



MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
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CO ATTAINMENT ACTION TAKEN REPORT


Program :M.Tech.
Course Name : Microcontrollers & Programmable Digital Signal Processors
Course Code: 2015503
Course Coordinator : DR K NAVEEN KUMAR


Year / Sem : I-I
Academic Year : 2021-2022
Regulation: MLRS-R20
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain ARM Cortex-M3 architecture, instruction set, memory system, and interfaces for embedded applications	2.30	3.00	2.44	2.10	Attained
2	Apply ARM exception and interrupt mechanisms for responsive embedded systems	1.60	2.00	1.68	2.10	Not Attained
3	Evaluate LPC17xx microcontroller resources and peripheral configurations for optimal performance	2.30	3.00	2.44	2.10	Attained
4	Analyze the performance impact of multi-port memory, MAC unit, and barrel shifters in TI DSP processors	2.30	3.00	2.44	2.10	Attained
5	Design efficient DSP applications using VLIW-based architecture and advanced instruction-level programming	2.30	2.00	2.24	2.10	Attained
Final CO				2.25	2.10	

Action Taken:

1. Students demonstrate good understanding through conceptual explanations, practical applications, and analytical exercises, and these effective teaching-learning practices are being continued.
2. More practical demonstrations, additional lab sessions, and structured problem-solving exercises will be introduced to improve understanding of interrupt mechanisms and achieve the desired attainment level in future.


Faculty


Course Coordinator


Department of ECE
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V),Dundigal-Gandimamamma(M),
Mehendipalpet, Hyderabad



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : System Design with Embedded Linux
Course Code: 2015504
Course Coordinator : DR. I. ADUM BABU

Year / Sem : I-I
Academic Year : 2021-2022
Regulation: MLRS-R20
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.	2.30	2.00	2.24	2.10	Attained
2	Describe the architecture and key components of Embedded Linux systems.	2.30	3.00	2.44	2.10	Attained
3	Apply concepts of embedded storage and device driver architectures for development and management of embedded system components.	2.30	2.00	2.24	2.10	Attained
4	Implement programming and porting of real-time applications on Linux.	2.30	3.00	2.44	2.10	Attained
5	Construct a working embedded Linux system with custom bootloader and kernel configurations.	2.30	3.00	2.44	2.10	Attained
		Final CO		2.36	2.10	

Action Taken:

1. The effective implementation of teaching-learning strategies, continuous evaluation methods, and practical exposure through embedded Linux development ensured the achievement of desired competencies; hence, no corrective action was required.


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MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V),Dungigal-Gandmaisamma(M)
Medchal(D), Hyderabad - 500043,T.S



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Programming Languages for Embedded Software
Course Code: 2015507
Course Coordinator : DR.B.SRINIVAS

Year / Sem : I-I
Academic Year : 2021-2022
Regulation: MLRS-R20
Section : Embedded Systems


Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain Embedded C concepts on operations, memory management, data structures, interrupt handling, drivers, and development methods.	1.60	2.00	1.66	2.10	Not Attained
2	Demonstrate the creation and destruction of objects using constructors and destructors in practical applications.	1.60	3.00	1.88	2.10	Not Attained
3	Apply operator overloading and different inheritance techniques for reusable C++ programs.	1.60	2.00	1.68	2.10	Not Attained
4	Analyze program requirements and choose appropriate template designs and exception handling strategies.	0.90	3.00	1.32	2.10	Not Attained
5	Design complex scripts using PERL and other scripting languages integrating modules, threads, and inter-process communication.	1.60	3.00	1.88	2.10	Not Attained
		Final CO		1.68	2.10	

Action Taken:

1. Remedial classes and additional tutorial sessions will be conducted to strengthen students' understanding of Embedded C, C++ concepts, and scripting fundamentals.
2. Hands-on laboratory practice, assignment-based learning, and problem-solving sessions focusing on OOP concepts, templates, exception handling, and PERL scripting will be enhanced to improve CO attainment in subsequent offerings.


