis circuits.
	CO5	understand the basic digital circuits and to verify their operation
CO6	Apply Boolean laws to simplify the digital circuits	

**Class: III Year I Semester**

<b>Course Name with Code</b>	<b>Course Outcome</b>	
Analog Ics And Applications C311	CO1	Explain the basic operation and performance parameters of differential amplifiers
	CO2	Discuss the internal operation of op amp and its parameters
	CO3	Analyze different linear and non-linear applications using op amp
	CO4	Analyze active filters using op amp
	CO5	Analyze the 555 timers and phase locked loop
	CO6	Analyze the concept of different types of D-A & A-D converters
Electromagnetic Waves And Transmission Lines C312	CO1	Analyze T& $\pi$ Equivalent Circuits, Transmission Line Equations, Characteristic Impedance, Propagation Constant, Phase and Group Velocities, Infinite Line, Lossless lines, distortion less lines.
	CO2	Analyze input impedance , reflection coefficient, VSWR of transmission lines using smith chart
	CO3	Determine E and H using various laws and applications of electric & magnetic fields
	CO4	Apply the Maxwell equations to analyze the time varying behavior of

		Enweaves
	CO5	Describe the uniform plane wave concept and characteristics of uniform plane wave in various media
	CO6	Calculate Brewster angle, critical angle and total internal reflection, uniform plane wave condition for dielectric medium
Digital Communications C313	CO1	Understand pulse digital modulation systems such as PCM,DPCM and DM
	CO2	Understand various digital modulation techniques
	CO3	Analyze the performance of a Digital Communication System for probability of error
	CO4	Able to design a digital communication system
	CO5	Analyze various source coding technique
	CO6	Compute and Analyze block codes,cyclic codes and convolution codes.Design a coded communication system
Operating Systems C314	CO1	Describe various generations of Operating System and functions of Operating System
	CO2	Describe the concept of program, process and thread and various CPU Scheduling Algorithms
	CO3	Solve Inter Process Communication problems using Mathematical Equations by various methods
	CO4	Analyze various memory management schemes
	CO5	Analyze principles of dead lock and secondary-storage structure
	CO6	Analyze Security and Protection Mechanism In Operating System
Electronic Measurements And Instrumentation C315	CO1	Select the instrument to be used based on the requirement.
	CO2	analyze the different signal generators and wave analyzers
	CO3	Understand the design of Oscilloscopes for different applications.
	CO4	Analysis & Design of bridges for different applications.
	CO5	Identify the different transducers for measurement of different parameters.
	CO6	Understand the measurement of different physical parameters.
Analog Ics And Applications Lab L316	CO1	Design linear op-amp circuits like Adder, Subtractor and Comparator.
	CO2	Design different circuits of Linear applications of OP-AMP.
	CO3	Design various active filters like LPF, HPF, BPF and BRF using IC 741
	CO4	Design different circuits of Non Linear applications of OP-AMP.
	CO5	Analyze different Oscillator circuits using IC 741

	CO6	Design waveform generator circuits using Op-Amp
Digital Communications Lab L317	CO1	Examine time division multiplexing technique
	CO2	Examine Pulse digital techniques like PCM & DM
	CO3	Illustrate different modulation schemes involving phase modulation
	CO4	illustrate digital modulation scheme involving frequency modulation
	CO5	Design the source coding techniques based on the concept of information theory.
	CO6	Evaluate various error coding and detecting codes

**Class: III Year II Semester**

Course Name with Code	Course Outcome	
Microprocessor And Microcontrollers C321	CO1	Understand the architecture, features and basic instructions of 8086
	CO2	Apply 8086 assembly language code to solve problems for arithmetic operations, code conversion and handle interrupts
	CO3	Analyze various interfacing techniques and apply them for the design of processor based systems
	CO4	Understand the architecture of microcontroller and their operation.
	CO5	Apply the concept of interfacing memory and peripherals for system level interfacing design.
	CO6	Analyze the architecture and features of ARM Processor
Vlsi Design C322	CO1	Define the basic electrical properties of MOS Circuits
	CO2	Explain stick diagram and layout
	CO3	Apply the basic circuits concept: sheet resistance, area capacitance and delay unit.
	CO4	Asses the basic building blocks of analog IC design
	CO5	Design the CMOS combinational and sequential logic circuit, basic principle, speed and power dissipation
	CO6	Discuss FPGA design, limitations of MOSFET and future technologies.
Digital Signal Processing C323	CO1	Calculate system output in time domain
	CO2	Solve the DFT values by using FFT algorithms
	CO3	Evaluate a digital filter(fir&iir) from the given specifications
	CO4	Discuss different digital filter realization methods
	CO5	Explain about DSP processors
	CO6	Explain about theArchitecture of TMS320C5X

