



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 : Advanced Structural Analysis
Course Code : 2012011
Course Coordinator : DR. SARAVANAN MURUGESAN

Year / Sem : I-I
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Interpret bending stresses and deflections in beams subjected to unsymmetrical bending.	1.60	3.00	1.88	1.80	Attained
2	Apply concepts to calculate stresses and deflections in curved beams and beams on elastic foundations.	1.60	2.00	1.68	1.80	Not Attained
3	Evaluate the buckling behavior of columns under various loading and boundary conditions.	1.30	2.00	1.44	1.80	Not Attained
4	Analyze stiffness matrices and structural systems using matrix methods.	2.00	2.00	2.00	1.80	Attained
5	Demonstrate the application of the direct stiffness method to analyze trusses, beams, and frames.	2.00	3.00	2.20	1.80	Attained
Final CO				1.84	1.80	Attained

Action Taken: 1.Problem-solving along with real world issues were discussed to address learning gaps and strengthen conceptual clarity in the weaker outcome areas. 2.Complex topics were broken into smaller learning modules with worked examples to help students build understanding progressively.

M. S. J.
Faculty

M. S. J.
Course Coordinator

M. S. J.
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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.

Course Name : Theory of Elasticity

Course Code : 2012012

Course Coordinator : THAMBISETTY JAYAKRISHNA

Year / Sem : I-I

Academic Year : 2021-2022

Regulation : MLRS-R20


Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Analyze the state of stress in two- and three-dimensional systems using stress tensors, transformations, and invariants.	2.00	3.00	2.20	1.80	Attained
2	Interpret different components of strain and their transformations to determine principal and octahedral strains.	2.00	2.00	2.00	1.80	Attained
3	Derive stress-strain relationships and material constants for various material symmetries under plane and axi-symmetric conditions.	1.30	3.00	1.64	1.80	Not Attained
4	Solve two- and three-dimensional elasticity problems using stress function approaches and membrane analogy concepts.	2.00	2.00	2.00	1.80	Attained
5	Evaluate yielding behavior of materials using different yield criteria and hardening rules in plasticity.	1.30	2.00	1.44	1.80	Not Attained
Final CO				1.86	1.80	Attained

Action Taken: 1) Complex topics such as stress-strain relationships and yield criteria were taught using step-by-step derivations and clear conceptual explanations to improve understanding. 2) Engineering applications and case-based discussions were included to connect theoretical concepts with practical structural behavior and material response.


Faculty


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.

Course Name : Theory of structural stability

Course Code : 2012043

Course Coordinator : DR. MURALI KALLEMPUDI

Year / Sem : I-I

Academic Year : 2021-2022

Regulation : MLRS-R20

Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain the criteria for structural design including stability, strength and stiffness, and differentiate between linear and nonlinear behavior in discrete and continuous systems.	3.00	3.00	3.00	1.80	Attained
2	Demonstrate the stability behavior of columns under axial, flexural and torsional buckling with and without lateral bracing.	0.90	2.00	1.12	1.80	Not Attained
3	Investigate the global and local stability of frame structures by examining slenderness ratios and buckling interactions.	2.70	3.00	2.76	1.80	Attained
4	Assess the susceptibility of beams and plates to different buckling modes under axial, shear, and combined loads.	3.00	3.00	3.00	1.80	Attained
5	Illustrate the concepts of inelastic and dynamic buckling through examples of structural behavior beyond the elastic limit.	3.00	2.00	2.80	1.80	Attained
Final CO				2.54	1.80	Attained

Action Taken: 1) Enhanced practice through assignments by giving additional practice problems focusing on weak areas were provided to improve understanding and retention. 2) Regular assessments were conducted to get more clarity on loading conditions, ensuring better preparation and continuous monitoring of student performance.

