PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	201HS1T01	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	201BS1T01	Differential equations and Linear algebra		~		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.
3	201BS1T02	Engineering Physics				
4	201ES1T03	Essential Electrical and Electronics Engineering		~		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 machine their deal with their complexities.
5	201ES1T05	Engineering Graphics		1		This subject helps the student to demonstrate technical skills as they have knowledge about engineering drawing and AutoCAD software for orthographic projections and isometric projection.
6	201HS1L01	Communicative English Lab	1			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.
7	201BS1L01	Engineering Physics Lab				
8	201ES1L03	Essential Electrical and Electronics Engineering Lab		*		This subject helps the student to demonstrate technical skills as they are able to analyze electrical networks using network theorems, performance of AC and DC Machines, diode characteristics and its application and simulation of diode and transistor.
9	201MC1T01	Environmental Science				A Company of the Comp

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	201BS2T05	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.
11	201BS2T08	Chemistry of Materials				
12	201ES2T06	Engineering Mechanics		1	,	Students are able to acquire skills related to principles of friction, kinetics, kinematics, resolving forces, trusses etc which forms the crux of design sciences.
13	201ES2T08	Programming for Problem Solving Using C	1	8	1 10	Students are able to acquire skills related to basic programming using C, enabling them to be employed as software developers.
14	201ES2L07	Engineering Workshop		1		Engineering 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.
15	201ES2L12	Computer Aided Drafting Lab		✓		Students are able to acquire skills related to drafting of mechanical components/assemblies through AUTOCAD software enabling them to be employed as a design engineer.
16	201HS2L02	Professional Communications Skills Lab		√		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.
17	201BS2L05	Engineering Chemistry Lab				
18	201ES2L10	Programming for Problem Solving Using C Lab	√	=	lei:	Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry.
19	201MC2T02	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.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	201BS3T14	Numerical Methods and integral transforms		*		Students are able to demonstrate problem solving skills by modelling physical phenomenon using Numerical Methods and integral transforms in various engineering disciplines.
21	201PT3T01	Principles of Geology for Petroleum Engineers		4		Students are able to demonstrate technical skill of characterizing different rocks, modelling and analysis of model of structures.
22	201PT3T02	Material Balance and Energy		✓		Students are able to demonstrate Problem solving skills to analyze Material Balance relations and performance characteristics of it.
23	201PT3T03	Petroleum Exploration	√			Students are able to demonstrate technical skill of characterizing different exploration methods, modelling and analysis of structures.
24	201PT3T04	Fluid Mechanics for Petroleum Engineers		1		Students are able to acquire skills related to various aspects of various fluid flow behaviour and designing of fluid flow enabling them to be employed as production engineers.
25	201PT3L01	Principles of Geology for Petroleum Engineers Lab		√		Students are able to demonstrate technical skill of characterizing different rocks, modelling and analysis of model of structures.
26	201PT3L02	Fluid Mechanics for Petroleum Engineers Lab		~	*	Students are able to acquire skills related to various aspects of various fluid flow behaviour and designing of fluid flow enabling them to be employed as production engineers.
27	201PT3L03	Mathematical Methods Lab	1			Students are able to acquire skills related to various aspects of various mathematical Methods enabling them to be employed as production engineers.
28	201SC3L10	Skill oriented course -Industry Exploration Project	1		275. s.	Students are able to demonstrate technical skill of various exploration elements using equipment's and software's