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CO ATTAINMENT ACTION TAKEN REPORT

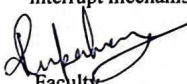
Program :M.Tech.
Course Name : Communications Buses & Interfaces
Course Code: 2015510
Course Coordinator : Mr. RUPA KUMAR DHANAVATH

Year / Sem : I-I
Academic Year : 2021-2022
Regulation: MLRS-R22
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Interpret features, signals, and applications of RS232, RS485, I2C, and SPI serial buses.	1.60	3.00	1.88	2.10	Not Attained
2	Apply knowledge of CAN architecture and protocols for data transmission and communication.	2.30	3.00	2.44	2.10	Attained
3	Analyze PCIe revisions, configuration space, hardware protocols, and their applications.	1.60	2.00	1.68	2.10	Not Attained
4	Investigate USB transfer types, enumeration steps, descriptor structures, and device driver function for reliable USB communication.	2.30	3.00	2.44	2.10	Attained
5	Evaluate Serial Front Panel Data Port concepts and signal traits on fiber and copper achieving high-speed, low-latency links.	1.60	2.00	1.68	2.10	Not Attained
Final CO				2.02	2.10	

Action Taken:

1. Students demonstrate good understanding through conceptual explanations, practical applications, and analytical exercises, and these effective teaching-learning practices are being continued.
2. More practical demonstrations, additional lab sessions, and structured problem-solving exercises will be introduced to improve understanding of interrupt mechanisms and achieve the desired attainment level in future.


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MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V),Dungigal-Gandmaisamma(M)
Medchal(D), Hyderabad - 500043, T.S



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.

Course Name : Microcontrollers & Programmable Digital Signal Processors Lab

Course Code: 2015521

Course Coordinator : DR K NAVEEN KUMAR

Year / Sem : I-I

Academic Year : 2021-2022

Regulation: MLRS-R20


Section : Embedded Systems


Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Apply timers, SysTick, and PLL modules for generating accurate software delays and manipulating system clock in embedded applications.	3.00	2.00	2.80	2.10	Attained
2	Implement PWM techniques in software and hardware controlling LED intensity in embedded systems.	3.00	2.00	2.80	2.10	Attained
3	Develop interrupt-driven and polling-based input handling for controlling outputs and executing logic operations in embedded systems.	3.00	3.00	3.00	2.10	Attained
4	Utilize UART communication and ADC interfaces acquiring and transmitting analog and digital data in embedded applications.	3.00	3.00	3.00	2.10	Attained
5	Design sensor-based embedded applications controlling and indicating environmental parameters such as temperature and light intensity.	3.00	3.00	3.00	2.10	Attained
Final CO				2.92	2.10	

Action Taken:

1. The current teaching-learning methods and assessment strategies will be continued as all Course Outcomes have been successfully attained above the target level of 2.10.
2. Additional advanced experiments, mini-projects, and real-time application-based learning activities will be introduced to further enhance student skills in embedded systems and sustain high CO attainment levels in future offerings.


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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : System Design with Embedded Linux Lab
Course Code: 2015522
Course Coordinator : DR. I. ADUM BABU

Year / Sem : I-I
Academic Year : 2021-2022
Regulation: MLRS-R20
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Develop programs for reading digital inputs from switches and controlling LEDs in embedded systems.	3.00	2.00	2.80	2.10	Attained
2	Implement serial communication between microcontroller and PC using RS232 for data transmission and reception.	3.00	2.00	2.80	2.10	Attained
3	Apply encryption and decryption techniques in microcontroller programs for secure data handling.	3.00	2.00	2.80	2.10	Attained
4	Design and interface sensor circuits with microcontrollers acquiring, processing, and displaying data on external devices.	3.00	3.00	3.00	2.10	Attained
5	Simulate and control real-time applications, sorting and elevator movement, using RTOs on 89CS1 boards.	3.00	2.00	3.00	2.10	Attained
				Final CO	2.88	2.10

Action Taken:

1. Innovative teaching strategies such as case-based learning, simulation tools, and peer-assisted learning will be incorporated to further strengthen conceptual understanding and maintain high CO attainment levels.
2. Continuous improvement will be ensured by introducing interdisciplinary mini-projects, industry-relevant problem statements, and periodic skill assessment activities to enhance practical competency in embedded system applications.