M. Suf
Faculty

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Advanced Reinforced Concrete Design
Course Code : 2012044
Course Coordinator : DR. DSVSMRK CHEKRAVARTY

Year / Sem : I-I
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Describe the various loads, load combinations, design methods and key concepts such as plastic hinges and moment redistribution in limit state design.	2.70	2.00	2.56	1.80	Attained
2	Illustrate IS code provisions by working out bending moment envelopes for fixed, continuous, deep beams, and corbels.	2.70	2.00	2.56	1.80	Attained
3	Investigate slab behavior using yield line and equilibrium methods and determine reinforcement requirements for ribbed and flat slabs.	2.70	3.00	2.76	1.80	Attained
4	Critique design approaches for shear, bond, and torsion failures and recommend effective reinforcement detailing according to limit state principles.	2.70	3.00	2.76	1.80	Attained
5	Design short and slender columns including applying the additional moment method and slenderness criteria.	2.70	2.00	2.56	1.80	Attained
Final CO				2.64	1.80	Attained

Action Taken: 1) Emphasized systematic use of IS code provisions in solving design problems related to beams, slabs, and columns to improve accuracy and confidence. 2) Assignments were structured to include realistic and complex design problems, covering deep beams, flat slabs, torsion, and slender columns.

DCS
Faculty

D. C.
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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Numerical Analysis Lab
Course Code : 2012071
Course Coordinator : DR. SARAVANAN MURUGESAN

Year / Sem : I-I
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Perform basic matrix operations and implement numerical techniques using MATLAB for solving engineering problems	3.00	2.00	2.80	1.80	Attained
2	Analyze structural systems using methods for solving linear equations like Gauss Elimination, Gauss-Seidel, and Gauss-Jordan.	3.00	2.00	2.80	1.80	Attained
3	Analyze structural systems using methods for solving linear equations like Gauss Elimination, Gauss-Seidel, and Gauss-Jordan.	3.00	2.00	2.80	1.80	Attained
4	Apply curve fitting and numerical integration techniques to model data and compute areas or volumes.	3.00	3.00	3.00	1.80	Attained
5	Implement numerical methods for solving ordinary differential equations such as Euler's and Runge-Kutta methods.	3.00	2.00	2.80	1.80	Attained
Final CO				2.84	1.80	Attained

Action Taken: 1. Additional hands-on exercises were incorporated to reinforce matrix operations, numerical techniques, and MATLAB programming for engineering applications. 2. Curve fitting and numerical integration tasks were linked with experimental and real data sets to strengthen modelling and interpretation skills.

M. Saravanan
Faculty

M. Saravanan
Course Coordinator

M. Saravanan
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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Advanced Concrete Technology Lab
Course Code : 2012072
Course Coordinator : DR. DSVSMRK CHEKRAVARTY

Year / Sem : I-I
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Perform mix design and conduct workability and material characterization tests on fresh concrete.	3.00	2.00	2.80	1.80	Attained
2	Conduct compression and flexure tests on hardened concrete specimens to assess strength characteristics.	3.00	2.00	2.80	1.80	Attained
3	Evaluate the durability of concrete through permeability, chloride permeability, carbonation, and half-cell potential tests.	3.00	3.00	3.00	1.80	Attained
4	Utilize non-destructive testing techniques such as rebound hammer and ultrasonic pulse velocity for assessing concrete quality.	3.00	2.00	2.80	1.80	Attained
5	Interpret test results to determine concrete properties and suggest improvements for mix design and structural performance.	3.00	3.00	3.00	1.80	Attained
Final CO				2.88	1.80	Attained

Action Taken: 1) Laboratory sessions emphasized proper execution of mix design, fresh concrete tests, and specimen preparation to improve practical competency. 2) Students were guided to critically analyze test results, compare with standards, and suggest suitable improvements in mix design and performance.

