DADI INSTITUTE OF ENGINEERING &TECHNOLOGY

An Autonomous Institute

Approved by AICTE & Permanently affiliated to JNTU GV

Accredited by NAAC with 'A' Grade and Inclusion u/s 2(f) & 12(B) of UGC Act

An ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018 Certified Institute.

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II-I (Odd Sem) COURSE OUTCOMES

Signal & Systems	CO1: To study about signals and systems.
	CO2: To analyse the spectral characteristics of signal using Fourier series and Fourier transforms.
	CO3: To understand the characteristics of systems. To understand the characteristics of systems.
	CO4: To introduce the concept of sampling process
	CO5: To know various transform techniques (Laplace and z) to analyse the signals and systems.

Electronic Devices & Circuits	CO1: Understand the formation of p-n junction and how it can be used as a p-n junction as diode in different modes of operation
	CO2: Know the construction, working principle of rectifiers with and without filters with relevant expressions and necessary comparisons
	CO3: Understand the construction, principle of operation of transistors, BJT and FET with their V-I characteristics in different configurations
	CO4: Know the need of transistor biasing, various biasing techniques for BJT and FET and stabilization concepts with necessary expressions
	CO5: Perform the analysis of small signal low frequency transistor amplifier circuits using BJT and FET in different configurations

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Switching Theory & Logic Design	CO1: Classify different number systems and apply to generate various codes
	CO2: Use the concept of Boolean algebra in minimization of switching functions
	CO3: Design different types of combinational logic circuits.
	CO4: Apply knowledge of flip-flops in designing of Registers and counters
	CO5: The operation and design methodology for synchronous sequential circuits and algorithmic state machines

Random Variables & Stochastic Processes	CO1: Identify different types of random variables, distributions and their applications.
	CO2: Understand the computation of the statistical averages of one random variable.
	CO3: Apply the concepts of Multiple random variables to determine the statistical averages
	CO4: Analyse the random processes in the time domain
	CO5: Analyse the random processes in the frequency domain and analyse the LTI systems with random inputs.

III-I (Odd Sem) COURSE OUTCOMES

Analaog IC Applications	CO1: Analyse the Characteristics of OPAMP
	CO2: Analyse and Design of linear and nonlinear applications of OPAMP
	CO3: Analyse and Design of Active filters
	CO4: Analyse and Design of Multivibrators using 555 timer and applications of PLL
	CO4: Classify and comprehend the working principle of Data converters
Electromagnetic Waves &	CO1: Determine E and H using various laws and applications of electric & magnetic fields

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Transmission Lines	CO2: Apply the Maxwell equations to analyse the time varying behaviour of EM waves
	CO3: Gain the knowledge in uniform plane wave concept and characteristics of uniform plane wave in various media
	CO4: Gain the knowledge in uniform plane wave concept and characteristics of uniform plane wave in various media
	CO5: Derive and Calculate the expressions for input impedance of transmission lines, reflection coefficient, VSWR etc. using smith chart
Digital Communications	CO1: Understand the basic concept of digital communication system.
	CO2: Demonstrate the different modulation and detection methods of different digital modulation techniques
	CO3: Analyse the performance of a Digital Communication System for probability of error
	CO4: Understand the concept of entropy and its types and mutual information.
	CO5: Describe the different channel coding techniques
Computer Architecture & Organization	CO1: Students can understand the architecture of modern computer.
	CO2: They can analyse the Performance of a computer using performance equation
	CO3: Understanding of different instruction types.
	CO4: Students can calculate the effective address of an operand by addressing modes
	CO5: They can understand how computer stores positive and negative numbers.
	CO6: Understand the concepts of I/O Organization and Memory systems.
Digital Signal Processing	CO1: Apply the difference equations concept in the analysis of Discrete time systems
	CO2: Use the FFT algorithm for solving the DFT of a given signal
	CO3: Design a Digital filter (FIR&IIR) from the given specifications
	CO4: Realize the FIR and IIR structures from the designed digital filter.
	CO5: Realize the FIR and IIR structures from the designed digital filter.