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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Research Methodology & IPR
Course Code: 2015502
Course Coordinator : DR. AMARNATH GAINI

Year / Sem : I-I
Academic Year : 2021-2022
Regulation: MLRS-R20
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.	2.30	3.00	2.44	2.10	Attained
2	Conduct a comprehensive literature review and demonstrate ethical standards in research for the avoidance of plagiarism.	1.60	2.00	1.68	2.10	Not Attained
3	Write structured research reports and proposals effectively and present research ideas before review panels.	2.30	3.00	2.44	2.10	Attained
4	Explain forms of intellectual property with national, international patenting and IPR procedures.	1.60	3.00	1.88	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.	1.60	3.00	1.88	2.10	Not Attained
Final CO				2.06	2.10	

Action Taken:

1. Targeted workshops on research methodology, literature review techniques, plagiarism awareness, and IPR concepts will be conducted to improve understanding in the identified weak COs.
2. Structured assignments, guided research activities, and expert sessions on patenting procedures and ethical research practices will be introduced to enhance student performance and achieve CO attainment in future offerings.

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MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V), Dundigal-Gandmaissamma(M)
Medchal(D), Hyderabad - 500080



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CO ATTAINMENT ACTION TAKEN REPORT

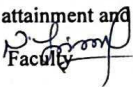
Program :M.Tech.
Course Name : English for Research Paper Writing and its significance
Course Code: 2015528
Course Coordinator : DR. NALLAGONDA SRINIVAS


Year / Sem : I-I
Academic Year : 2021-2022
Regulation: MLRS-R20
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	3.00	3.00	2.10	Attained
4	Improve the quality of Titles, Abstracts, Introductions, and Literature Reviews for clarity, relevance, and technical rigor.	3.00	3.00	3.00	2.10	Attained
5	Integrate best practices, effective phrasing, and data presentation techniques in original research writing.	3.00	3.00	3.00	2.10	Attained
Final CO				3.00	2.10	

Action Taken:

1. Enrichment activities such as advanced academic writing workshops, journal paper analysis, and peer-review exercises will be introduced to further elevate students' research writing proficiency.
2. Continuous monitoring through rubrics, publication-oriented assignments, and presentation-based evaluations will be implemented to sustain high CO attainment and promote quality research outputs in future offerings.


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Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V),Dungigal-Gandmaisamma(M)
Medchal(D), Hyderabad - 500043



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : RTL Simulation and Synthesis with PLDs
Course Code: 2015505
Course Coordinator : DR. I. ADUM BABU

Year / Sem : I-II
Academic Year : 2021-2022
Regulation: MLRS-R20
Section : Embedded Systems


Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Describe Finite State Machines and strategies for managing multi-clock domain designs.	2.00	2.00	2.00	2.10	Attained
2	Apply HDL coding practices simulating and verifying combinational and sequential circuits for functional correctness.	1.30	3.00	1.64	2.10	Not Attained
3	Analyze placement and routing strategies identifying timing bottlenecks and optimizing FPGA/ASIC layouts.	1.00	3.00	1.40	2.10	Not Attained
4	Evaluate VLSI designs for performance, power efficiency, and testability determining optimal design trade-offs.	1.30	3.00	1.64	2.10	Not Attained
5	Examine trade-offs between different IP forms during prototyping for design efficiency.	2.00	2.00	2.00	2.10	Not Attained
		Final CO		1.74	2.10	

Action Taken:

1. Additional hands-on training sessions on HDL coding, simulation tools, and design verification techniques will be introduced to improve student understanding in digital design and VLSI concepts.
2. Specialized workshops on FPGA/ASIC design, timing analysis, and optimization strategies along with problem-based learning will be implemented to enhance performance and achieve CO attainment in future offerings.