D. Ch
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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Advanced Concrete Technology
Course Code : 2012021
Course Coordinator : THAMBISSETTY JAYAKRISHNA

Year / Sem : I-I
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Examine the properties and behavior of concrete making materials including cement, aggregates, admixtures, alkali-silica reaction and relevant BIS provisions	1.30	3.00	1.64	1.80	Not Attained
2	Assess the performance of fresh and hardened concrete with respect to workability, strength development, durability, creep shrinkage, and non-destructive testing methods	1.30	3.00	1.64	1.80	Not Attained
3	Determine the characteristics and performance requirements of high strength, ultra-high strength, and high-performance concretes in accordance with BIS provisions.	1.30	3.00	1.64	1.80	Not Attained
4	Formulate appropriate concrete mix strategies for special concretes considering quality control, quality assurance, and standard mix proportioning methods.	2.30	2.00	2.24	1.80	Attained
5	Investigate formwork systems, materials, construction practices removal procedures, reshoring, and causes of formwork failure	1.60	2.00	1.68	1.80	Not Attained
Final CO				1.77	1.80	Attained

Action Taken: 1) Practical demonstrations on workability tests, strength testing, and durability assessment methods were emphasized to improve conceptual clarity through hands-on exposure. 2) Additional discussions and visual aids on formwork systems, site practices, and failure cases were provided to bridge the gap between theory and field applications.

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Faculty

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Course Coordinator

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HDD

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Disaster Management
Course Code : 2010002
Course Coordinator : NANDITHA MANDAVA

Year / Sem : I-I
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

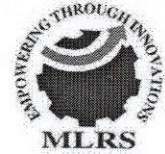
Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Identify disaster-prone zones in India such as seismic, flood drought, landslide, cyclone, and tsunami-prone regions.	3.00	2.00	2.80	2.40	Attained
2	Analyze the impact of disasters on human and animal life and evaluate their short- and long-term effects.	3.00	3.00	3.00	2.40	Attained
3	Evaluate the roles and responsibilities of government agencies and local communities in disaster preparedness.	3.00	3.00	3.00	2.40	Attained
4	Apply risk assessment techniques to evaluate vulnerability and potential impact in different regions	3.00	2.00	2.80	2.40	Attained
5	Classify structural and non-structural mitigation strategies.	3.00	2.00	2.80	2.40	Attained
Final CO				2.88	2.40	Attained

Action Taken: 1) Recent national and international disaster events were incorporated into teaching to enhance understanding of disaster types, impacts, and mitigation strategies. 2) Students were engaged in discussions and assignments related to Indian disaster management programs and global frameworks to improve analytical and evaluative skills.

Nanditha
Faculty

Nanditha
Course Coordinator

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : FEM in Structural Engineering
Course Code : 2022013
Course Coordinator : THAMBISSETTY JAYAKRISHNA

Year / Sem : I-II
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Identify different types of materials, forces, and deformation problems and apply equilibrium equations in 2-D and 3-D continua	1.60	2.00	1.68	1.80	Not Attained
2	Formulate finite element models for 1-D and 2-D problems using variational principles and approximation methods.	2.30	2.00	2.24	1.80	Attained
3	Construct shape functions and stiffness matrices for linear and quadratic isoperimetric quadrilateral elements using natural coordinates.	1.30	3.00	1.64	1.80	Not Attained
4	Explain finite element formulations for 3-D tetrahedral and hexahedral elements and apply Galerkin's method to structural problems.	3.00	3.00	3.00	1.80	Attained
5	Analyze 1-D, 2-D, and 3-D finite element models and interpret results using commercial FEA software.	3.00	3.00	3.00	1.80	Attained
Final CO				2.31	1.80	Attained

Action Taken: 1) Emphasis was placed on understanding basic concepts such as equilibrium equations, boundary conditions, and continuum behavior through structured explanations and examples. 2) Topics like shape functions, natural coordinates, and stiffness matrix formulation were reinforced with step-by-step derivations and conceptual clarity.