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
29	201ES4T20	Mechanical and Materials Science and Engineering	✓			Students are able to acquire skills related to various aspects of material design enabling them to be employed as material designers
30	201BS4T17	Complex Variables and Statistical Methods		*		Students are able to demonstrate problem solving skills by analytical properties of functions of complex variables and their applications and also about random variables, sampling theory, test of hypothesis.
31	201PT4T05	Petroleum Geology	1		*	Students are able to acquire skills related to various aspects of different structures, traps, stratigraphy's enabling them to be employed as petroleum and sedimentary geologists.
32	201PT4T06	Heat Transfer Operations		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using heat flow systems, study of temperature behaviour in various engineering disciplines.
33	201HS4T06	Management and Organizational Behavior		✓		
34	201ES4L16	Mechanical and Materials Science and Engineering Lab		✓		Students are able to acquire skills related to various aspects of material design enabling them to be employed as material designers
35	201PT4L04	Heat Transfer Operations Lab		✓		Students are able to acquire skills related to various aspects of heat flow systems, study of temperature behaviour in petroleum systems enabling them to be employed as production engineers.
36	201PT4L05	Petroleum Geology Lab	✓		(P	Students are able to acquire skills related to various aspects of different geological structures enabling them to be employed as geologists.
37	201SC4L21	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
38	191PT5T08	Instrumentation and Process Control		~		Students are able to demonstrate technical skill of characterizing different controllers, modelling and analysis of control valves.
39	191PT5T09	Well Logging and Mud Logging		✓		Students are able to demonstrate technical skill of characterizing different logging tools, modelling and analysis of formations.
40	191PT5T10	Drilling Technology		✓		Students are able to demonstrate technical skill of characterizing different drilling methods, modelling and analysis of well bore.
41	191PT5T11	Thermodynamics for Petroleum Engineers				Students are able to demonstrate technical skill of characterizing different Thermodynamics, modelling and analysis of production process.
42	191PT5E03	Well Engineering and Design		✓		Students are able to demonstrate technical skill of characterizing different well designs, modelling and analysis of well bore.
43	191PT5E02	Pipeline Engineering		✓		Students are able to demonstrate technical skill of characterizing different material behaviours, modelling and analysis of pipeline operations.
44	191PT5E01	Natural Gas Engineering and Processing		✓		Students are able to demonstrate technical skill of characterizing different Separation Techniques, modelling and analysis of distribution.
45	191CE5O01	Basic Concrete Technology				Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
46	191EE5O01	Electrical Safety				
47	191EE5O02	Electrical Materials				
48	191EE5O03	Basic Electrical Measurements				
49	191ME5O01	Renewable Energy Sources				
50	191ME5O02	Fundamentals of Mechanical Engineering		~		Students are able to acquire skills related to concepts of fundamentals of thermal, manufacturing and design fields in mechanical engineering.

51	191ME5O03	Supply Chain Management	4		students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service based companies
52	191ME5O04	3D Printing	*		Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
53	191ME5O05	Entrepreneurship Development and Incubation	4		Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
54	191EC5O01	Signals & Systems		~	Students are able to acquire skills related to mathematics of signal porcessing that aids them in getting jobs in industries that use X-rays, MRIs and CT scans, allowing medical images to be analyzed and deciphered by complex data processing techniques.
55	191EC5O02	Digital Electronics and Logic Design	<i>y</i>		Students are able to acquire skills related to design, and synthesize basic of digital ckts enabling them to be employed for designing and manufacturing of electronic equipment.
56	191EC5O03	Semi conductor devices	*		Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
57	191CS5O01	Data Structures	1	1.0	Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers
58	191CS5O02	Object Oriented Programming through C++	1		Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using C++, enabling them to be employed as software developers.
59	191CS5O03	Java Programming	~		Students are able to acquire skills related to java programming enabling them to be employed as software developers.
60	191CS5O04	R Programming	1		Students are able to acquire skills related to R commands, Graphical representation of data sets, and visualization Techniques and also enabling them to be employed for Data analyst
61	191IT5O01	Data Base Management Systems	·		Students are able to acquire skills related to Writing SQL Queries, implement normalization techniques and apply transaction processing techniques enabling them to be employed as a Database Administrator.

