



MOHAMED SATHAK A.J COLLEGE OF ENGINEERING
Sponsored by Mohamed Sathak Trust
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)
Siruseri IT Park, Egattur, Chennai 603 103

M.E - STRUCTURAL ENGINEERING
ANNA UNIVERSITY – AFFILIATED INSTITUTIONS
REGULATION – 2017
CHOICE BASED CREDIT SYSTEM (CBCS)

PRINCIPAL
MOHAMED SATHAK A.J.COLLEGE OF ENGINEERING
34, Rajiv Gandhi Road (OMR), Siruseri, IT Park
Chennai-603 103.

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
M. E. STRUCTURAL ENGINEERING

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :

- I. To prepare students to excel in research and to succeed in Structural engineering profession through global, rigorous post graduate education
- II. To provide students with a solid foundation in mathematical, scientific and engineering fundamentals required to solve structural engineering problems
- III. To train students with good scientific and engineering knowledge so as to comprehend, analyze, design, and create novel products and solutions for the real life problems
- IV. To inculcate students in professional and ethical attitude, effective communication skills, teamwork skills, multidisciplinary approach, and an ability to relate structural engineering issues to broader social context.
- V. To provide student with an academic environment aware of excellence, leadership, written ethical codes and guidelines, and the life-long learning needed for a successful professional career

PROGRAMME OUTCOMES (POs):

On successful completion of the programme,

1. Graduates will demonstrate knowledge of mathematics, science and engineering.
2. Graduates will demonstrate an ability to identify, formulate and solve engineering problems.
3. Graduate will demonstrate an ability to design and conduct experiments, analyze and interpret data.
4. Graduates will demonstrate an ability to design a system, component or process as per needs and specifications.
5. Graduates will demonstrate an ability to visualize and work on laboratory and multidisciplinary tasks.
6. Graduate will demonstrate skills to use modern engineering tools, software and equipment to analyze problems.
7. Graduates will demonstrate knowledge of professional and ethical responsibilities.
8. Graduate will be able to communicate effectively in both verbal and written form.
9. Graduate will show the understanding of impact of engineering solutions on the society and also will be aware of contemporary issues.
10. Graduate will develop confidence for self education and ability for life-long learning.



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Programme Educational Objectives	Programme Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
I	✓	✓		✓						
II					✓	✓	✓			
III				✓	✓	✓	✓			
IV							✓	✓	✓	
V		✓	✓						✓	✓

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			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
YEAR 1	SEM 1	Advanced Mathematical Methods	✓										
		Advanced Concrete Structures				✓	✓						
		Dynamics of Structures	✓	✓	✓		✓						
		Theory of Elasticity and Plasticity	✓	✓									
		Professional Elective I											
		Professional Elective II											
	SEM 2	Advanced Steel Structures			✓		✓					✓	
		Stability of Structures			✓		✓					✓	
		Earthquake Analysis and Design of Structures			✓	✓							
		Experimental Techniques			✓	✓	✓		✓			✓	
		Finite Element Analysis of Structures	✓						✓			✓	
		Professional Elective III											
		Professional Elective IV											
		Advanced Structural Engineering Laboratory			✓		✓	✓	✓				
Practical Training I (2 weeks)					✓			✓	✓		✓		
YEAR 2	SEM 1	Earthquake Analysis and Design of Structures											
		Professional Elective V											
		Professional Elective VI											
		Practical Training II (2 weeks)					✓			✓	✓	✓	
		Seminar									✓		
	Project Work (Phase I)			✓		✓			✓			✓	
	SEM 2	Project Work (Phase II)			✓		✓			✓			✓
		Practical Training III (2 weeks)					✓			✓	✓		✓

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Professional Electives (PE)

Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
Maintenance and Rehabilitation of Structures					✓	✓			✓	
Prefabricated Structures		✓	✓	✓					✓	✓
Offshore Structures		✓							✓	
Analysis and Design of Tall Buildings	✓	✓		✓		✓			✓	✓
Theory of Plates	✓			✓						
Matrix Methods for Structural Analysis	✓					✓				
Mechanics of Composite Materials		✓		✓	✓					
Industrial Structures		✓		✓						
Pre-stressed Concrete		✓		✓		✓			✓	✓
Wind and Cyclone Effects on Structures		✓		✓		✓			✓	✓
Nonlinear Analysis Structures			✓							
Design of Sub Structures	✓	✓		✓		✓			✓	✓
Optimization of Structures	✓					✓				
Design of Steel Concrete Composite Structures		✓		✓						
Design of Bridges		✓		✓		✓				
Design of Shell and Spatial Structures				✓		✓				
Computer Aided Analysis and Design	✓	✓	✓	✓	✓	✓				



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CURRICULA AND SYLLABI

SEMESTER I

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA5151	Advanced Mathematical Methods	FC	4	4	0	0	4
2.	ST5101	Advanced Concrete Structures	PC	3	3	0	0	3
3.	ST5102	Dynamics of Structures	PC	3	3	0	0	3
4.	ST5103	Theory of Elasticity and Plasticity	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Professional Elective II	PE	3	3	0	0	3
TOTAL				19	19	0	0	19