[Signature]
Faculty

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Course Coordinator

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Advance Steel Design
Course Code : 2022047
Course Coordinator : DR. SARAVANAN MURUGESAN

Year / Sem : I-II
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Describe the behavior and failure modes of bolted and welded connections, including load transfer, slip-critical connections, and design of fillet and groove welds.	1.60	2.00	1.68	1.80	Not Attained
2	Perform plastic analysis of beams and frames to determine collapse loads and plastic hinge formations for various structural systems.	1.60	2.00	1.68	1.80	Not Attained
3	Examine different types of eccentric and moment-resisting connections, including bolted and welded framed, bracket, and seat connections.	1.30	2.00	1.44	1.80	Not Attained
4	Assess the design requirements for industrial buildings under dead, live, and wind loads, and evaluate the design of trusses, purlins, bracings, and related components.	1.60	3.00	1.88	1.80	Attained
5	Apply design principles to steel truss girder bridges including members under compression and tension, and wind effects on bracings.	1.30	2.00	1.44	1.80	Not Attained
Final CO				1.62	1.80	Attained

Action Taken: 1) Detailed sketches of bolted/welded connections, moment-resisting joints, and bracing systems were incorporated to improve visualization and practical understanding. 2) Real-world case studies of industrial structures, steel bridges, and connection detailing were introduced to bridge the gap between theory and practice.

M.S.A.
Faculty

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.

Course Name : Structural Dynamics

Course Code : 2022014

Course Coordinator : DR. MURALI KALLEMPUDI

Year / Sem : I-II

Academic Year : 2021-2022

Regulation : MLRS-R20

Section : STRUCTURAL ENGINEERING A/

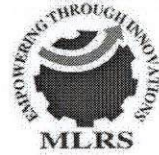
Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Formulate equations of motion for vibratory systems using Newton's laws, D'Alembert's principle, virtual work, and Hamilton's principle.	1.60	3.00	1.88	1.80	Attained
2	Analyze the dynamic response of single-degree-of-freedom systems under various loading conditions including damping and periodic forces.	1.60	3.00	1.88	1.80	Attained
3	Evaluate natural frequencies and mode shapes of undamped multi-degree-of-freedom systems using eigenvalue analysis.	1.30	3.00	1.64	1.80	Not Attained
4	Apply Stodola and Holzer methods for fundamental and higher mode vibration analysis.	2.30	3.00	2.44	1.80	Attained
5	Derive governing differential equations for beam vibrations and determine natural frequencies and mode shapes for various end conditions.	2.30	3.00	2.44	1.80	Attained
Final CO				2.06	1.80	Attained

Action Taken: 1) Complex topics like eigenvalue problems, mode shapes, and frequency extraction were explained using step-by-step procedures and clear mathematical interpretation 2) More structured numerical problems were included covering SDOF to MDOF progression to improve analytical confidence. 3) Graphical representation of mode shapes and dynamic response, along with MATLAB/Excel-based demonstrations, were used to improve conceptual understanding.

S. Reddy
Faculty

S. Reddy
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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Design of Prestressed Concrete Structures
Course Code : 2022051
Course Coordinator : DR. DSVSMRK CHEKRAVARTY

Year / Sem : I-II
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain various prestressing systems, losses of prestress, and the concepts of resultant stresses and load balancing in prestressed concrete.	1.60	2.00	1.68	1.80	Not Attained
2	Calculate short-term and long-term deflections of prestressed concrete members and determine the ultimate flexural strength of beams using simplified methods.	1.60	2.00	1.68	1.80	Not Attained
3	Examine the behavior of composite beams, including flexural and shear strengths, differential shrinkage, and deflections, and design composite sections accordingly.	1.60	3.00	1.88	1.80	Attained
4	Design prestressed one-way and two-way slabs, as well as prestressed concrete pipes, considering their types and specific design requirements.	1.60	2.00	1.68	1.80	Not Attained
5	Analyze the effects of prestressing on continuous beams secondary moments, and anchorage zone stresses using relevant methods and IS code provisions.	1.60	2.00	1.68	1.80	Not Attained
Final CO				1.72	1.80	Attained

Action Taken: 1) Assignments and class discussions were enhanced to include design of slabs, pipes, continuous beams, anchorage zones, and secondary effects. 2) Stress profiles, cable profiles, load balancing concepts, and secondary moment effects were explained using clear diagrams and graphical interpretation.

