DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
Salem (Autonomous)

M.E – Structural Engineering

Curriculum (I to IV Semesters)
&
(As per AU Regulation 2021)

Autonomous Regulations–2024

VISION:

To cultivate creative, globally competent, employable and disciplined computing professionals with the spirit of benchmarking educational system that promotes academic excellence, scientific pursuits, entrepreneurship and professionalism.

MISSION:

- To develop the creators of tomorrow's technology to meet the social needs of our nation
- To promote and encourage the strength of research in Engineering, Science and Technology
- To channel the gap between Academia, Industry and Society.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

- Become consultants in Structural Engineering and solve complex real-life issues related to the analysis, design and maintenance of structures under various environmental conditions
- Contribute to the enhancement of knowledge in Structural Engineering by performing quality research in institutions of international repute or Research organizations or Academia
- Practice their profession with good communication, leadership, ethics and social responsibility and formulate solutions that are technically sound, economically feasible, and socially acceptable

PROGRAM OUTCOMES (POs):

- An ability to independently carry out research/investigation and development work to solve practical problems
- An ability to write and present a substantial technical report/document
- 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's program

PROGRAM SPECIFIC OUTCOMES (PSOs):

- Knowledge of Structural Engineering discipline: Acquire in-depth knowledge of the Structural Engineering discipline, with an ability to evaluate, analyze and synthesize existing and new knowledge in structural design

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- Critical analysis of Structural Engineering issues and innovation: Critically analyze complex Structural Engineering problems, apply independent judgment for synthesizing information and make innovative advances in a theoretical, practical and policy context
- Conceptualization and evaluation of Engineering solutions to Structural Design issues: Conceptualize and solve Structural Engineering problems, evaluate potential solutions and arrive at technically feasible, economically viable and environmentally sound solutions with due consideration of health, safety, and socio-cultural factors

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CURRICULUM FOR I TO IV SEMESTER

CURRICULUMDETAILS

M.E.,-STRUCTURALENGINEERING

SEMESTER– I											
S.No	COURSE CODE	COURSETITLE	CATEGORY	PERIODS PERWEEK			TOTAL CONTACT PERIODS	CREDITS	MaximumMarks		
				L	T	P			CA	EE	TOTAL
	THEORY										
1	24TMA151	Advanced Mathematical Methods	FC	4	0	0	4	4	40	60	100
2	24TPT101	Theory of Elasticity and Plasticity	PCC	3	1	0	4	4	40	60	100
3	24TPT102	Structural Dynamics and Earthquake Engineering	PCC	3	1	0	4	4	40	60	100
4	24TPD105	Research Methodology and IPR	RMC	2	0	0	2	2	40	60	100
5	24EPTXXX (24EPT104)	Professional Elective I (Prefabricated Structures)	PEC	3	0	0	3	3	40	60	100
6	24APTXXX	Audit Course I*	AC	2	0	0	2	0	40	60	100
	PRACTICALS										
7	24LPT101	Advanced Construction Engineering and Experimental Techniques Laboratory	PCC	0	0	4	4	2	60	40	100
8	24LPT102	Technical Seminar	EEC	0	0	2	2	1	60	40	100
TOTAL				**17**	**2**	**6**	**25**	**20**	**360**	**440**	**800**

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SEMESTER–II											
S.No	COURSE CODE	COURSETITLE	CATEGORY	PERIODS PERWEEK			TOTALCONTACTPERIODS	CREDITS	MaximumMarks		
				L	T	P			CA	EE	TOTAL
	THEORY										
1	24TPT201	Advanced Steel Structures	PCC	3	1	0	4	4	40	60	100
2	24TPT202	Advanced Concrete Structures	PCC	3	1	0	4	4	40	60	100
3	24TPT203	Finite Element Analysis in Structural Engineering	PCC	3	0	0	3	3	40	60	100
4	24EPTXXX	Professional Elective II	PEC	3	0	0	3	3	40	60	100
5	24EPTXXX	Professional Elective III	PEC	3	0	0	3	3	40	60	100
6	24APTXXX	Audit Course II*	AC	2	0	0	2	0	40	60	100
	PRACTICALS										
7	24LPT201	Numerical and Finite Element Analysis Laboratory	PCC	0	0	4	4	2	60	40	100
8	24LPT202	Structural Design Studio	PCC	0	0	4	4	2	60	40	100
TOTAL				17	2	8	27	21	360	440	800

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SEMESTER–III											
S.No	COURSE CODE	COURSETITLE	CATEGORY	PERIODS PERWEEK			TOTALCONTACTPERIODS	CREDITS	MaximumMarks		
				L	T	P			CA	EE	TOTAL
	THEORY										
1	24EPTXXX	Professional Elective IV	PEC	3	0	0	3	3	40	60	100
2	24EPTXXX	Professional Elective V	PEC	3	0	0	3	3	40	60	100
3	24OPTXXX	Open Elective	OEC	3	0	0	3	3	40	60	100
	PRACTICALS										
4	24LPT301	Practical Training (4 Weeks)	EEC	0	0	0	0	2	60	40	100
5	24LPT302	Project Work I	EEC	0	0	12	12	6	60	40	100
TOTAL				9	0	12	21	17	240	260	500

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SEMESTER–IV											
S.No	COURSE CODE	COURSETITLE	CATEGORY	PERIODS PERWEEK			TOTALCONTACTPERIODS	CREDITS	MaximumMarks		
				L	T	P			CA	EE	TOTAL
	THEORY										
1	24S003	Entrepreneurship Development (T+L)	EEC	2	0	2	4	3	50	50	100
	PRACTICALS										
8	24LPT401	Project Work II	EEC	0	0	24	24	12	60	40	100
TOTAL				2	0	26	28	15	110	90	200
TOTAL CREDITS EARNED								73	1070	1230	2300

