

# PROGRAM STRUCTURE

## I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	192ST1T01	Theory of Elasticity	✓			Students are able to acquire skills related to designing of beam to support load enabling them to be employed for constructional sector. Example, Roof & bridges.
2	192ST1T02	Structural dynamics	✓			Students are able to acquire analyzing skills related to the behaviour of structure subjected to dynamic loading enabling them to be employed as civil engineers.
3	192ST1T03	Advanced Concrete Technology	✓			Students are able to acquire cognitive skills related to advanced concepts of properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed as structural engineers.
4	192ST1E03	Design of RCC Foundations		✓		Students are able to acquire skills related to designing of foundations based on soil properties which further influence the structural elements like beams, columns, slabs and foundations enabling them to be employed as designers and planners
5	192ST1E01	Matrix Analysis of Structures	✓			Students are able to demonstrate analytical skills to solve practical problems of trusses, beams & frames during designing of various constructional elements.
6	192ST1E02	Analytical & Numerical Method for Structural Engineering		✓		Students are able to acquire analytical skills related to designing of the structural elements like beams, columns, slabs and foundations enabling them to be employed as designers and planners

7	1925T1E05	Repair & Rehabilitation of Structures	✓			Students are able to acquire skills related to deterioration of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other deteriorated structures enabling them to be employed as engineers in related field.
8	1925T1E04	Bridge Engineering	✓			Students are able to acquire skills related to force applied by the flow of water and relating it to design of dynamics/cyclic loads in various types of bridges enabling them to be employed as design engineers.
9	1925T1E06	Advanced Reinforced Concrete Design	✓			Students are able to acquire skills related to designing of structural elements like beams, columns, slabs and foundations using advanced reinforced materials along with concrete enabling them to be employed as designers and planners
10	1925T1L01	Advanced Concrete Technology Laboratory		✓		Students are able to acquire technical skills related to properties of concrete, design and test the concrete useful in constructional activities
11	1925T1L02	Advanced Structural Engineering Laboratory		✓		Students are able to demonstrate technical skill of testing advanced composite materials, light weight structures and engineering optimization.

## II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneur ship	Remarks
12	192ST2T04	Finite Element Methods in Structural Engineering	✓			Students are able to demonstrate problem solving skills to analyze structural related problems and developing software development programs enabling them to be employed in various industries.
13	192ST2T05	Theory of Plates and Shells	✓			Students are able to acquire skills related to structural action against in stronger, thinner & lighter in structural members enabling them to be employed as civil engineers.
14	192ST2E07	Stability of Structures	✓			Students are able to acquire skills related to various aspects of soil mechanics, to ensure the safety of structures against collapse enabling them to be employed as designers of various constructional elements.
15	192ST2E08	Advanced Steel Design	✓			Students are able to acquire skills related to properties of steel structures and designing of connections between the structural members at industrial, offshore, high rise building enabling them to be employed for designing of building units.
16	192ST2E09	Analysis of offshore Structures	✓			Students are able to acquire skills related to properties of structural members when subjected to seismic loads and designing earthquake resistant structures enabling them to be employed in civil industry.
17	192ST2E10	Earthquake Restant Design of Buildings	✓			Students are able to acquire skills related to properties of structural members when subjected to seismic loads and designing earthquake resistant structures enabling them to be employed in civil industry.
18	192ST2E11	Precast and Prefabricated Structures		✓		Students are able to acquire skills related to properties of structural members related to precast and prefabricated structures .



19	192ST2E12	Earth Retaining Structures	✓			Students are able to acquire skills related to various aspects of properties of structural members when subjected to seismic loads and designing earthquake resistant structures enabling them to be employed as structural engineers.
20	192ST2L03	Computer Aided Design Laboratory		✓		Students are able to demonstrate technical skill of reducing manual drawing and related problems in designing and planning of constructional activities.
21	192ST2L04	Structural Design Laboratory		✓		Students are able to demonstrate technical skill of designing of various structural elements.
22	192ST2P01	Mini Project With Seminar		✓		Students are able to demonstrate technical skills related to handling real time projects
23	192MC1A01/192MC2A01	English for Research Paper Writing		✓		Students are able to demonstrate writing skills related to various research articles
24	192MC1A02/192MC2A02	Disaster Management		✓		Students are able to acquire skills related to preparedness towards various disasters in the environment.
25	192MC1A03/192MC2A03	Sanskrit for Technical Knowledge				
26	192MC1A04/192MC2A04	Value Education			✓	Students are able to acquire skills related to various values and ethics to be inculcated during maintenance of standards in the constructional sector of the society.
27	192MC1A05/192MC2A05	Constitution of India		✓		Students are able to familiarize themselves with various acts and regulations related to societal activities helping them in handling real time problems.
28	192MC1A06/192MC2A06	Pedagogy Studies		✓		Students are able to acquire skills related to various teaching styles of concepts learnt by them in their curriculum.
29	192MC1A07/192MC2A07	Stress Management by Yoga				
30	192MC1A08/192MC2A08	Personality Development through Life Enlightenment Skills	✓			Students are able to acquire skills related to preparedness to handle situations in day to day life enabling them to help in employment in various sectors.
31	192MC1A09/192MC2A09	Soft Skills		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language, formal written communication in the organizations.

