



MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Digital System Design with FPGAs
Course Code: 2215503
Course Coordinator : DR K NAVEEN KUMAR

Year / Sem : I-I
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain the architecture and function of programmable logic devices used in digital system design.	3.00	3.00	3.00	2.10	Attained
2	Analyze clocked sequential circuits through state graphs, tables, and timing charts.	2.60	3.00	2.68	2.10	Attained
3	Design sequential circuits and finite state machines for digital system applications.	3.00	2.00	2.80	2.10	Attained
4	Apply fault models and test pattern generation techniques for diagnosing digital circuits.	1.20	3.00	1.56	2.10	Not Attained
5	Evaluate fault detection approaches and state identification techniques for sequential circuits.	2.60	3.00	2.68	2.10	Attained
			Final CO	2.54	2.10	Attained

Action Taken: 1. Conducted combined sessions on design, analysis, and problem-solving to strengthen understanding of programmable logic devices and sequential circuits. 2. Additional classes, fault diagnosis practice sessions, and test pattern generation exercises will be conducted to improve understanding and achieve the target attainment.


Faculty


Course Coordinator


Department Head
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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : System Design with Embedded Linux
Course Code: 2215504
Course Coordinator : DR. I. ADUM BABU


Year / Sem : I-I
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain the fundamentals of real-time operating systems, scheduling, and synchronization in embedded environments.	3.00	3.00	3.00	2.10	Attained
2	Describe the architecture and key components of Embedded Linux systems.	3.00	2.00	2.80	2.10	Attained
3	Apply concepts of embedded storage and device driver architectures for development and management of embedded system components.	3.00	3.00	3.00	2.10	Attained
4	Implement programming and porting of real-time applications on Linux.	2.40	3.00	2.52	2.10	Attained
5	Construct a working embedded Linux system with custom bootloader and kernel configurations.	3.00	3.00	3.00	2.10	Attained
		Final CO		2.86	2.10	Attained

Action Taken: 1. Advanced problem-solving, concept revision, case studies, and practical demonstrations were conducted to strengthen understanding and subject clarity. 2. Additional programming sessions and guided practice on real-time Linux application development were conducted, resulting in improved learning outcomes and attainment.


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Course Coordinator


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Wireless Sensor Networks
Course Code: 2215509
Course Coordinator : PALAVANCHA SANDHYA


Year / Sem : I-I
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain the unique constraints, advantages, applications, and types of wireless sensor networks.	3.00	3.00	3.00	2.10	Attained
2	Apply enabling technologies for addressing challenges in mobile ad-hoc and wireless sensor networks.	3.00	3.00	3.00	2.10	Attained
3	Analyze various MAC protocols and their role in ZigBee communication.	2.60	3.00	2.68	2.10	Attained
4	Evaluate data dissemination, gathering, fusion techniques, and security protocols in large sensor networks.	3.00	3.00	3.00	2.10	Attained
5	Design wireless sensor networks and integrate them with internet gateways, TinyOS, and nesC.	2.60	2.00	2.48	2.10	Attained
		Final CO		2.83	2.10	Attained

Action Taken: 1. Conceptual discussions, real-time examples, and assignments were conducted to improve understanding of wireless sensor and mobile ad-hoc networks. 2. Focused sessions and practical exercises were conducted to enhance analytical and design skills in wireless sensor networks.


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Course Coordinator


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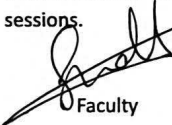
CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : CMOS Analog IC Design (PE-II)
Course Code: 2215512
Course Coordinator : Dr. P SUDHAKAR REDDY

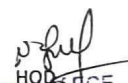
Year / Sem : I-I
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Understand the MOS transistor characteristics and modeling techniques for integrated circuits.	3.00	3.00	3.00	2.10	Attained
2	Apply principles of analog CMOS sub-circuits for current mirrors and voltage reference circuits.	2.60	2.00	2.48	2.10	Attained
3	Analyze the performance of various CMOS amplifier architectures.	3.00	3.00	3.00	2.10	Attained
4	Design two-stage CMOS operational amplifiers with appropriate compensation.	2.60	3.00	2.68	2.10	Attained
5	Evaluate the characteristics and performance enhancement techniques of open-loop and discrete-time comparators.	2.60	3.00	2.68	2.10	Attained
		Final CO		2.77	2.10	Attained