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Course Coordinator


Department HOD
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dungigal(V),Dungigal-Gandmaisamma(M)
Aeschal(D),Hyderabad -500042



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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Advanced Digital Signal Processing
Course Code : 2015506
Course Coordinator : DR.B.SRINIVAS

Year / Sem : I-II
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain the fundamentals and overview of Digital Signal Processing, with time and frequency domain characterization.	1.30	2.00	1.44	2.10	Not Attained
2	Apply multirate DSP techniques using decimators, interpolators, and sampling rate conversion in digital signal processing applications.	2.70	2.00	2.56	2.10	Attained
3	Examine solutions of normal equations and their impact on filter design and prediction accuracy.	2.40	3.00	2.52	2.10	Attained
4	Use gradient adaptive lattice structures in adaptive filter design and implementation.	2.70	3.00	2.76	2.10	Attained
5	Implement spectrum estimation procedures using nonparametric, parametric, minimum-variance, and eigenanalysis techniques for advanced signal analysis.	2.70	3.00	2.76	2.10	Attained
Final CO				2.41	2.10	

Action Taken:

1. Bridge courses and concept-oriented tutorial sessions on fundamental DSP topics, including time and frequency domain analysis, will be introduced to strengthen foundational understanding.
2. Additional practice problems, simulation-based learning, and continuous assessment activities will be implemented to improve conceptual clarity and ensure attainment of all Course Outcomes in future offerings.


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Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V),Dungigal-Gandmaisamma(M)
Medchal(D), Hyderabad - 500043 T S



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : IoT & Applications
Course Code: 2015513
Course Coordinator : Mr. RUPA KUMAR DHANAVATH

Year / Sem : I-II
Academic Year : 2021-2022
Regulation: MLRS-R20
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain the concepts of IoT, web technologies, and the Internet of Things vision, with their applications and future potential.	2.00	2.00	2.00	2.10	Not Attained
2	Differentiate between IoT and M2M concepts for value chains in the global industrial context.	1.70	3.00	2.76	2.10	Attained
3	Implement IoT system components according to reference architectures for specific applications.	2.40	3.00	2.52	2.10	Attained
4	Analyze IoT application scenarios identifying potential benefits, challenges, and value creation opportunities in industry and home management.	2.70	3.00	2.76	2.10	Attained
5	Design secure and trustworthy IoT platforms integrating privacy, governance, and data aggregation strategies for smart city applications.	2.70	3.00	2.76	2.10	Attained
Final CO				2.56	2.10	

Action Taken:

1. Introductory sessions, concept clarification lectures, and visual demonstrations on IoT fundamentals and real-world applications will be incorporated to improve understanding of core concepts.
2. Case studies, industry-based examples, and interactive discussions on IoT architectures, applications, and smart systems will be strengthened to ensure better comprehension and achievement of all Course Outcomes in future offerings.

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(AUTONOMOUS)
Dungigal(V),Dungigal-Gandmaisamma(M)
Medchal(D), Hyderabad - 500043, T.S



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Hardware and Software Co-Design
Course Code: 2015516
Course Coordinator : DR K NAVEEN KUMAR

Year / Sem : I-II
Academic Year : 2021-2022
Regulation: MLRS-R20
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.	2.00	3.00	2.20	2.10	Attained
2	Apply prototyping and emulation on specialized architectures with system communication understanding.	1.70	2.00	1.76	2.10	Not Attained
3	Optimize embedded software for memory efficiency, real-time responsiveness, and energy conservation.	2.40	2.00	2.32	2.10	Attained
4	Design embedded systems with co-design and interface validation for robust performance.	2.70	3.00	2.76	2.10	Attained
5	Model heterogeneous embedded systems with system-level languages and co-simulation tools for efficient integration.	2.70	2.00	2.56	2.10	Attained
			Final CO	2.32	2.10	

Action Taken:

1. Focused laboratory sessions and guided practice on prototyping, emulation techniques, and system communication concepts will be introduced to address the gap in CO2 attainment.
2. Expert lectures, tool-based training, and case study analysis on specialized architectures and co-design practices will be incorporated to enhance student competency and ensure improved CO attainment in future offerings.