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PROFESSIONAL ELECTIVE COURSES: VERTICALS

S.No	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
SEMESTER I ; ELECTIVE I								
1	24EPT101	Non-linear Analysis of Structures	PEC	3	0	0	3	3
2	24EPT102	Structural Stability	PEC	3	0	0	3	3
3	24EPT103	Wind and Cyclone Effects on Structures	PEC	3	0	0	3	3
4	24EPT104	Prefabricated Structures	PEC	3	0	0	3	3
SEMESTER II ; ELECTIVE II								
1	24EPT201	Advanced Concrete Technology	PEC	3	0	0	3	3
2	24EPT202	Advanced Prestressed Concrete	PEC	3	0	0	3	3
3	24EPT203	Reliability Analysis of Structures	PEC	3	0	0	3	3
4	24EPT204	Design of Formwork	PEC	3	0	0	3	3
SEMESTER II ; ELECTIVE III								
1	24EPT205	Maintenance, Repair and Rehabilitation of Structures	PEC	3	0	0	3	3
2	24EPT206	Mechanics of Fiber Reinforced Polymer Composite Materials	PEC	3	0	0	3	3
3	24EPT207	Design of Steel-Concrete Composite Structures	PEC	3	0	0	3	3
4	24EPT208	Design of Masonry Structures	PEC	3	0	0	3	3
SEMESTER III ; ELECTIVE IV								
1	24EPT301	Design of Industrial Structures	PEC	3	0	0	3	3
2	24EPT302	Advanced Design of Foundation Structures	PEC	3	0	0	3	3
3	24EPT303	Optimization of Structures	PEC	3	0	0	3	3
4	24EPT304	Structural Health Monitoring	PEC	3	0	0	3	3
SEMESTER III ; ELECTIVE V								
1	24EPT305	Design of Offshore Structures	PEC	3	0	0	3	3
2	24EPT306	Performance of Structures with Soil-Structure Interaction	PEC	3	0	0	3	3
3	24EPT307	Design of Bridge Structures	PEC	3	0	0	3	3
4	24EPT308	Design of Shell and Spatial Structures	PEC	3	0	0	3	3

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OPEN ELECTIVE COURSES (OEC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	24MPC311	Blockchain Technologies	OEC	3	0	0	3	3
2	24OPC304	Deep Learning	OEC	3	0	0	3	3
3	24OPD001	Advanced Vibration and Noise Control Strategies	OEC	3	0	0	3	3
4	24MPD001	Additive Manufacturing Technologies and Process	OEC	3	0	0	3	3
5	24OEE301	Electric Vehicle Technology	OEC	3	0	0	3	3
6	24OPD002	New Product Development using Innovative Technologies	OEC	3	0	0	3	3
7	24OPT301	Principles of Sustainable Management	OEC	3	0	0	3	3
8	24OPD003	Micro and Small Business Management	OEC	3	0	0	3	3
9	24OPT302	Intellectual Property Rights	OEC	3	0	0	3	3
10	24OPT303	Ethical Management	OEC	3	0	0	3	3
11	24OPS316	IoT for Smart Systems	OEC	3	0	0	3	3
12	24OEE302	Renewable Energy Technology	OEC	3	0	0	3	3
13	24OPS308	Design Thinking	OEC	3	0	0	3	3
14	24OPC305	Internet of Things and Cloud	OEC	3	0	0	3	3
15	24OPS307	Medical Robotics	OEC	3	0	0	3	3
16	24OPT304	Environmental Sustainability	OEC	3	0	0	3	3
17	24OPT305	Textile Reinforced Composites	OEC	3	0	0	3	3
18	24OPT306	Nanocomposite Materials	OEC	3	0	0	3	3
19	24OPT307	IPR, Biosafety and Entrepreneurship	OEC	3	0	0	3	3
20	24OPS306	Embedded Automation	OEC	3	0	0	3	3

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AUDIT COURSES (AC)

S.No	COURSE CODE	COURSETITLE	CATEGORY	PERIODSPERWEEK			TOTALCONTACT PERIODS	CREDITS
				L	T	P		
1	24APT101	English for Research Paper Writing	AC	2	0	0	0	0
2	24APT102	Disaster Management	AC	2	0	0	0	0
3	24APT201	Constitution of India	AC	2	0	0	0	0
4	24APT202	நற்றமிழ் இலக்கியம்	AC	2	0	0	0	0

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SUMMARYOFCREDITDISTRIBUTION

SUMMARY OF CREDIT						
S.No	SUBJECT AREA	CREDITS PER SEMESTER				TOTAL CREDITS
		I	II	III	IV	
1	FC	4	-	-	-	**4**
2	PCC	10	15	-	-	**25**
3	PEC	3	6	6	-	**15**
4	RMC	2	-	-	-	**2**
5	OEC	-	-	3	-	**3**
6	EEC	1	-	8	15	**24**
7	Non Credit / Audit Course	-	-	-	-	-
8	**TOTAL CREDIT**	**20**	**21**	**17**	**15**	**73**

L	LECTURE
T	THEORY
P	PRACTICAL
FC	FOUNDATION COURSES
PCC	PROFESSIONAL CORE COURSES
RMC	RESEARCH METHODOLOGY AND IPR COURSES
PEC	PROFESSIONAL ELECTIVE COURSES
AC	AUDIT COURSES
EEC	EMPLOYABILITY ENHANCEMENT COURSES
OEC	OPEN ELECTIVE COURSES

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