D.C.
Faculty

D.C.
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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Advanced Structural Engineering Lab
Course Code : 2022073
Course Coordinator : NANDITHA MANDAVA

Year / Sem : I-II
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Explain the load-deflection behavior and failure mechanisms of under-reinforced and over-reinforced reinforced concrete beams under static loading	3.00	3.00	3.00	1.80	Attained
2	Analyze and compare the structural performance of RC beams with and without shear reinforcement, including stiffness, ductility and failure modes.	3.00	3.00	3.00	1.80	Attained
3	Apply non-destructive testing methods (Rebound Hammer and Ultrasonic Pulse Velocity) to evaluate the quality and strength of concrete, including temperature effects	3.00	3.00	3.00	1.80	Attained
4	Interpret the load-deflection characteristics of RC beams and columns under cyclic loading, torsion, and impact, using high-capacity actuators	3.00	3.00	3.00	1.80	Attained
5	Evaluate the dynamic response and structural condition of reinforced concrete systems using Ambient Vibration Testing	3.00	3.00	3.00	1.80	Attained
Final CO				3.00	1.80	Attained

Action Taken: 1) Experiments were designed to compare different reinforcement conditions and loading scenarios, improving analytical understanding of structural performance. 2) Emphasis was placed on non-destructive testing methods and ambient vibration testing to enhance practical knowledge of structural evaluation.

Nandi
Faculty

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Structural Design Lab
Course Code : 2022074
Course Coordinator : DR. SARAVANAN MURUGESAN

Year / Sem : I-II
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

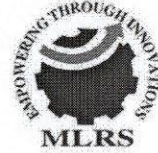
Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Perform static and dynamic analysis of building structures using structural analysis software such as ETABS / STAAD. Pro	3.00	2.00	2.80	1.80	Attained
2	Design reinforced concrete and steel structural components using software tools in accordance with relevant design codes	3.00	2.00	2.80	1.80	Attained
3	Analyze the behavior of folded plates and shell structures using appropriate structural analysis software	3.00	3.00	3.00	1.80	Attained
4	Develop Excel spreadsheets for structural analysis and design calculations to support software-based design	3.00	2.00	2.80	1.80	Attained
5	Interpret and validate software-generated analysis and design results for structural safety, serviceability, and economy	3.00	3.00	3.00	1.80	Attained
Final CO				2.88	1.80	Attained

Action Taken: 1) Emphasis was placed on effective use of tools like ETABS/STAAD for modeling, analysis, and design of structural systems. 2) Emphasis was given to interpreting outputs, checking for errors, and ensuring safety, serviceability, and economy in design solutions.

M. S. J.
Faculty

M. S. J.
Course Coordinator

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Mini Project With Seminar
Course Code : 2022081
Course Coordinator : THAMBISETTY JAYAKRISHNA

Year / Sem : I-II
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Categorize structural steel sections based on metallurgical characteristics, mechanical properties, limit state concepts, and plastic behavior	0.90	2.00	1.12	1.80	Not Attained
2	Differentiate structural systems and connection types used in multi-storey, industrial, and pre-engineered buildings under various loading conditions	0.90	3.00	1.32	1.80	Not Attained
3	Justify the use of steel-concrete composite slabs, beams, and columns considering shear interaction and structural performance	0.90	2.00	1.12	1.80	Not Attained
4	Conclude fatigue performance of steel structures subjected to variable repeated loading using S-N curve-based assessment	0.90	3.00	1.32	1.80	Not Attained
5	Formulate cold-formed steel member behavior accounting for buckling, post-buckling, and strength prediction methods	0.90	3.00	1.32	1.80	Not Attained
Final CO				1.24	1.80	Attained

Action Taken: 1) Greater emphasis was placed on identifying relevant engineering problems and defining clear project objectives aligned with structural engineering applications. 2) Focus was given to preparation of technical reports, seminar presentations, and effective communication of project outcomes.