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HOD
Department of ECE
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V),Dungigal-Gandmaisamma(M)
Wachhal(D), Hyderabad - 500043.T.S



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : RTL Simulation and Synthesis with PLDs Lab
Course Code: 2015523
Course Coordinator : DR. I. ADUM BABU

Year / Sem : I-II
Academic Year : 2021-2022
Regulation: MLRS-R20
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain the functionality of basic combinational logic circuits.	3.00	2.00	2.80	2.10	Attained
2	Implement latches, flip-flops, 4-bit shift registers, synchronous/asynchronous counters in Verilog	3.00	3.00	3.00	2.10	Attained
3	Apply FSM design techniques implementing sequence generators and traffic light controllers in Verilog.	3.00	3.00	3.00	2.10	Attained
4	Analyze single-port SRAM behavior and arithmetic circuits for correctness and timing.	3.00	3.00	3.00	2.10	Attained
5	Design combinational, sequential, FSM, memory, and arithmetic circuits into complete digital systems using Verilog	3.00	2.00	2.80	2.10	Attained
		Final CO		2.92	2.10	

Action Taken:

1. Advanced design-oriented exercises, HDL-based mini-projects, and real-time digital system implementations will be incorporated to further enhance students' design and verification skills.
2. Continuous improvement through simulation-based assessments, peer learning, and exposure to industry-relevant design tools will be ensured to sustain and elevate CO attainment levels in future offerings.

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Medchal(D), Hyderabad - 500043, T.S



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Advanced Digital Signal Processing Lab
Course Code: 2015524
Course Coordinator : DR.B.SRINIVAS

Year / Sem : I-II
Academic Year : 2021-2022
Regulation: MLRS-R20
Section : Embedded Systems


Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain basic signal representation, autocorrelation and cross-correlation of sequences, and system stability analysis using Routh-Hurwitz criterion	3.00	3.00	3.00	2.10	Attained
2	Apply FFT analysis, Butterworth and Chebyshev filter design, and state-space modeling from differential equations	3.00	2.00	2.80	2.10	Attained
3	Implement spectral estimation, decimation/interpolation techniques, and DFT-based maximally decimated filter analysis	3.00	2.00	2.80	2.10	Attained
4	Analyze convolution, power spectral density estimation, inverse Z-transform, and group delay calculations for signals and systems	3.00	3.00	3.00	2.10	Attained
5	Design parallel and cascaded IIR filter structures and separate time/frequency components for advanced signal processing applications	3.00	2.00	2.80	2.10	Attained
Final CO				2.88	2.10	

Action Taken:

- Advanced analytical exercises and simulation-based activities on FFT, filter design, spectral estimation, and stability analysis will be incorporated to further strengthen students' understanding aligned with the Course Outcomes.
- Mini-projects and application-oriented tasks focusing on IIR filter design, state-space modeling, and signal analysis techniques will be introduced to enhance practical competency and sustain CO attainment in future offerings.