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Operating Systems	CO1: Describe Computer Operating System Functions, Structures and System Calls
	CO2: Demonstrate various Process Management Concepts and CPU Scheduling Algorithms and Process Synchronization Techniques
	CO3: Illustrate Memory Management Techniques and Page Replacement Algorithms.
	CO4: Apply Deadlock Prevention and Avoidance Techniques
	CO5: Demonstrate File System Concepts and Mass Storage Structures

Optical Communication	CO1: Choose necessary components required in modern optical communications systems .
	CO2: Design and build optical fibre experiments in the laboratory, and learn how to calculate electromagnetic modes in waveguides, the amount of light lost going through an optical system, dispersion of optical fibres.
	CO3: Use different types of photo detectors and optical test equipment to analyse optical fibre and light wave systems.
	CO4: Choose the optical cables for better communication with minimum losses
	CO5: Design, build, and demonstrate optical fibre experiments in the laboratory

Internet of Things	CO1: Understand IoT Architecture and Design Principles: Gain knowledge of IoT architectural overview, design principles, networking basics, and the role of cloud and security aspects in IoT.
	CO2: Develop an understanding of various IoT hardware components such as Arduino, Raspberry Pi, and ARM Cortex processors, including their architecture and instruction sets.
	CO3: Acquire skills in IoT application development using communication protocols (MQTT, ZigBee, CoAP) and software programming APIs with languages like Python, Node.js, and Arduino.
	CO4: Learn to integrate devices, acquire and manage data, store device data on cloud/local servers,

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	and implement device authentication and authorization.
	CO5: Apply IoT concepts to real-world applications in industrial automation, transportation, agriculture, healthcare, and home automation, while understanding the challenges of cloud integration with IoT.

R & GIS	CO1: Be familiar with ground, air and satellite based sensor platforms.
	CO2: Interpret the aerial photographs and satellite imageries
	CO3: Create and input spatial data for GIS application
	CO4: Apply RS and GIS concepts in water resources engineering
	CO5: Applications of various GIS

OOPS through Java Lab	CO1: Identify classes, objects, members of a class and the relationship among them needed for a specific problem
	CO2: Implement programs to distinguish different forms of inheritance
	CO3: Create packages and to reuse them
	CO4: Develop programs using Exception Handling mechanism
	CO5: Develop multithreaded application using synchronization concept.
	CO6: Design GUI based applications using Swings and AWT.
Electronic Devices & Circuits -Lab	CO1: Understand the Diode, Zener Diode and Transistor, SCR, UJT characteristics.
	CO2: Verify the rectifier circuits using diodes and implement them using hardware.
	CO3: Design various amplifiers like CE, CC, common source amplifiers and implement them using hardware and also observe their frequency responses
	CO4: Design the biasing circuits like self biasing.
	CO5: Understand the construction, operation and characteristics of JFET and MOSFET, which can

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	be used in the design of amplifiers
Switching Theory & Logic Design– Lab	CO1: Describe and explain the operation of fundamental digital gates
	CO2: Analyse the operation of medium complexity standard combinational circuits like the encoder, decoder, multiplexer, demultiplexer and adder.
	CO3: Analyse the operation of a flip-flop and examine relevant timing diagrams
	CO4: Analyse the operation of counters and shift registers
	CO5: Design operate practical digital logic circuits
Python Programming	CO1: Know comprehensions, generators in python.
	CO2: Know exception handling in python
	CO3: Know file I/O
	CO4: Understand various data types like lists, tuples, strings etc
	CO5: Know the usage of various pre-defined functions on the above data types
III-I Sem (R20) Course outcomes	
Analog ICs & Applications LAB	CO1: Students will have a thorough understanding of operational amplifier(741)
	CO2: Design circuits using operational amplifiers for various applications.
	CO3: Design and analyse various Active Butterworth Filters
	CO4: Design and analyse various wave shaping circuits
	CO5: Design the applications using PLL
Digital Communications Lab	CO1: Understand and implement digital modulation techniques
	CO2: Apply error detection and correction codes for reliable communication
	CO3: Explore multiplexing techniques to improve bandwidth utilization
	CO4: Understand and implement source encoding and compounding techniques