Action Taken: 1. Advanced concepts of MOS transistor modeling, analog CMOS sub-circuits and amplifier performance were practiced through assignments. 2. Additional focus was given to two-stage CMOS op-amp design, compensation techniques, and comparator performance through extra discussions and practice sessions.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Digital System Design with FPGAs Lab
Course Code: 2215521
Course Coordinator : DR K NAVEEN KUMAR


Year / Sem : I-I
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain HDL design flow, modeling styles, and fundamental logic gate realization.	3.00	3.00	3.00	2.10	Attained
2	Implement combinational circuits using Verilog HDL.	3.00	3.00	3.00	2.10	Attained
3	Examine sequential designs for timing and functional correctness.	3.00	3.00	3.00	2.10	Attained
4	Evaluate arithmetic unit multipliers, dividers, and ALU operations for performance and resource utilization.	3.00	2.00	2.80	2.10	Attained
5	Develop and test complete digital subsystems on FPGA hardware integrating combinational and sequential modules.	3.00	2.00	2.80	2.10	Attained
Final CO				2.92	2.10	Attained

Action Taken: 1. Advanced HDL design concepts, Verilog-based combinational and sequential circuit design, and timing analysis were strengthened through practice, simulations, and discussions. 2. Additional focus was given to complex modules (multipliers, dividers, ALU) and FPGA-based subsystem design through problem-solving sessions and hands-on lab work.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: System Design with Embedded Linux Lab
Course Code: 2215522
Course Coordinator : DR. I. ADUM BABU

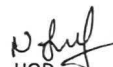
Year / Sem : I-I
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Understand the process of OS flashing, device configuration, and display export using SSH/X11 for embedded boards.	3.00	2.00	2.80	2.10	Attained
2	Implement GPIO programming and interface peripherals for real-time control and sensing.	3.00	3.00	3.00	2.10	Attained
3	Examine sensor data and communication links designing control and display applications.	3.00	2.00	2.80	2.10	Attained
4	Evaluate networking and multimedia capabilities using OpenWrt deployment, web hosting, webcam streaming, and RSS feed display.	3.00	3.00	3.00	2.10	Attained
5	Design embedded solutions with FM transmission and multi-service operation.	3.00	2.00	2.80	2.10	Attained
		Final CO		2.88	2.10	Attained

Action Taken: 1. Embedded system setup, GPIO interfacing, sensor data handling, and communication design were strengthened through hands-on practice sessions. 2. Additional focus was given to networking, multimedia applications, and integrated system design through practical exercises and planned sessions.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Research Methodology & IPR
Course Code: 2215502
Course Coordinator : DR. AMARNATH GAINI

Year / Sem : I-I
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Describe the meaning, sources, and key characteristics of a good research problem and common errors in its selection.	3.00	2.00	2.80	2.10	Attained
2	Conduct a comprehensive literature review and demonstrate ethical standards in research for the avoidance of plagiarism.	1.80	3.00	2.04	2.10	Attained
3	Write structured research reports and proposals effectively and present research ideas before review panels.	3.00	3.00	3.00	2.10	Attained
4	Explain forms of intellectual property with national, international patenting and IPR procedures.	1.20	3.00	1.56	2.10	Not Attained
5	Analyze the scope and rights associated with patents, and explore recent trends in IPR across domains like biotechnology, software, and traditional knowledge.	1.20	3.00	1.56	2.10	Not Attained
			Final CO	2.19	2.10	Attained

Action Taken: 1. Research skills were strengthened through sessions on problem identification, ethical literature review, and improved report writing and proposal presentation practice. 2. Additional sessions on IPR concepts, patent filing procedures, rights, scope, and recent trends will be conducted through case studies and practice sessions to improve understanding and attainment.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: English for Research Paper Writing Audit Course-I
Course Code: 2210001
Course Coordinator : DR. NALLAGONDA SRINIVAS