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Pedagogy studies
Course Code : 2020006
Course Coordinator : SHAIK FIROZ KHAN

Year / Sem : I-II
Academic Year : 2021-2022
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	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	0.00	2.40	1.80	Attained
2	Outline various pedagogical practices used by teachers in formal and informal classrooms in developing countries.	3.00	0.00	2.40	1.80	Attained
3	Analyze the strengths of evidence supporting effective pedagogical strategies and teacher attitudes impacting classroom learning.	3.00	0.00	2.40	1.80	Attained
4	Assess the alignment of professional development programs with classroom practices, including barriers such as resources and class size.	3.00	0.00	2.40	1.80	Attained
5	Apply knowledge of research design and pedagogy to identify future directions and gaps in teacher education and curriculum research.	3.00	0.00	2.40	1.80	Attained
Final CO				2.40	1.80	Attained

Action Taken: 1) Discussions and assignments focused on evaluating pedagogical strategies, teacher attitudes, and classroom practices using research findings and documented evidence. 2) Emphasis was given to understanding the role of teacher training, peer support, institutional resources, and classroom conditions in improving learning outcomes.

Shaiq
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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Earthquake Resistance design of Buildings
Course Code : 2032055
Course Coordinator : DR. DSVSMRK CHEKRAVARTY

Year / Sem : II-I
Academic Year : 2022-2023
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Outline earthquake phenomena, seismic waves, measuring instruments, and seismic design requirements.	2.00	3.00	2.20	1.80	Attained
2	Summarize conceptual design of lateral load resisting systems material ductility, and seismic analysis methods.	1.30	3.00	1.64	1.80	Not Attained
3	Examine RC buildings for earthquake resistance, considering irregularities, structural walls, and non-structural elements.	1.00	3.00	1.40	1.80	Not Attained
4	Calculate rectangular and flanged shear walls for earthquake-resistant structures.	1.30	2.00	1.44	1.80	Not Attained
5	Demonstrate ductility considerations and capacity-based design principles for RC buildings under seismic loads.	1.70	3.00	1.96	1.80	Attained
Final CO				1.73	1.80	Attained

Action Taken: 1) Teaching was enhanced with clear explanations of lateral load resisting systems, ductility concepts, and seismic analysis methods, supported by structured notes and diagrams. 2) Assignments were revised to include step-by-step design problems of rectangular and flanged shear walls, improving analytical and design skills.

D. Ch
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CO ATTAINMENT ACTION TAKEN REPORT


Program : M.Tech.
Course Name : Fundamentals of Nano Technology
Course Code : 2035503
Course Coordinator : DR. GADE NARSINGA RAO


Year / Sem : II-I
Academic Year : 2022-2023
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Understand the unique physical and chemical properties of materials at the nanoscale and how they differ from bulk materials	2.70	2.00	2.56	2.10	Attained
2	Compare various synthesis techniques, including top-down and bottom-up approaches, for the fabrication of nanomaterials.	2.70	2.00	2.56	2.10	Attained
3	Apply advanced characterization techniques such as SEM, TEM, EDS, and WDS to analyze the structure and properties of nanomaterials.	1.70	2.00	1.76	2.10	Not Attained
4	Analyze the electronic, optical, mechanical, and thermal properties of nanomaterials to their functional advantages.	2.70	2.00	2.56	2.10	Attained
5	Evaluate the applications of nanomaterials in fields such as electronics, medicine, energy, and environmental science.	2.70	2.00	2.56	2.10	Attained
Final CO				2.40	2.10	Attained