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	CO5: Analyse and compare digital signal processing techniques in communication systems
	CO6: Ability to select the data structures that efficiently model the information in a problem
	CO7: Ability to assess efficiency trade-offs among different data structure implementations or combinations.
	CO8: Implement and know the application of algorithms for sorting and pattern matching
	CO9: Design programs using a variety of data structures, including hash tables, binary and general tree structures, search trees, tries, heaps, graphs, and B-trees.
	CO10: Design and analysis of text processing algorithms

Electronic Circuit Analysis Lab	CO1: Design and analyze the basic operations of MOSFET
	CO2: Know about the multistage amplifier using BJT in various configuration to determine frequency response and concept of voltage gain
	CO3: Know about different power amplifier circuits, their design and use in electronics and communication circuits.
	CO4: Know the concept of feedback amplifier and their characteristics
	CO5: Design the different oscillator circuits for various frequencies
Analog Communications Lab	CO1: Able to identify and describe different analog modulation techniques.
	CO2: Able to analyze AM radio receiver
	CO3: Able to use the any AM techniques in MATLAB simulink
Digital IC Design Lab	CO1: Understand the structure of commercially available digital integrated circuit families.
	CO2: Learn the IEEE Standard 1076 Hardware Description Language (VHDL).
	CO3: Model complex digital systems at several levels of abstractions, behavioural, structural, simulation, synthesis and rapid system prototyping.

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	CO4: Analyze and design basic digital circuits with combinatorial logic circuits using VHDL.
	CO5: Analyze and design basic digital circuits with sequential logic circuits using VHDL.
	CO1: Use language fluently, accurately and appropriately in debates and group discussions
	CO2: Use their skills of listening comprehension to communicate effectively in cross-cultural contexts.
	CO3: Learn and use new vocabulary.
	CO4: Write resumes, project reports and reviews.
Soft Skills	CO5: Exhibit interview skills and develop soft skills
III-II SEM (R20)	
Microprocessor & Microcontrollers - Lab	CO1: Demonstrate proficiency in 8086 assembly language programming
	CO2: Develop and implement interfacing techniques for 8086 microprocessor
	CO3: Apply 8051 microcontroller for solving real-time embedded problems
	CO4: Understand and verify the use of timers, counters, and UART operations in 8051
	CO5: Develop ARM Cortex M3-based embedded solutions using assembly and C programming
VLSI Design Lab	CO1: Understand the physical design of digital integrated circuits
	CO2: Describe procedure for designing of programmable circuits
	CO3: Demonstrate the ability to use various EDA tool for digital system design
	CO4: Implement various combinational and sequential circuits using VHDL on FPGA.
	CO5: To analyze the result of logic and timing simulations and to use these simulation results to debug digital system.
Digital IC Design Lab	CO1: Design and draw the internal logical structure of the logic gates, combinational circuits, sequential circuits Digital Integrated Circuits
	CO2: To develop VHDL/Verilog HDL Source code,

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	CO3: Perform simulation using relevant simulator and analyze the obtained simulation results using necessary synthesize
	CO4: Able to verify and implement the logical operations on the latest FPGA Hardware
	CO5: Design register Fast In & Fast Out (FIFO) , MAC (Multiplier &Accumulator), ALU
Digital Signal Processing Lab	CO1: Understand the concepts of Linear Convolution and Circular Convolution concepts using MATLAB
	CO2: Explore the concepts of Computation of Discrete Fourier Transform(DFT) and Inverse Discrete Fourier Transform (IDFT)
	CO3: Develop the design procedures for FIR Filters
	CO4: Develop the design procedures for IIR Filters
	CO5: Analyze transfer function stability pole-zero plot, bode Plot and Nyquist plot.
ARM based/ Aurdino based Programming	CO1: Comprehend Microcontroller-Transducers Interface techniques
	CO2: Establish Serial Communication link with Arduino
	CO3: Analyze basics of SPI interface.
	CO4: Interface Stepper Motor with Arduino
	CO5: Analyze Accelerometer interface techniques

Dr. R Vaikunta Rao
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