Year / Sem : I-I
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Describe effective writing skills for planning, sentence structuring, clarity, and conciseness.	3.00	3.00	3.00	2.10	Attained
2	Explain methods of academic writing for presenting results, paraphrasing, avoiding plagiarism, and organizing abstracts and introductions.	3.00	3.00	3.00	2.10	Attained
3	Write a research paper using principles of literature review, methods, results, discussion, conclusions, and final checks.	3.00	2.00	2.80	2.10	Attained
4	Provide constructive feedback on draft titles, abstracts, introductions, and literature reviews for clarity and impact.	3.00	1.00	2.60	2.10	Attained
5	Evaluate draft manuscripts for coherence, logical flow, and readiness for journal submission.	3.00	3.00	3.00	2.10	Attained
		Final CO		2.88	2.10	Attained

Action Taken: 1. Writing skills were improved through practice on sentence structure, clarity, conciseness, paraphrasing, and plagiarism-free academic writing.
2. Research paper and manuscript preparation skills were strengthened through activities on literature review, methodology, results, and draft evaluation for better coherence and publication readiness.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: ARM Microcontrollers
Course Code: 2225505
Course Coordinator : DR. I. ADUM BABU


Year / Sem : I-II
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Understand ARM processor architecture, registers, memory, and interrupt handling for embedded systems.	3.00	3.00	3.00	2.10	Attained
2	Apply ARM and Thumb instruction sets in developing efficient embedded programs.	1.80	3.00	2.04	2.10	Attained
3	Analyze architecture, memory, and interrupts of Cortex-M3 and M4 processors.	3.00	3.00	3.00	2.10	Attained
4	Assess performance of DSP applications on Cortex-M4 using the FPU and register configurations.	3.00	2.00	2.80	2.10	Attained
5	Evaluate floating-point and DSP operations on Cortex-M4 for optimized signal processing.	2.40	3.00	2.52	2.10	Attained
		Final CO		2.67	2.10	Attained

Action Taken: 1. Understanding of ARM architecture (registers, memory, interrupts) and instruction sets (ARM/Thumb) was strengthened through problem-solving, case studies, and practice exercises. 2. Additional focus was given to Cortex-M3/M4, DSP applications, FPU usage, and optimization techniques through demonstrations, assignments, and planned training sessions.


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CO ATTAINMENT ACTION TAKEN REPORT

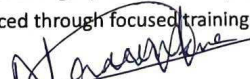
Program : M.Tech.
Course Name: Digital Control Systems
Course Code: 2225506
Course Coordinator : DR K NAVEEN KUMAR


Year / Sem : I-II
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Understand modeling of discrete-time systems using Z-transforms and state-space techniques.	3.00	3.00	3.00	2.10	Attained
2	Analyze steady-state errors, behavior and response of discrete-time systems	1.80	3.00	2.04	2.10	Attained
3	Evaluate the stability of digital control systems using Jury's test, bilinear transformation, and Lyapunov methods.	3.00	2.00	2.80	2.10	Attained
4	Design digital controllers using PID structures, bilinear transformation, and dead-beat response.	2.40	3.00	2.52	2.10	Attained
5	Design state feedback controllers and observers for discrete-time systems with performance requirements.	3.00	3.00	3.00	2.10	Attained
		Final CO		2.67	2.10	Attained

Action Taken: 1. Analytical understanding of Z-transforms, state-space modeling, system response, and stability analysis was strengthened through problem-solving and tutorials. 2. Application skills in controller design were enhanced through focused training and design-oriented exercises.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: IoT Architectures and System Design (Program Elective-III)
Course Code: 2225513
Course Coordinator : PALAVANCHA SANDHYA

Year / Sem : I-II
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Use IoT concepts and enabling technologies for real world applications.	3.00	3.00	3.00	2.10	Attained
2	Differentiate between IoT and M2M concepts for value chains in the global industrial context.	3.00	3.00	3.00	2.10	Attained
3	Develop simple IoT applications using Arduino and Raspberry Pi by integrating sensors and actuators.	3.00	3.00	3.00	2.10	Attained
4	Examine different IoT architectures and evaluate the core functional and data management stacks.	3.00	3.00	3.00	2.10	Attained
5	Design IoT-based solutions for agriculture, healthcare, smart cities, and transportation	2.40	3.00	2.52	2.10	Attained
		Final CO		2.90	2.10	Attained

Action Taken: 1. IoT fundamentals, architectures, and industry concepts (including M2M) were strengthened through tutorials, case studies, and problem-solving sessions. 2. Skills in sensor/actuator interfacing and IoT system design were improved through practical sessions

Sandhya
Faculty

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.