SEMESTER II

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ST5201	Advanced Steel Structures	PC	3	3	0	0	3
2.	ST5202	Stability of Structures	PC	3	3	0	0	3
3.	ST5203	Experimental Techniques	PC	3	3	0	0	3
4.	ST5204	Finite Element Analysis of Structures	PC	3	3	0	0	3
5.		Professional Elective III	PE	3	3	0	0	3
6.		Professional Elective IV	PE	3	3	0	0	3
PRACTICAL								
7.	ST5211	Advanced Structural Engineering Laboratory	PC	4	0	0	4	2
8.	ST5212	Practical Training I (2 weeks)	EEC	0	0	0	0	1
TOTAL				22	18	0	4	21



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SEMESTER III

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ST5301	Earthquake Analysis and Design of Structures	PC	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
3.		Professional Elective VI	PE	3	3	0	0	3
PRACTICAL								
4.	ST5311	Practical Training II (2 weeks)	EEC	0	0	0	0	1
5.	ST5312	Seminar	EEC	2	0	0	2	1
6.	ST5313	Project Work (Phase I)	EEC	12	0	0	12	6
TOTAL				23	9	0	14	17

SEMESTER IV

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
PRACTICAL								
1.	ST5411	Practical Training III (2 weeks)	EEC	0	0	0	0	1
2.	ST5412	Project Work (Phase II)	EEC	24	0	0	24	12
TOTAL				24	0	0	24	13

TOTAL NO. OF CREDITS: 70



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FOUNDATION COURSES (FC)

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA5151	Advanced Mathematical Methods	FC	4	4	0	0	4

PROFESSIONAL CORE (PC)

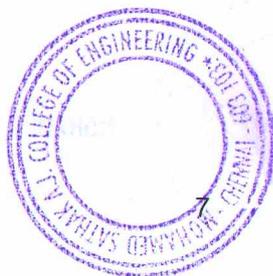
S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5101	Advanced Concrete Structures	PC	3	3	0	0	3
2.	ST5102	Dynamics of Structures	PC	3	3	0	0	3
3.	ST5103	Theory of Elasticity and Plasticity	PC	3	3	0	0	3
4.	ST5201	Advanced Steel Structures	PC	3	3	0	0	3
5.	ST5202	Stability of Structures	PC	3	3	0	0	3
6.	ST5203	Experimental Techniques	PC	3	3	0	0	3
7.	ST5204	Finite Element Analysis of Structures	PC	3	3	0	0	3
8.	ST5211	Advanced Structural Engineering Laboratory	PC	4	0	0	4	2
9.	ST5301	Earthquake Analysis and Design of Structures	PC	3	3	0	0	3

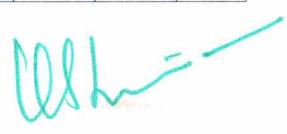
PROFESSIONAL ELECTIVES

SEMESTER I

ELECTIVE I & II

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5001	<u>Maintenance and Rehabilitation of Structures</u>	PE	3	3	0	0	3
2.	ST5002	<u>Prefabricated Structures</u>	PE	3	3	0	0	3
3.	ST5003	<u>Offshore Structures</u>	PE	3	3	0	0	3
4.	ST5004	Matrix Methods for Structural Analysis	PE	3	3	0	0	3




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SEMESTER II

ELECTIVE III & IV

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5005	<u>Theory of Plates</u>	PE	3	3	0	0	3
2.	ST5006	<u>Mechanics of Composite Materials</u>	PE	3	3	0	0	3
3.	ST5007	<u>Analysis and Design of Tall Buildings</u>	PE	3	3	0	0	3
4.	ST5008	<u>Industrial Structures</u>	PE	3	3	0	0	3
5.	ST5009	<u>Prestressed Concrete</u>	PE	3	3	0	0	3
6.	ST5010	<u>Wind and Cyclone Effects on Structures</u>	PE	3	3	0	0	3

SEMESTER III

ELECTIVE V & VI

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5011	<u>Nonlinear Analysis of Structures</u>	PE	3	3	0	0	3
2.	ST5012	<u>Design of Sub Structures</u>	PE	3	3	0	0	3
3.	ST5013	<u>Optimization of Structures</u>	PE	3	3	0	0	3
4.	ST5014	<u>Design of Steel Concrete Composite Structures</u>	PE	3	3	0	0	3
5.	ST5015	<u>Design of Bridges</u>	PE	3	3	0	0	3
6.	ST5016	<u>Design of Shell and Spatial Structures</u>	PE	3	3	0	0	3
7.	ST5017	<u>Computer Aided Analysis and Design</u>	PE	4	2	0	2	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5212	Practical Training I (2 weeks)	EEC	-	-	-	-	1
2.	ST5311	Practical Training II (2 weeks)	EEC	-	-	-	-	1
3.	ST5411	Practical Training III (2 weeks)	EEC	-	-	-	-	1
4.	ST5312	Seminar	EEC	2	0	0	2	1
5.	ST5313	Project Work (Phase I)	EEC	12	0	0	12	6
6.	ST5412	Project Work (Phase II)	EEC	24	0	0	24	12



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