Faculty


Course Coordinator


HOD
Department of ECE
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V),Dungigal-Gandmaisamma(M)
Medchal(D), Hyderabad - 500043,T.S



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INSTITUTE OF TECHNOLOGY AND MANAGEMENT
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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Mini Project with Seminar
Course Code: 2015525
Course Coordinator : DR.N.UDAYA KUMAR

Year / Sem : I-II
Academic Year : 2021-2022
Regulation: MLRS-R20
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	3.00	3.00	2.10	Attained
4	Evaluate the performance and societal impact of the mini-project outcomes regarding sustainability and ethical practices	3.00	2.00	2.80	2.10	Attained
5	Prepare and deliver an effective seminar demonstrating technical findings and professional presentation skills	3.00	2.00	2.80	2.10	Attained
			Final CO	2.92	2.10	

Action Taken:

1. Project-based learning will be further strengthened by incorporating advanced problem identification, literature survey techniques, and use of modern development tools to enhance design and prototype development skills aligned with the Course Outcomes.
2. Structured evaluation methods including performance analysis, societal impact assessment, and seminar presentation practices will be enhanced to improve technical communication and ensure sustained CO attainment in future offerings.

N. Udaya Kumar
Faculty

N. Udaya Kumar
Course Coordinator

Department of ECE
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V), Dundigal-Gandmaisamma(M)



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Pedagogy Studies
Course Code: 2021234
Course Coordinator : DR. NALLAGONDA SRINIVAS

Year / Sem : I-II
Academic Year : 2021-2022
Regulation: MLRS-R20
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	2.00	2.80	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	2.00	2.80	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				2.92	2.10	

Action Taken:

1. Interactive teaching strategies such as case-based discussions, reflective practices, and comparative analysis of pedagogical models will be further enhanced to strengthen understanding of curriculum, pedagogy, and teacher education concepts aligned with the Course Outcomes.
2. Research-oriented activities, including critical review of educational studies, classroom-based observations, and seminar presentations, will be incorporated to improve analytical skills and sustain high CO attainment in future offerings.

P. Pruthi
Faculty

Dr. Nallagonda Srinivas
Course Coordinator

Department of Embedded Systems
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V),Dundigal-Gandmaisamma(M)
500045.T.S



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CO ATTAINMENT ACTION TAKEN REPORT

Program: M.Tech.
Course Name : Wireless Sensor Networks
Course Code: 2015521
Course Coordinator : PALAVANCHA SANDHYA

Year / Sem : II-I
Academic Year : 2022-2023
Regulation: MLRS-R20
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.	2.00	3.00	2.20	2.10	Attained
2	Apply enabling technologies for addressing challenges in mobile ad-hoc and wireless sensor networks.	2.00	2.00	2.00	2.10	Not Attained
3	Analyze various MAC protocols and their role in ZigBee communication.	2.70	3.00	2.76	2.10	Attained
4	Evaluate data dissemination, gathering, fusion techniques, and security protocols in large sensor networks.	2.70	2.00	2.56	2.10	Attained
5	Design wireless sensor networks and integrate them with internet gateways, TinyOS, and nesC.	2.70	3.00	2.76	2.10	Attained
Final CO				2.46	2.10	

Action Taken:

1. Additional concept-oriented sessions and practical demonstrations on enabling technologies in mobile ad-hoc and wireless sensor networks will be incorporated to improve understanding and achieve CO2 attainment.
2. Hands-on exercises using simulation tools, TinyOS, and nesC programming along with application-based case studies will be strengthened to enhance practical skills and ensure better CO attainment in future offerings.

Faculty

Course Coordinator

HOD
Department of ECE
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V), Durgigal-Gandmaisamma(M)
Medchal(D), Hyderabad - 500043, T.S



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Energy from Waste
Course Code: 20155032
Course Coordinator : DR.N.UDAYA KUMAR

Year / Sem : II-I
Academic Year : 2022-2023
Regulation: MLRS-R20
Section : Embedded Systems

Course Outcomes	CO Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Analyze the principles, operation, and applications of various conversion devices incinerators, gasifiers, and digesters for achieving effective waste-to-energy systems.	2.70	3.00	2.20	2.10	Attained
2	Explain the process of biomass pyrolysis, covering slow and fast pyrolysis, the methods for manufacturing charcoal, its yields, and applications	2.70	2.00	2.56	2.10	Attained
3	Describe the design and operation of fixed-bed and fluidized-bed gasifiers with burner and engine setups.	2.70	3.00	2.76	2.10	Attained
4	Assess the performance and efficiency of various biomass combustion devices for thermal energy applications.	2.70	2.00	2.56	2.10	Attained
5	Discuss biogas, biogas plant technology, biomass types, and conversion processes using thermo-chemical and biochemical methods.	2.70	3.00	2.76	2.10	Attained
Final CO				2.57	2.10	