Course Name: Hardware and Software Co-Design (Program Elective-IV)

Course Code: 2225516

Course Coordinator : Mrs. NAGAJYOTHI

Year / Sem : I-II

Academic Year : 2023-2024

Regulation: MLRS-R22


Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Discuss co-design models and algorithms for efficient hardware-software partitioning and distributed system co-synthesis.	3.00	2.00	2.80	2.10	Attained
2	Apply prototyping and emulation on specialized architectures with system communication understanding.	3.00	3.00	3.00	2.10	Attained
3	Optimize embedded software for memory efficiency, real-time responsiveness, and energy conservation.	3.00	3.00	3.00	2.10	Attained
4	Design embedded systems with co-design and interface validation for robust performance.	3.00	3.00	3.00	2.10	Attained
5	Model heterogeneous embedded systems with system-level languages and co-simulation tools for efficient integration.	3.00	3.00	3.00	2.10	Attained
		Final CO		2.96	2.10	Attained

Action Taken: 1. Concepts of hardware-software partitioning, co-synthesis, system-level modeling, and embedded system design were strengthened through examples and demonstrations. 2. Understanding of optimization techniques, system communication, prototyping, and interface validation was improved through application-based exercises and design-oriented assignments.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: ARM Microcontrollers Lab
Course Code: 2225523
Course Coordinator : DR. I. ADUM BABU


Year / Sem : I-II
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Design and implement fundamental embedded applications using Cortex-M3 development platforms.	3.00	3.00	3.00	2.10	Attained
2	Interface with and control I/O devices using techniques such as polling, interrupts, and PWM.	3.00	3.00	3.00	2.10	Attained
3	Develop real-time applications using analog-to-digital converters (ADCs), sensors, and communication interfaces.	3.00	3.00	3.00	2.10	Attained
4	Analyze system performance using timers, sleep modes, and watchdog timers.	3.00	3.00	3.00	2.10	Attained
5	Employ open-source development tools for building, debugging, and testing embedded software applications.	3.00	3.00	3.00	2.10	Attained
		Final CO		3.00	2.10	Attained

Action Taken: 1. Embedded system fundamentals on Cortex-M3, including I/O interfacing and real-time applications, were strengthened through implementation and experiments. 2. System performance concepts (timers, sleep modes, watchdog) and use of open-source tools for development, debugging, and testing were enhanced through practical examples.


Faculty


Course Coordinator


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Digital Control System Lab
Course Code: 2225524
Course Coordinator : DR K NAVEEN KUMAR


Year / Sem : I-II
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Generate PWM and sine PWM signals for controlling AC and DC drives.	3.00	3.00	3.00	2.10	Attained
2	Monitor three-phase voltage and current using A/D converters for real-time analysis.	3.00	3.00	3.00	2.10	Attained
3	Analyze AC motor speed and performance under various control strategies.	3.00	3.00	3.00	2.10	Attained
4	Control AC motors using UFD techniques and DC motors using DC drives.	3.00	3.00	3.00	2.10	Attained
5	Evaluate inverter output voltage and motor control efficiency under different operating conditions.	3.00	3.00	3.00	2.10	Attained
		Final CO		3.00	2.10	Attained

Action Taken: 1. PWM/sine PWM techniques, three-phase monitoring, inverter analysis, and motor control methods were explained through examples and experiments. 2. Understanding of motor speed control strategies and efficiency evaluation was strengthened through practical applications and numerical analysis.


