

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	191HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T02	Engineering Physics				
4	191ES1T01	Programming for Problem Solving using C	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
5	191HS1L01	Communicative English Lab-I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth

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6	191BS1L01	Engineering Physics Lab				
7	191ES1L01	Programming for Problem Solving using C Lab	✓			Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry.
8	191ES1L02	Basic Engineering Workshop		✓		Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.
9	191MC1A01	Environment Science				
10	191MC1A02	Constitution of India		✓		This subject helps the student to demonstrate their technical skills for constitution making and its importance for building a democratic India, to make them understand the executive, legislative and judiciary system.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T05	Partial Differential Equations and Vector Calculus		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations, vector differentiation, vector integration and their applications in various engineering disciplines.
12	191BS2T06	Chemistry of Materials				
13	191ES2T02	Engineering Graphics and Design		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
14	191ES2T03	Essential Electrical and Electronics Engineering	✓			Students are able to acquire technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in logging industry.
15	191ES2T04	Engineering Mechanics	✓			Students are able to acquire skills related to principles of friction, kinetics, kinematics, resolving forces, trusses etc which forms the crux of design sciences.
16	191HS2L02	Communicative English Lab-II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth

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17	191BS2L04	Engineering Chemistry Lab				
18	191ES2L03	Essential Electrical and Electronics Engineering Lab		✓		This subject helps the student to demonstrate their technical skills by analyzing various electrical networks, knowing the operation of Dc generators, analyzing the performance of single-phase transformers and 3-phase induction motors. This will create skills among student so that wherever they will find these types of machines their deal with their complexities.
19	191ES2L07	Mechanical Engineering Workshop		✓		Students are able to acquire skills related to basic fabrication processes and assembling and disassembling of machine parts.
20	191PR2P01	Engineering Exploration Project		✓		Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171ES3T13	Metallurgy & Materials Science	✓			Students are able to acquire skills related to mechanical behaviour of materials under different loading conditions enabling them to be employed as a materials engineer.
22	171ES3T11	Mechanics of Solids	✓			Students are able to acquire skills related to bending and shear stresses for beams of various loads and supports enabling them to be employed as a stress analysis engineer in core design industries.
23	171ES3T12	Thermodynamics	✓			Students are able to acquire skills related to various thermodynamic systems and power cycles and enabling them to be employed as Thermodynamic engineer.
24	171HS3T04	Managerial Economics and Financial Analysis			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
25	171ES3T14	Fluid Mechanics & Hydraulic Machinery	✓			Students are able to acquire skills related to concepts of fluid statics, dynamics and performance characteristics of turbines and pumps and enabling them to be employed as a fluid engineer.

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26	171ME3T01	Computer Aided Engineering Drawing Practice		✓		Computer Aided Drawing practice is designed to improve the skills of the students as they will be able to draft packages and commands for computer aided drawing and modelling. Students will be able to gain the skills to draw complex drawing by using these tools.
27	171ES3L05	Basic Electrical and Electronics Engg. Lab		✓		Electrical and electronics lab helps the students to improvise their technical skills as they get to know how to determine the efficiency of dc shunt, Single phase transformers. This subject also helps to obtain the characteristics and performance of Dc shunt motors. This subject helps student to solve the Dc motor and transformers related problems at the mine site.
28	171ES3L06	Mechanics of Solids and Metallurgy Lab		✓		Students are able to acquire skills related to testing of material behavior under various direct loads, Microstructure of metals Non metals.
29	171HS3A09	Professional Ethics & Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.
30	171HS3A10	Employability skills-I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171ME4T02	Kinematics of Machinery	✓			Students are able to acquire skills related to the concepts of kinematics of machine elements, chains and mechanisms and enabling them to be employed in mechanical design field.
32	171ME4T03	Thermal Engineering -I	✓			Students are able to acquire skills related to working of Incentives, Compressors and enabling them to be employed in Thermal Power Plants.
33	171ME4T04	Production Technology	✓			Students are able to acquire skills related to various manufacturing processes, different joining techniques and bulk metal deforming processes.
34	171ME4T05	Design of Machine members-I	✓			Students are able to acquire skills related to design of machine members and enabling them to be employed in design engineering field.
35	171ME4T06	Industrial Engineering and Management			✓	Students are able to demonstrate Competency related to managerial skill set and enable them to be an entrepreneur.