Action Taken:

1. Experiential learning through field visits, case studies on waste-to-energy systems, and demonstrations of biomass conversion technologies will be enhanced to strengthen conceptual and practical understanding aligned with the Course Outcomes.
2. Advanced assignments, simulation-based analysis, and project-based activities focusing on pyrolysis, gasifiers, and biogas systems will be incorporated to sustain high CO attainment and improve application-oriented learning in future offerings.

N. Udaya Kumar
Faculty

N. Udaya Kumar
Course Coordinator

Department of ECE
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V), Dundigal-Gandmaisamma(M)
Medchal(D), Hyderabad - 500043, T.S



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Dissertation Phase -I
Course Code: 2035526
Course Coordinator : DR.B.SRINIVAS

Year / Sem : II-II
Academic Year : 2022-2023
Regulation: MLRS-R20
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	2.00	2.80	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	2.00	2.80	2.10	Attained
Final CO				2.92	2.10	

Action Taken:

1. Industry-oriented problem statements, interdisciplinary research topics, and advanced tool usage will be introduced to further enhance students' ability in problem identification, literature analysis, and research planning aligned with the Course Outcomes.
2. Structured mentoring, periodic progress reviews, and presentation-based evaluations will be strengthened to improve clarity, ethical awareness, and quality of dissertation work, ensuring sustained CO attainment in future offerings.


Faculty


Course Coordinator


Department of HOD
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V),Dungigal-Gandmaisamma(M)
Mechchal(D), Hyderabad - 500043,T.S



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Dissertation Phase-II
Course Code: 2015527
Course Coordinator : DR. NALLAGONDA SRINIVAS

Year / Sem : II-II
Academic Year : 2022-2023
Regulation: MLRS-R20
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	2.00	2.80	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	2.00	2.80	2.10	Attained
5	Prepare a detailed draft dissertation demonstrating technical rigor, ethical compliance, and professional quality	3.00	2.00	2.80	2.10	Attained
		Final CO		2.88	2.10	

Action Taken:

1. Advanced implementation practices using modern embedded tools, validation techniques, and benchmarking with state-of-the-art systems will be further emphasized to enhance innovation and system performance aligned with the Course Outcomes.
2. Continuous mentoring, iterative design improvements, and structured dissertation writing reviews will be strengthened to maintain technical quality, ethical standards, and sustained CO attainment.


Faculty


Course Coordinator


HOD
Department of ECE
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V), Dundigal-Gandmaisamma(M)
Medchal(D), Hyderabad - 500045, T.S.



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CO ATTAINMENT ACTION TAKEN REPORT

Program :M.Tech.
Course Name : Dissertation Viva - Voce
Course Code: 2045528
Course Coordinator : DR. AMARNATH GAINI

Year / Sem : II-II
Academic Year : 2022-2023
Regulation: MLRS-R20
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	

Action Taken:

1. Comprehensive integration of dissertation phases, critical analysis of outcomes, and evidence-based defense practices will be further strengthened through structured reviews and mock presentations aligned with the Course Outcomes.
2. Emphasis on innovation, continuous improvement, and professional communication skills will be enhanced through expert feedback sessions, peer evaluations, and presentation-based assessments to sustain high CO attainment.

A. Gaini
Faculty

A. Gaini
Course Coordinator

S. Reddy
HOD
Department of ECE
MARRI LAXMAN REDDY
Institute of Technology and Management
(AUTONOMOUS)
Dundigal(V), Dundigal-Gandmaka - 500043
Wardha(D), Hyderabad - 500043