Microwave Engineering C324	CO1	To analyze completely the rectangular waveguides, their mode characteristics, and design waveguides
	CO2	Understand the various types of waveguide cavity and ferrite components
	CO3	Derive the performance characteristics of 2-Cavity and Reflex Klystrons, Magnetrons, TWTs and estimate their efficiency levels.
	CO4	Understand the concepts of TEDs, RWH Theory and explain the salient features of Gunn Diodes and ATT Devices.
	CO5	Formulate the S-Matrix for various microwave junctions, and understand the utility of S-parameters in microwave component design.
	CO6	Understand the various microwave lab measurement Technique.
Python Programming C325	CO1	Comprehend The Basics Of Python Programming
	CO2	Demonstrate The Principles Of Structured Programming
	CO3	Analyze The Usage Of Different Built In Data Structures
	CO4	Applying Functions To Implement A Methodology
	CO5	Apply The Packages And Modules As Per The Requirements
	CO6	Analyze The Difference Between Error And Exception
Microprocessor And Microcontoller Lab L326	CO1	Write 8086 Assembly Language Programming for 16-bit arithmetic operation
	CO2	Illustrate sorting of array and finding of factorial of given number by using 8086 ALP
	CO3	Compute ALP for interfacing of 8086
	CO4	Write ALP for 8051
	CO5	Demonstrate interfacing of 8051
	CO6	Develop ALP using ARM CORTEX M3 PROCESSOR USING KEIL MDK ARM
Very Large Scale Integrated Circuits Lab L327  Very Large Scale Integrated Circuits Lab L327	CO1	Discuss about Xilinx Vivado software & Xilinx hardware.
	CO2	Design, develop VHDL Source code and Implement the code for all Logic Gates and combinational circuits
	CO3	Design, develop VHDL Source code and Implement the code for sequential circuits
	CO4	Discuss EDA Tools.
	CO5	Design inverter and universal gates & the layouts for the circuits.
	CO6	Design combinational and sequential circuits & the layouts for the circuits.
DSP LAB L328	CO1	Use simulation tool for Signal Processing Applications

	CO2	Generate various types of discrete time signal.
	CO3	Calculate linear and circular convolution of discrete sequences
	CO4	Sketch the magnitude and phase response of DFT, Inverse DFT and FFT of discrete time signals.
	CO5	Design IIR and FIR digital filters for real time DSP applications
	CO6	Demonstrate DSP systems using DSP processor
	ABP LAB L329	CO1
CO2		Comprehend Microcontroller-Transducers Interface techniques
CO3		<b>Establish Serial Communication link with Arduino</b>
CO4		Analyze basics of SPI interface
CO5		Interface Stepper Motor with Arduino
CO6		Analyze Accelerometer interface techniques

**Class: IV Year I Semester**

<b>Course Name with Code</b>	<b>Course Outcome</b>	
Universal Human Values: Understanding Harmony C411	CO1	Understand and analyze the essentials of human values and skills, self exploration, happiness and prosperity.
	CO2	Evaluate coexistence of the "I" with the body.
	CO3	Identify and evaluate the role of harmony in family, society and universal order.
	CO4	Understand and associate the holistic perception of harmony at all levels of existence.
	CO5	Develop appropriate technologies and management patterns to create harmony in professional and personal lives.
	CO6	Develop sense of commitment and courage to act
Optical Communications C412	CO1	Describe the basic concepts and theory of optical communication
	CO2	Explain the signal losses with their computation and dispersion mechanism occurring inside the optical fiber cable
	CO3	Classify the various types of Connectors and Joints in Optical Fibers
	CO4	Characterize the optical sources used in optical communication with their comparative study.
	CO5	Analyze the amount of light lost going through an optical system, dispersion of optical fibers
	CO6	Calculate the performance of an optical receiver to get idea about power budget and ultimately be an engineer with adequate knowledge in optical domain
Satellite	CO1	Discuss the fundamental concept of satellite communications and orbital

Communication C413		mechanism
	CO2	Discuss various satellite subsystems
	CO3	Apply analytical problem-solving skills to design a satellite link
	CO4	Analyze the different multiple access techniques and the architectural principles of earth stations
	CO5	Discuss the concept of LEO and GEO-stationary satellite systems
	CO6	Analyze and interpret the functioning of satellite navigation and GPS system
Radar Engineering C414	CO1	Demonstrate the radar range equation and to solve some analytical problems
	CO2	Describe the different types of radars and its applications
	CO3	Illustrate the Block Diagram of MTI and Pulse Doppler Radar
	CO4	Describe the concept of tracking and different tracking techniques
	CO5	Analyze the detection of signals in noise.
	CO6	Analyze the various components of radar receiver and its performance
Image Processing C415	CO1	Describe elements of visual perception, importance of relationship between pixels, applications in image processing
	CO2	Demonstrate how an image can be enhanced by using histogram techniques.
	CO3	Classify image compression techniques.
	CO4	Illustrate wavelet transform based compression
	CO5	Classify image Segmentation techniques.
	CO6	Demonstrate applications of digital water marking
Cryptography and Network Security C416	CO1	Explain basic concepts of Security and relate mathematic concepts behind the cryptographic algorithms
	CO2	Summarize different classical encryption techniques to Illustrate Symmetric and Asymmetric Cryptography.
	CO3	Summarize the number of secret key and public key cryptographic algorithms
	CO4	Summarize different authentication and digital signature schemes. Implement hash and digital signature techniques.
	CO5	Identify security issues in network, transport and application layers and network security applications of Email security, Web security and IP security (PGP, S/MIME, SSL, IP Security, etc.)
	CO6	Evaluate the role played by various security mechanisms like passwords, access control mechanisms, firewalls etc.
Software Designer Tools Lab L417	CO1	Demonstrate proficiency in using HFSS software for electromagnetic simulation and analysis.
	CO2	Design and optimize antennas for specific frequency bands and radiation patterns.

	CO3	Design and implement various types of microwave devices using HFSS software
	CO4	Design and implement combinational circuits using mentor graphics
	CO5	Design and implement sequential circuits using mentor graphics
	CO6	Apply the concept of design rules for layouts