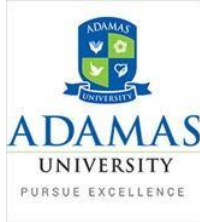


ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING & TECHNOLOGY
Department of Civil Engineering
M.Tech (Structural Engineering)
Course Structure & Syllabus
2024-2025



**ADAMAS UNIVERSITY, KOLKATA
SCHOOL OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING**

VISION OF THE UNIVERSITY

To be an internationally recognized university through excellence in inter-disciplinary education, research and innovation, preparing socially responsible well-grounded individuals contributing to nation building.

MISSION STATEMENTS OF THE UNIVERSITY

M.S 01: Improve employability through futuristic curriculum and progressive pedagogy with cutting-edge technology

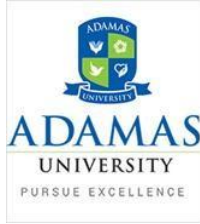
M.S 02: Foster outcomes-based education system for continuous improvement in education, research and all allied activities

M.S 03: Instill the notion of lifelong learning through culture of research and innovation

M.S 04: Collaborate with industries, research centers and professional bodies to stay relevant and up-to-date

M.S 05: Inculcate ethical principles and develop understanding of environmental and social realities

CHANCELLOR / VICE CHANCELLOR



**ADAMAS UNIVERSITY, KOLKATA
SCHOOL OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING**

VISION OF THE SCHOOL

To develop well-grounded, socially responsible engineers and technocrats in a way to create a transformative impact on Indian society through continual innovation in education, research, creativity and entrepreneurship.

MISSION STATEMENTS OF THE SCHOOL

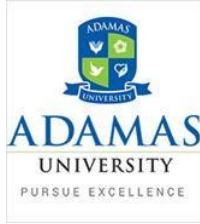
M.S 01: Build a transformative educational experience through disciplinary and interdisciplinary knowledge, problem solving, communication and leadership skills.

M.S 02: Develop a collaborative environment open to the free exchange of ideas, where research, creativity, innovation and entrepreneurship can flourish among individual students.

M.S 03: Impact society in a transformative way – regionally and nationally - by engaging with partners outside the borders of the university campus.

M.S 04: Promote outreach programs which strives to inculcate ethical standards and good character in the minds of young professionals.

DEAN / SOET



**ADAMAS UNIVERSITY, KOLKATA
SCHOOL OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING**

VISION OF THE DEPARTMENT

To impart quality higher education in Civil Engineering for a continuously changing societal demands with credibility, integrity and ethical standards.

MISSION STATEMENTS OF THE DEPARTMENT

M.S 01: Produce well qualified and employable engineers by imparting quality education through industry based flexible curriculum.

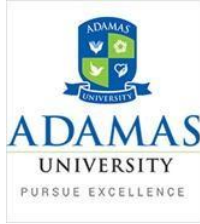
M.S 02: Enhance the skills of entrepreneurship, innovativeness, management and life-long learning in young engineers.

A handwritten signature in black ink, appearing to be 'S. S. S.', written over a horizontal line.

HOD

A handwritten signature in black ink, appearing to be 'A. M. S.', written over a horizontal line.

DEAN / SOET



**ADAMAS UNIVERSITY,
SCHOOL OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING**

Name of the Programme: M. Tech (Structural Engineering)

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

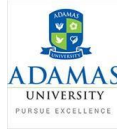
PEO1: Engage in analysis and design of various structures, tools and its applications in the field of Construction and allied engineering industries.

PEO2: Apply the knowledge of Civil Engineering to solve problems of social relevance, and/or pursue higher education and research.

PEO3: Work effectively as individuals and as team members in multidisciplinary projects.

HOD

DEAN / SOET



**ADAMAS UNIVERSITY, KOLKATA
SCHOOL OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING**

Name of the Programme: M. Tech (Structural Engineering)

GRADUATE ATTRIBUTE / PROGRAMME OUTCOME (PO)

PO1: Domain Knowledge: Apply comprehensive knowledge of theories, concepts and principles for effective control and management of construction industry projects.

