INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal - 500 043, Hyderabad, Telangana

Department of Structural Engineering

Attainment of Program Outcomes (POs) of 2021 - 2023 batch (IARE – PG21)

Course Code	Course Name	Program Outcomes (POs)					
		PO1	PO2	PO3	PO4	PO5	PO6
BSTC01	Advanced Structural Analysis	1.90		1.10	1.30	1.60	
BSTC02	Advanced Solid Mechanics	1.10		1.10	1.00		
BSTC03	Theory of Plates and Shells	2.30		2.60	2.80	2.60	
BSTC08	Advanced Concrete Technology	1.20		1.30	1.30	1.20	1.20
BSTC11	Advanced CAD Laboratory		3.00	3.00	3.00	3.00	3.00
BSTC12	Advanced Concrete Laboratory	3.00		3.00	3.00	3.00	
BSTC13	Finite Element Analysis	2.80		2.50	2.50	2.40	2.50
BSTC14	Structural Dynamics	2.40		2.40	2.40	2.50	
BSTC15	Advanced Reinforced Concrete Design	2.30		2.70	2.60	2.80	
BSTC22	Retrofitting and Rehabilitation of Structures	2.90	2.90	2.90	2.80	2.90	
BSTC23	Structural Design Laboratory	3.00	3.00	3.00		3.00	
BSTC24	Numerical Analysis Laboratory	3.00	3.00				
BSTC25	Mini Project with Seminar	3.00	3.00	3.00	3.00	3.00	3.00
BSTC26	Design of Pre stressed Concrete Structures			2.10	2.00	2.00	
BHSC11	Research Methodology and IPR	2.80	2.90		2.90	2.90	2.90
BPSC30	Waste to Energy			2.90	2.90	2.90	
BSTC31	Phase - I Dissertation	3.00	3.00	3.00	3.00		3.00
BSTC32	Phase - II Dissertation	1.60	1.60	1.60	1.60	1.60	1.60
Direct Attainment Value		**2.4**	**2.8**	**2.4**	**2.4**	**2.5**	**2.5**

Overall Attainment

Sl. No	Assessment Components (Direct + Indirect)	Program Outcomes (POs)					
		PO1	PO2	PO3	PO4	PO5	PO6
1	Direct Assessment (CIA + SEE + Course End Survey) (a)	2.4	2.8	2.4	2.4	2.5	2.5
2	Program Exit Survey (b)	2.4	2.6	2.5	2.1	2.0	2.3
3	Alumni Survey (c)	1.9	2.0	2.2	2.3	2.0	2.1
4	Employer Survey (d)	2.2	2.0	2.1	2.3	2.0	2.0
Overall attainment = a*0.8 + b*0.1 + c*0.05 + d*0.05		**2.4**	**2.7**	**2.4**	**2.4**	**2.4**	**2.4**

Action taken to improve the attainment of POs:

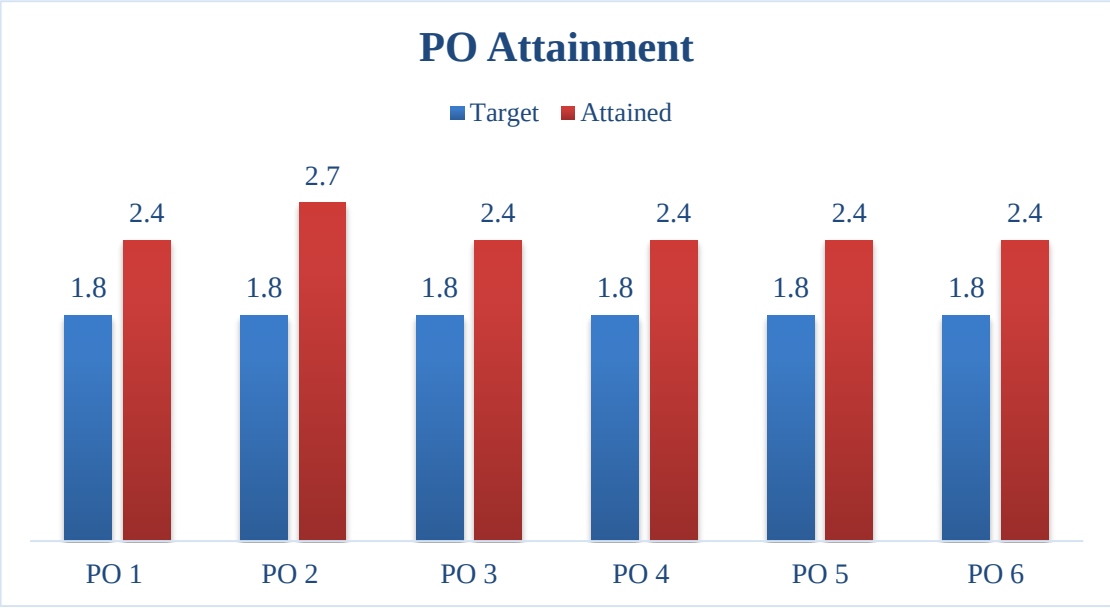
POs	Target Level	Attainment Level	Observation
PO1: An ability to Independently carry out research/investigation and development work to solve practical problems			
PO1	**1.8**	**2.4**	**Target Achieved. Following courses were identified which didn't meet the attainment target. BSTC02, BSTC08 and BSTC32.**
Action: 1. Target attainment was sustained by assigning independent problem-based research tasks addressing real structural engineering issues. 2. Advanced numerical and analytical investigations were carried out using software tools for structural modeling and validation. 3. Design- and analysis-based investigations were aligned with practical constraints and relevant IS code provisions.			
PO2: An ability to Write and present a substantial technical report/document			
PO2	**1.8**	**2.7**	**Target Achieved. Following courses were identified which didn't meet the attainment target. BSTC32.**
Action: 1. Target attainment was sustained by assigning comprehensive technical reports for all design and analysis exercises. 2. Research-oriented mini projects required submission of journal-style reports, enhancing professional documentation skills. 3. Faculty guidance emphasized referencing standards, citations, and inclusion of latest research findings in reports.			

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.			
PO3	**1.8**	**2.4**	**Target Achieved. Following courses were identified which didn't meet the attainment target. BSTC01, BSTC02, BSTC08 and BSTC32.**
Action: 1. Research-oriented assignments encouraged exploration of current structural engineering developments and emerging technologies. 2. Faculty-led guidance and mentoring enabled mastery in interpreting complex results and proposing optimized solutions. 3. Exposure to case studies, real-world structural failures, and industry practices promoted advanced problem-solving capabilities.			
PO4: Capable to apply the core, multidisciplinary knowledge for understanding the problems in structural engineering and allied fields.			
PO4	**1.8**	**2.4**	**Target Achieved. Following courses were identified which didn't meet the attainment target. BSTC01, BSTC02, BSTC08 and BSTC32.**
Action: 1. Target attainment was maintained by assigning complex design and analysis problems requiring integration of core structural engineering concepts. 2. Software-based modeling (ETABS, ABAQUS, ANSYS) assignments were used to simulate real-world structural behavior and validate theoretical predictions. 3. Research projects incorporating nonlinear analysis, prestressed concrete behavior, and material characterization enhanced multidisciplinary application skills.			
PO5: Conceptualize and design civil engineering structures considering various socio-economic factors.			
PO5	**1.8**	**2.4**	**Target Achieved. Following courses were identified which didn't meet the attainment target. BSTC01, BSTC08 and BSTC32.**
Action: 1. Target attainment was sustained by assigning design problems that integrate structural efficiency with cost, sustainability, and societal needs. 2. Case studies of real projects were introduced to highlight the impact of socio-economic factors on structural design choices. 3. Advanced software tools were used to simulate designs, analyze alternatives, and evaluate economic feasibility of solutions.			

PO6: Engage in life-long learning for continuing education in research level studies and professional development.			
PO6	**1.8**	**2.4**	**Target Achieved. Following courses were identified which didn't meet the attainment target. BSTC08 and BSTC32.**

Action:

1. Target attainment was sustained by assigning advanced design problems reflecting real-life constraints, materials, and budget considerations.
2. Research-oriented assignments encouraged evaluation of innovative materials and construction techniques for practical applicability.
3. Mini projects and term papers required documentation of design alternatives, cost analysis, and life-cycle considerations.



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