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36	171ME4T07	Machine Drawing		✓		Students are able to acquire skills related to machine components, part drawings and assembly drawings enabling them to be placed in mechanical design and drafting industries
37	171HS4T08	Intellectual Property rights and patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
38	171ME4L01	Production Technology Lab		✓		Students are able to acquire skills related to various manufacturing process, different joining techniques and bulk metal deforming processes.
39	171ES4L07	Fluid mechanics and Hydraulic Machinery Lab		✓		Students are able to demonstrate technical skills in working with turbines, pumps and understand flow behaviour at various sections of harnessing energy from alternate energy sources.
40	171HS4A11	Employability Skills -II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	171ME5T08	Dynamics of Machinery	✓			Students are able to acquire skills in analyzing the machines in dynamic conditions and enabling them to be employed in automotive and aerospace industries.
42	171ME5T09	Metal Cutting and Machine Tools	✓			Students are able to acquire skills and fundamental knowledge on principles of material removal processes, enabling them to be employed in manufacturing industries
43	171ME5T10	Thermal Engineering -II	✓			Students are able to acquire skills on basic knowledge of rankine cycle, boilers, chimneys, gas turbines and enabling them to be employed in thermal power plants.
44	171ME5T11	Design of Machine Members-II	✓			Students are able to acquire skills related to design of machine members and enabling them to be employed in design engineering field.
45	171ME5T12	Operations Research	✓			Students are able to acquire analytical skills in finding optimal solutions of different models using various decision making techniques.

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46	171ME5E01	Automobile Engineering	✓			Students are able to acquire skills related to the fundamental working principles and technologies and enabling them to be employed in automotive sector.
47	171ME5E02	Mechanical Vibrations	✓			Students are able to acquire skills related to analysis of periodic responses of a vibrating system without and with damping systems.
48	171ME5E03	Additive Manufacturing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing industries
49	171HS5T06	Employability Skills -III	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
50	171ME5L02	Theory of Machines Lab		✓		Students are able to acquire skills related to analysis of mechanisms for a specified type of motion in machine.
51	171ME5L03	Thermal Engineering Lab		✓		Students are able to acquire analytical skills on working and performance of Incentives and Reciprocating compressors.
52	171ME5S01	MOOCS-I		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
53	171ME6T13	Heat Transfer	✓			Students are able to acquire analytical skills on the concept of heat transfer through conduction, convection, radiation and performance of heat exchangers and enabling them to be employed in piping design industries.
54	171ME6T14	Refrigeration and Air Conditioning	✓			Students are able to acquire skills on working of refrigeration and air conditioning and enabling them to be employed in refrigeration and air conditioning industries.
55	171ME6T15	Metrology and Instrumentation	✓			Students are able to acquire skills related to the measurement of linear and angular measuring instruments, working of measuring instruments and control systems.
56	171ME6E04	Robotics	✓			Students are able to acquire skills to understand the concepts of robot kinematics, Dynamics and trajectory planning enabling them to be employed in robot manufacturing companies