PO2: Problem Analysis: Identify and analyze the strategic importance of construction projects and its problems in the perspectives of client, context and constraints and obtain solution using mathematics, engineering and management principles.

PO3: Design/Development of Solutions: Planning, scheduling, and control of construction projects by managing resources and constraints with appropriate consideration for the public health and safety, and the cultural, societal, and economical considerations.

PO4: Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern IT prediction and simulation tools for construction projects.

PO6: Project Management, Governance and Finance: Create comprehensive understanding of the techniques associated with the management of resources and finance, assessment and management of risk and subsequent corporate governance as appropriate to a project manager operating in the construction industry.

PO7: Ethics and Environment: Understand the impact of residential, commercial, industrial and infrastructural projects in societal, ethical and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO9: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO10: Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



HOD



DEAN / SOET



ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING & TECHNOLOGY
M.Tech in Structural Engineering

ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING & TECHNOLOGY
Course Structure of M. Tech (Structural Engineering)

SEMESTER I								
Sl. No.	Type	New Course Code	Title of the Course	L	T	P	Contact Hours/Week	Credits
1	Theory	MTH21525	Advanced Engineering Mathematics	3	1	0	4	4
2	Theory	MGT21401	Industrial Management	3	0	0	3	3
3	Theory	STR21001	Advanced Structural Analysis	3	0	0	3	3
4	Theory	STR21002	Soil Structure Interaction	3	0	0	3	3
			Elective – I					
		STR 21003						
		STR21004	Bridge Engineering					
		STR21005	Structural Optimization					
5	Theory		Repair & Rehabilitation of Structure	3	1	0	4	4
6	Practical	STR22006	Structural Laboratory I	0	0	3	3	2
7	Practical	STR22007	CAD LAB	0	0	3	3	2
8	Sessional	STR25008	Seminar - I	0	2	0	2	1
			Total	15	4	6	25	22
SEMESTER II								
Sl. No.	Type	Course Code	Title of the Course	L	T	P	Contact Hours/Week	Credits
1	Theory	STR21009	Advanced Structural Design	3	1	0	4	4
2	Theory	STR21010	Structural Dynamics & Earthquake Engineering	3	1	0	4	4
3	Theory	STR21011	Theory of Elasticity & Plasticity	3	0	0	3	3



ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING & TECHNOLOGY
M.Tech in Structural Engineering

4	Theory	STR21012	Elective – II Advanced Foundation Engineering	3	1	0	4	4
		STR21013	Prestressed Concrete Structures					
		STR21014	Composite Material & Structures					
5	Theory	STR21015	Elective – III Environmental Impact Assessment	3	1	0	4	4
		STR21016	Advanced Concrete Technology					
		STR21017	Construction Technology & Management					
		STR21018	Theory of Elastic Stability and Behaviour of Metal Structure					
6	Practical	STR22019	Structural Laboratory II	0	0	3	3	2
7	Sessional	STR25020	Seminar-II	0	2	0	2	1
Total				15	6	3	24	22

SEMESTER III

Sl. No.	Type	Course Code	Title of the Course	L	T	P	Contact Hours/ Week	Credits
1	Viva	STR25021	SE-Pre-submission Defense of Dissertation	0	0	0	0	4
2	Thesis	STR25022	SE-Pre-Dissertation	0	0	0	24	18
Total				0	0	0	24	22

SEMESTER IV

Sl. No.	Type	Course Code	Title of the Course	L	T	P	Contact Hours/ Week	Credits
1	Thesis	STR25023	SE-DISSERTATION	0	0	0	24	18
2	Viva	STR25024	SE-DEFENSE OF DISSERTATION	0	0	0	0	6
3	Viva	STR25025	SE-COMPREHENSIVE VIVA	0	0	0	0	4
Total				0	0	0	24	28

TOTAL CREDITS = 94