Action Taken: 1) Emphasis was placed on the principles, operation, and interpretation of characterization techniques such as SEM, TEM, EDS, and WDS to improve analytical understanding. 2) Real-world examples and recent advancements in nanotechnology were incorporated to strengthen the connection between nanomaterial properties and engineering applications.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Dissertation Work Phase-I
Course Code : 2032076
Course Coordinator : THAMBISSETTY JAYAKRISHNA


Year / Sem : II-I
Academic Year : 2022-2023
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Critique the progress of their research based on literature and initial findings.	0.90	2.00	1.12	1.80	Not Attained
2	Organize experimental or computational data to support hypothesis validation.	0.90	2.00	1.12	1.80	Not Attained
3	Interpret results obtained from preliminary analyses or simulations.	0.90	2.00	1.12	1.80	Not Attained
4	Justify the chosen methodologies and their modifications as per research needs.	0.90	2.00	1.12	1.80	Not Attained
5	Plan subsequent research steps to achieve project objectives effectively.	0.90	2.00	1.12	1.80	Not Attained
Final CO				1.12	1.80	Attained

Action Taken: 1) Emphasis was placed on clearly defining problem statements, objectives, and methodology selection, ensuring students understand the research framework from the beginning. 2) Structured guidance was provided to critically analyze research papers and properly link literature findings with their research objectives and gaps.


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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.
Course Name : Dissertation Work Phase-II
Course Code : 2042077
Course Coordinator : THAMBISETTY JAYAKRISHNA

Year / Sem : II-II
Academic Year : 2022-2023
Regulation : MLRS-R20
Section : STRUCTURAL ENGINEERING A/

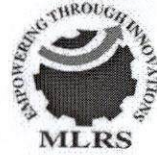
Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Assess the completeness and accuracy of the research outcomes against objectives.	0.90	2.00	1.12	1.80	Not Attained
2	Summarize key findings and their implications for structural engineering practice.	0.90	3.00	1.32	1.80	Not Attained
3	Formulate conclusions based on comprehensive data analysis.	0.90	2.00	1.12	1.80	Not Attained
4	Recommend improvements or future work directions grounded in research results.	0.90	2.00	1.12	1.80	Not Attained
5	Document research progress clearly and systematically for final submission.	0.90	3.00	1.32	1.80	Not Attained
Final CO				1.20	1.80	Attained

Action Taken: 1) Structured guidance provided to perform comprehensive data analysis and draw meaningful conclusions, linking results with structural engineering applications. 2) Emphasis was placed on aligning research outcomes with clearly defined objectives, ensuring completeness and accuracy in results.

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CO ATTAINMENT ACTION TAKEN REPORT

Program : M.Tech.

Course Name : Dissertation Viva-Voce

Course Code : 2042078

Course Coordinator : DR. DSVSMRK CHEKRAVARTY

Year / Sem : II-II

Academic Year : 2022-2023

Regulation : MLRS-R20

Section : STRUCTURAL ENGINEERING A/

Course Outcome	CO-Statement	CIE + SEE(a)	CES (d)	Final CO Attained	Target	Remarks
1	Defend their research methodology and findings confidently during oral examination.	2.10	3.00	2.28	1.80	Attained
2	Explain technical concepts and complex data clearly to an academic panel.	2.10	3.00	2.28	1.80	Attained
3	Respond effectively to critical questions and suggestions from examiners.	2.10	2.00	2.08	1.80	Attained
4	Demonstrate comprehensive knowledge of the subject and related interdisciplinary areas.	2.10	3.00	2.28	1.80	Attained
5	Justify the significance and novelty of their research contributions.	2.10	3.00	2.28	1.80	Attained
Final CO				2.24	1.80	Attained

Action Taken: 1) Structured guidance is provided to explain complex concepts and data using simple, logical, and well-organized explanations supported by visuals. 2) Focus was given on developing the ability to analyze questions, justify decisions, and respond confidently to examiner queries.

D. Ch
Faculty

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