Faculty


Course Coordinator


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Pedagogy Studies (Audit Course-II)
Course Code: 2220006
Course Coordinator : DR. NALLAGONDA SRINIVAS


Year / Sem : I-II
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain key concepts related to curriculum, teacher education, and learning theories.	3.00	3.00	3.00	2.10	Attained
2	Outline various pedagogical practices used by teachers in formal and informal classrooms in developing countries.	3.00	3.00	3.00	2.10	Attained
3	Analyze the strengths of evidence supporting effective pedagogical strategies and teacher attitudes impacting classroom learning.	3.00	3.00	3.00	2.10	Attained
4	Assess the alignment of professional development programs with classroom practices, including barriers such as resources and class size.	3.00	3.00	3.00	2.10	Attained
5	Apply knowledge of research design and pedagogy to identify future directions and gaps in teacher education and curriculum research.	3.00	3.00	3.00	2.10	Attained
		Final CO		3.00	2.10	Attained

Action Taken: 1. Understanding of curriculum, learning theories, and pedagogical practices was strengthened through discussions, case studies, and concept-based teaching methods. 2. Critical thinking, research skills, and alignment of teaching practices were enhanced through evidence-based strategies, workshops, observations, and project work.


Faculty


Course Coordinator


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Mini Project with Seminar
Course Code: 2225525
Course Coordinator : DR.ASHOK NAYAK BANOTH

Year / Sem : I-II
Academic Year : 2023-2024
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Apply embedded systems engineering principles for identifying and formulating a small-scale technical problem	3.00	3.00	3.00	2.10	Attained
2	Analyze existing literature and tools, selecting appropriate methodologies for the mini-project	3.00	3.00	3.00	2.10	Attained
3	Design and develop a functional prototype using modern tools and techniques	3.00	2.00	2.80	2.10	Attained
4	Evaluate the performance and societal impact of the mini-project outcomes regarding sustainability and ethical practices	3.00	3.00	3.00	2.10	Attained
5	Prepare and deliver an effective seminar demonstrating technical findings and Program presentation skills	3.00	3.00	3.00	2.10	Attained
		Final CO		2.96	2.10	Attained

Action Taken: 1. Embedded systems principles, problem identification, literature review, and tool selection were strengthened through discussions and examples.
2. Prototype development, performance evaluation, sustainability, and communication skills were enhanced through project work, seminars, and report presentations.

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Embedded Networks (Program Elective-V)
Course Code: 2235519
Course Coordinator : Mrs. NAGAJYOTHI

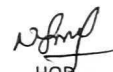
Year / Sem : II-I
Academic Year : 2024-2025
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Describe serial and parallel communication protocols used in embedded networking systems.	3.00	3.00	3.00	2.10	Attained
2	Implement USB and CAN bus communication with microcontrollers.	3.00	3.00	3.00	2.10	Attained
3	Assess Ethernet architecture, components, and communication protocols for network design.	2.40	3.00	2.52	2.10	Attained
4	Design embedded Ethernet communication with TCP/UDP, web services, and security.	3.00	3.00	3.00	2.10	Attained
5	Analyze wireless sensor networks, focusing on topology, localization, synchronization, MAC protocols, and energy-efficient routing.	3.00	3.00	3.00	2.10	Attained
		Final CO		2.90	2.10	Attained

Action Taken: 1. Communication protocols and networking concepts were strengthened through demonstrations, examples, and discussions. 2. Understanding of embedded communication, wireless sensor networks, and related protocols was improved through experiments, problem-solving, and additional practice sessions.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Fault Tolerance Systems (Open Elective)
Course Code: 2235846
Course Coordinator : DR T S SRINIVAS


Year / Sem : II-I
Academic Year : 2024-2025
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain the fundamental concepts of fault-tolerant computing, covering the types of faults, fault/error modeling, and the principles of reliability, availability, and maintainability	2.60	3.00	2.68	2.10	Attained
2	Apply hardware and software redundancy techniques and fault-tolerant design methods in mobile computing and communication environments.	3.00	3.00	3.00	2.10	Attained
3	Design and test defect-free integrated circuits using fault modeling, built-in self-test, data compression, and error-correcting codes	2.60	3.00	2.68	2.10	Attained
4	Analyze and apply time-redundancy and re-execution strategies in SMT/CMP architectures and data replication methods for fault-tolerant distributed computing.	1.00	3.00	1.40	2.10	Not Attained
5	Critically evaluate case studies and current research issues for identifying challenges and future directions in fault-tolerant computing.	2.60	3.00	2.68	2.10	Attained
		Final CO		2.49	2.10	Attained