## III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
32	192ST3E13	Design of Pre-stressed Concrete structures	✓			Students are able to acquire skills related to bridge designing and metro constructions enabling them to be employed in structural field of constructional activities.
33	192ST3E14	Structural Health Monitoring	✓			Students are able to acquire skills related to damage detection and characterization strategy for engineering structures helping in performance enhancement in existing structures enabling them to be employed as structural engineers
34	192ST3E15	Industrial Structures	✓			Students are able to acquire various technical skills in the construction of different industrial structures enabling them to be employed in various industries.
35	19STMOOC1	MOOCS-I*		✓		Students are able to demonstrate technical skill of principles learnt in online courses helping in acquainting them with multidisciplinary knowledge apart from their curriculum
36	---	MOOCs-II #		✓		Students are able to demonstrate technical skill of principles learnt in online courses helping in acquainting them with multidisciplinary knowledge apart from their curriculum.
37	192PD3O01	Renewable Energy Technologies		✓		Students are able to acquire skills related to solar, wind and bio-mass energy resources and conversion principles and techniques of various renewable resources.
38	192PD3O02	Hybrid Electric Vehicles	✓			Students are able to acquire skills related to various types hybrid vehicles operations and control enabling the students to get employed in EV sector.
39	192PD3O03	Energy Audit and conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance activities, creates the trust among the students to have own company.
40	192PD3O04	Neural Networks and Fuzzy				

		Logic				
41	192PD3O05	Industrial Safety			✓	This course helps to enable the students learn about environmental factors related to human, to enrich the students with anthropometric principles for work space design and to make the students to acquire knowledge on advance effects of air pollution, safety regulations and standards.
42	192PD3O06	Composite Materials	✓			Students are able to acquire skills related to various materials of different structures enabling them to be employed as structural engineers.
43	192TE3O01	Energy Systems		✓		Students are able to acquire skills related to the importance of energy management in the functional area and carrying out budgeting and risk analysis of projects enabling them to be employed in Energy sector.
44	192TE3O02	Fuels and Combustion	✓			Students are able to acquire skills in analysing various fuels and the effect of combustion of fuels on environment enabling them to be employed in automotive, aerospace sectors.
45	192TE3O04	IC Engines	✓			Students are able to acquire skills related to the engine performance by using turbo charging and super charging and enabling them to be employed in automotive industries.
46	192TE3O05	Automotive Technology	✓			Students are able to acquire skills related to the concepts of transmission system, various braking systems and suspension systems enabling them to be employed in automotive sector.
47	192ES3O01	Embedded System Design				
48	192ES3O02	Digital System Design				
49	192ES3O03	Programming Languages for Embedded Systems				
50	192ES3O04	Sensors & Actuators	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of sensors and actuators enabling them to be employed for designing and manufacturing of electrical/ electronic systems
51	192VD3O01	Physical Design Automation	✓			Students are able to acquire knowledge related to partitioning, placement and routing techniques in a physical design,*enabling them to be employed for designing and manufacturing and utilisation of ICs.
52	192VD3O02	VLSI Technology				



53	192VD3O03	Nano-electronics	✓			Students are able to acquire knowledge related to different nano electronics building blocks such as carbon nano tubes, quantum dots, nano wires enabling them to be employed in the in industries.
54	192CS3O01	Python Programming (CSE)				
55	192CS3O02	Principles of Cyber Security		✓		Students are able to learn various technical skills involved in managing cyber security and avoiding problematic situations in present day world.
56	192CS3O03	Internet of Things		✓		Students will be able to demonstrate various technical dskills involved in relating to physical objects with sensors and communication between devices and the cloud used in day to day life.
57	192CS3O04	Machine Learning				
58	192CS3O05	Artificial Intelligence				
59	192CS3O06	Deep Learning				
60	192PE3O01	Introduction to Petroleum Engineering		✓		Students are able to demonstrate technical skill of characterizing different streams, modelling and analysis of process in Petroleum Industry.
61	192PE3O02	Process Intensification				Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
62	192PE3O03	Fundamentals of Liquified Natural Gas		✓		Students are able to acquire skills related to various aspects of different crude behaviour enabling them to be employed as process and transport engineers.
63	192PE3O04	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures, modelling and analysis of production.
64	192PE3O06	HSE in Petroleum Industry			✓	Students are able to apply the knowledge of safety management enabling them to become an entrepreneur in any domain of their choice.
65	192ST3P02	Dissertation-I/ Industrial Project		✓		Students are able to demonstrate technical skill of principles learnt in various courses in their curriculum .

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
66	192ST4P03	Dissertation-II			✓	Students will be able to demonstrate problem identification, analysis, design solutions or applications in structural engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
TOTAL		66	26	23	5	



Program Coordinator



Head of the Department  
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