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57	171ME6E05	Design for Manufacturing	✓			Students are able to demonstrate technical skills in design of manufacturing through consideration of cost, quality and reliability.
58	171ME6E06	Non-Destructive Evaluation	✓			Students are able to acquire skills in characterizing the material behavior through different Non-destructive evaluation methods and enabling them to be employed in automotive and aerospace industries.
59	171ME6E07	Unconventional Machining Processes	✓			Students are able to acquire skills on modern machining processes and working principles enabling them to be employed in machining industries
60	171ME6E08	Industrial Hydraulics and Pneumatics	✓			Students are able to demonstrate problem solving skills in analyzing the concepts of hydraulic systems, pneumatic systems and its components.
61	171ME6E09	Quality & Reliability Engineering	✓			Students are able to acquire skills in improving the quality and reliability of systems and enabling them to be employed in quality control and quality assurance fields
62	171HS6T07	Employability Skills-IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
63	171ME6L04	Machine Tools Lab		✓		Students are able to acquire skills to operate various machine tools. enabling them to be employed in Manufacturing sector.
64	171ME6L05	Heat Transfer Lab		✓		Students are able to demonstrate problem solving skills in calculating the heat transfer coefficient through conduction, convection and radiation.
65	171ME6L06	Metrology & Instrumentation Lab		✓		Students are able to acquire technical skills in measuring linear and angular measurements and calibrate pressure gauge, Temperature detectors and LVDT and enabling them to be employed in material characterization labs and various manufacturing industries.
66	171ME6S02	MOOCS-II		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
67	R1641031	Mechatronics	✓			Students are able to demonstrate technical skills to measure the load, displacement and temperature using analogue and digital sensors.
68	R1641032	CAD/CAM	✓			Students are able to demonstrate problem solving skills for improving productivity and enhancing the best practices of the company.
69	R1641033	Finite Element Methods	✓			Students are able to acquire skills in solving differential equations in fields of structural analysis, heat transfer and fluid flow and enabling them to be employed in mechanical design industries as a FEA-Engineer
70	R1641034	Power Plant Engineering	✓			Students are able to acquire skills in analyzing the power plant economics and environmental considerations enabling them to be employed in power sector.
71	R164103A	Computational Fluid Dynamics	✓			Students are able to acquire skills related to understand the basics of computational fluid dynamics (CFD) and compare finite difference and finite volume methods applied in CFD and enabling them to be employed as Computational fluid dynamics engineer.
72	R164103B	Condition Monitoring	✓			Students are able to acquire skills in detecting the faults in the systems by monitoring several parameters to prevent major failures.

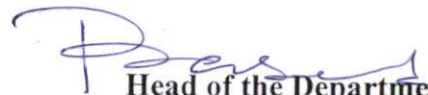
S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
73	R164103C	Additive Manufacturing	✓			Students are able to acquire skills related to the knowledge of Additive manufacturing (AM) principles and the knowledge of liquid, solid and powder based rapid prototyping systems and enabling them to be employed in Additive manufacturing industries.
74	R164103D	Advanced Materials	✓			Students are able to acquire skills in synthesis and characterization of advanced materials.
75	R164103E	Design for Manufacture	✓			Students are able to demonstrate technical skills in design of manufacturing through consideration of cost, quality and reliability.
76	R164103F	Gas Dynamics and Jet Propulsion	✓			Students are able to acquire skills in analyzing the behavior of isentropic flow of ideal gases and enabling them to be employed in thermal power plants.
77	R1641037	CAD/CAM Lab		✓		Students are able to acquire skills related to fundamental knowledge on various analytical tools for engineering simulation and enabling them to be employed in areas of computer aided design
78	R1641038	Mechatronics Lab		✓		Students are able to demonstrate technical skills to measure the load, displacement and temperature using analogue and digital sensors.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
79	R1642031	Production Planning and Control	✓			Students are able to acquire skills in improving the concepts of production planning and production control techniques enabling them to be employed in manufacturing industries.
80	R1642032	Unconventional Machining Processes	✓			Students are able to acquire skills on modern machining processes and working principles enabling them to be employed in machining industries
81	R1642033	Automobile Engineering	✓			Students are able to acquire skills related to the fundamental working principles and technologies and enabling them to be employed in automotive sector.
82	R164203A	Thermal Equipment Design	✓			Students are able to acquire skills in analyzing the performance of different types of heat exchangers, vaporizer, evaporators enabling them to be employed in pipe design companies.
83	R164203B	Non-Destructive Evaluation	✓			Students are able to acquire skills in characterizing the material behavior through different Non-destructive evaluation methods and enabling them to be employed in automotive and aerospace industries.

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84	R164203C	Quality & Reliability Engineering			✓	Students are able to acquire skills in improving the quality and reliability of systems and enabling them to be employed in quality control and quality assurance fields
85	R1642055	Seminar	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in mining engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
86	R1642036	Project		✓		Students will be able to demonstrate problem identification, analysis, design solutions or applications in mechanical engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
Total		86	49	28	4	


Program Coordinator


Head of the Department

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