



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governerpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2576129.

Department of Electronics and Communication Engineering

Program: M. Tech – VLSI

Academic Year: 2024 – 2025

Course Code	Course Name	CO No	CO Description
23VL5202	ALGORITHMS FOR VLSI DESIGN AUTOMATION	1	Apply the Algorithmic Graph Theory for the shortest path identification of the graph.
		2	Apply and analyze Placement, Floor planning and Routing with suitable algorithms
		3	Apply and realize the Physical Design cycle for FPGA's partitioning and routing for segmented and staggered models
23VL5001	TRANSFORMATION TECHNIQUES, RANDOM VARIABLES & STOCHASTIC PROCESSES	1	Apply Mathematical models of random phenomena and solve probabilistic problems.
		2	Analyze different types of random variables and compute statistical parameters of the random variables.
		3	Apply random processes in the time domain and model time varying linear systems.
		4	Analyze random processes in frequency domains and model spectral characteristics of LTI systems.
23VL5101	MOS CIRCUIT DESIGN	1	Apply basic concepts of VLSI design flow, Design styles, IC fabrication, layout design rules for CMOS circuits, and MOS transistor and circuit modeling.
		2	Explain and Analyze MOS static characteristics and interconnect effects.
		3	Demonstrate the design concepts of Combinational and Sequential MOS logic Circuits.
		4	Apply Combinational and Sequential MOS logic Circuits to build different Dynamic logic circuits
		5	Construct of Various CMOS Circuits using EDA Tools.
23VL5102	DIGITAL VLSI DESIGN	1	Understand and apply the Verilog HDL concepts for combinational logic.
		2	Understand and apply the Verilog HDL concepts for sequential logics
		3	Apply the synchronous design and ASM techniques in design of digital systems
		4	Analyze the reliability of digital systems by applying testing techniques
		5	Design of various digital systems by using EDA tools

DR. S. L. P.
Alternate HOD
Department of ECE
K L University
VADDESWARAM
Guntur Dt., A.P., India.

23VL5103	ANALOG IC DESIGN	1	Application of the MOS transistors for the design of single stage amplifiers.
		2	Analysis and design of active & passive current Mirrors and the differential amplifiers with qualitative and quantitative analysis.
		3	Analyze the CMOS Op Amps, and various types of Op Amps with qualitative and quantitative approaches.
		4	Analyze the high frequency response of CS, CG and CD amplifiers and noise analysis of various amplifiers and analysis of non-linear analog circuits like switched capacitor circuits, PLL, ADC and DAC.
		5	Design and analysis of various MOS analog circuits using Cadence/ LT-SPICE environment for real time applications.
23EC5101	ARTIFICIAL INTELLIGENCE & MACHINE LEARNING	1	Apply the possibilities offered by AI in finding solutions to domain-independent engineering problems and examine the fundamental blocks for building AI-based computer searches.
		2	Analyze machine learning approaches for clustering and classification by demonstrating architecture formulations, learning algorithms, and performance measurements.
		3	Analyze and reconfigure the dimensionality of datasets for training and interpret numerically.
		4	Apply optimization algorithms and estimate unknown phenomena.
		5	Experiment and design AI models on multiple datasets by providing discriminative analysis of the evaluation metrics.
23IE5201	ESSENTIALS OF RESEARCH DESIGN	1	Analyze the steps involved in research and articulate appropriate Research Questions
		2	Analyze appropriate methods for Data collection
		3	Apply the data in tabular/Graphical form and prepare data for analysis
		4	Analyze statistical modelling to optimize the data, prepare the data for publishing.
23UC5201	PROFESSIONAL COMMUNICATION SKILLS	1	To develop the skill of contextual Vocabulary and Critical Reading
		2	To demonstrate different types of personal and professional skills and apply them for growth in professional zone.
		3	Apply the concepts of Mathematical Principles to solve problems on Arithmetic , Algebra & Geometry to improve problem solving ability.
		4	Apply the concepts and using Logical thinking to solve problems on verbal & Non-Verbal Reasoning to develop Logical thinking skills.
23VL5204	LOW POWER VLSI SYSTEM DESIGN	1	Understand the physics of power in CMOS circuits
		2	Apply low power techniques at circuit level for CMOS circuits
		3	Apply low power techniques at gate level, architecture level and system levels

Alternate HOD
Department of ECE
K L University
VADDESWARAM
Guntur Dt., A.P., India.

			2	Apply VLSI Chip Design and Simulation with Electric VLSI EDA Tool
			3	Design of Digital Circuits with VHDL Programming
			4	Design FPGA Architecture-Based System for Industrial Application
23IE6150	DISSERTATION		1	Identify and articulate research problems within their field of study, demonstrating an understanding of current research gaps.


 Dr. M. S. S. P.
 Alternate HOD
 Department of ECE
K L University
 VADDESWARAM
 Guntur Dt., A.P., India.

STUDY MATERIALS

FOOTER

STUDY MATERIALS

FOOTER

STUDY MATERIALS

FOOTER