Action Taken: 1. Fault-tolerant computing concepts, design techniques, and testing methods were strengthened through lectures, practical examples, case studies, and analytical discussions. 2. Additional focused sessions will be conducted on time-redundancy and re-execution techniques in SMT and CMP architectures using practical examples.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Dissertation Work Review-I
Course Code: 2235526
Course Coordinator : DR.ASHOK NAYAK BANOTH

Year / Sem : II-I
Academic Year : 2024-2025
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Identify a complex engineering/research problem relevant to embedded systems.	3.00	3.00	3.00	2.10	Attained
2	Conduct a critical literature review for analyzing gaps and justifying the research objectives	3.00	3.00	3.00	2.10	Attained
3	Develop a comprehensive research plan encompassing methodology, resources, and tools for execution	3.00	3.00	3.00	2.10	Attained
4	Assess ethical, sustainability, and societal considerations in planning the dissertation work	3.00	3.00	3.00	2.10	Attained
5	Present a well-structured synopsis demonstrating clarity of objectives, proposed approach, and expected outcomes	3.00	3.00	3.00	2.10	Attained
		Final CO		3.00	2.10	Attained

Action Taken: 1. Problem identification, literature review, research gap analysis, and research planning skills were strengthened through case studies, discussions, and guided activities. 2. Understanding of ethics, sustainability, and structured synopsis writing (objectives, methodology, outcomes) was improved through focused sessions and practice.

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Dissertation Work Review-II
Course Code: 2235527
Course Coordinator : DR. AMARNATH GAINI

Year / Sem : II-II
Academic Year : 2024-2025
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Implement the proposed methodology or system design using appropriate embedded system tools	3.00	3.00	3.00	2.10	Attained
2	Analyze experimental results for deriving meaningful insights and improvements	3.00	3.00	3.00	2.10	Attained
3	Validate results against objectives, comparing with state-of-the-art solutions and standards	3.00	3.00	3.00	2.10	Attained
4	Innovatively refine the design/methodology for enhancing performance or addressing identified gaps	3.00	3.00	3.00	2.10	Attained
5	Prepare a detailed draft dissertation demonstrating technical rigor, ethical compliance, and professional quality	3.00	3.00	3.00	2.10	Attained
		Final CO		3.00	2.10	Attained

Action Taken: 1. Embedded system design, analysis, validation, and optimization were carried out using FPGA, IoT tools, and simulation platforms to achieve improved performance and innovation. 2. Research documentation skills were strengthened through preparation of a detailed, accurate, and ethically compliant dissertation.

A. Gaini
Faculty

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name: Dissertation Viva-Voce
Course Code: 2235528
Course Coordinator : DR. RAPAKA PRABHAKAR

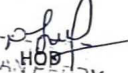
Year / Sem : II-II
Academic Year : 2024-2025
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Integrate all phases of dissertation work into a comprehensive, technically sound final report.	3.00	3.00	3.00	2.10	Attained
2	Critically analyze the dissertation outcomes regarding the original objectives and current industrial/research needs	3.00	3.00	3.00	2.10	Attained
3	Defend the work using evidence-based responses demonstrating depth of understanding and ethical considerations	3.00	2.00	2.80	2.10	Attained
4	Propose further improvements by highlighting innovation and lifelong learning	3.00	3.00	3.00	2.10	Attained
5	Deliver a professional oral presentation demonstrating confidence in answering questions from peers	3.00	3.00	3.00	2.10	Attained
		Final CO		2.96	2.10	Attained

Action Taken: 1. Dissertation integration, critical analysis, and evaluation skills were strengthened through continuous review, discussions, and outcome-based assessment. 2. Technical understanding, innovation, and presentation skills were enhanced through viva practice, research exposure, and mock seminars.

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