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62	191IT5O02	Computer Graphics	√		Students are able to acquire related 2D,3D graphical representations and basic graphic programming using openGL enabling them to employed as graphic designer.
63	191MI5O01	Overview of Mining	✓		students to understand atmosphere and mine atmosphere conditions, heat and humidity levels in mines. It also help students to know about standards planning and layout.
64	191PT5O01	Process Intensification in Petroleum Industry		1	Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
65	191PT5O02	Fundamentals of Petroleum Industry			Students are able to demonstrate technical skill of characterizing different streams, modelling and analysis of operations.
66	191AG5O01	Basic Crop Production Practices	✓		Students are able to acquire skills related to production practices and management techniques of agricultural and horticultural crops enabling them to be employed as agricultural field manager
67	191PT5L04	Drilling Fluids Lab		✓	Students are able to acquire skills related to different aspects of various mud behaviour enabling them to be employed as mud engineers.
68	191PT5L05	Instrumentation, Process Dynamics and Control Lab		✓	Students are able to acquire skills related to various aspects of different controllers behaviour enabling them to be employed as production engineers.
69	191ES5T16	Employability Skills - III	✓		Students are able 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.
70	191PR5P01	Socially Relevant Project	4		Students will be able to demonstrate problem identification, analysis, design solutions or applications in petroleum technology domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
71	191PT6T12	Petroleum Refinery and Petrochemical Engineering		*		Students are able to demonstrate technical skill of characterizing different heaters, treaters, distillation columns, modelling and analysis of refinery.
72	191PT6T13	Petroleum Production Engineering		✓		Students are able to demonstrate technical skill of characterizing different fluid flow properties, modelling and analysis of production.
73	191PT6T14	Petroleum Reservoir Engineering-I		✓		Students are able to demonstrate technical skill of characterizing different rock properties, modelling and analysis of reservoir.
74	191PT6E06	Well Completions, Testing and Services		✓		Students are able to demonstrate technical skill of characterizing different wells, modelling and analysis of completions.
75	191PT6E05	Operational and Maintenance of Pipelines		✓		Students are able to demonstrate technical skill of characterizing different pipe operations, modelling and analysis of pipelines.
76	191PT6E04	Fundamentals of Liquefied Natural gas		✓		Students are able to demonstrate technical skill of characterizing different gas components, modelling and analysis of liquification's.
77	191PT6E09	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing different unconventional resources, modelling and analysis of reserves.
78	191PT6E08	Storage and Transportation of Crude oil and Natural gas		~		Students are able to demonstrate technical skill of characterizing different Crude oil and Natural gas, modelling and analysis of distribution.
79	191PT6E07	Advanced Separation Techniques		· ·		Students are able to demonstrate technical skill of characterizing different Separation Techniques, modelling and analysis of distribution.
80	191CE6O02	Disaster Management		✓		Students are able to acquire skills related to interpretation of various disasters in the environment and prepares one to prevent, face and combat them enabling them to be employed as managers in various industries
81	191EE6O04	Energy Audit and Conservation Management			1	Students are able to focuses on the loss and profit studies and other company maintenance actives, creates the intrust among the students to have own company.

82	191EE6O05	Non Conventional Energy resources		1		Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
83	191EE6O06	Instrumentation		~		Students are able to acquire skills related to design, analyze and evaluate the performance of instrumentation systems enabling them to be employed for designing and manufacturing of measuring instruments, biomedical instrumentation etc.
84	191ME6O06	Solar Energy Utilisation		1		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 industries
85	191ME6O07	Basic Thermodynamics and Heat Transfer		~		Students are able to acquire skills to understand the concepts of bio medical instrumentation and can be employed in fabrication of bio medical instruments.
86	191ME6O08	Introduction to Hydraulics and Pneumatics		✓		Students are able to demonstrate problem solving skills in analysing the hydraulics and pneumatic systems
87	191ME6O09	3D Printing		1		Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
88	191ME6O06	Robotics		1		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
89	191ME6O09	Management Science			· ·	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
90	191ME6O12	Entrepreneurship Development and Incubation			1	Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and enabling them to be employed as a project engineer in various organizations.
91	191ME6O07	Biomedical Instrumentation	e e	1		Students are able to acquire skills to understand and apply the biomedical instrumentation enabling them to be employed in various organizations, which developed and fabricate biomedical instruments like ECG etc.
92	191ME6O08	ECAD Tools	✓			Students are able to acquire skills related to ECAD tools, enabling them to be employed as Design engineers
93	191CS6O05	Python Programming	1			Students are able to acquire skills related to python programming, enabling them to be employed as software developers

94	191CS6O06	Operating Systems		✓		Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities
95	191CS6O07	Web Technologies		✓		Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
96	191CS6O08	Cyber Security		✓		Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.
97	191CS6O09	AR / VR		*		Students are able to acquire skills related to Design, create, and integrate audio, visual, and interactive elements into a comprehensive immersive experience enabling them to be employed as app developers.
98	1911T6O03	Computer Organization		~		Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
99	191IT6O04	AI Tools & Techniques	1			Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
100	191IT6O05	Robotic Process Automation		✓		Students are able to demonstrate technical skill to develop applications using UIPath Programming and extraction techniques to deploy robot configurations
101	191MI6O02	Industrial Safety Practices			✓	Students are able 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.
102	191MI6O03	Electrical Equipment's in Mines		1		Students are able to demonstrate their technical skills as it helps the students to understand standards of lighting in different working areas, AC and Dc motors and its maintenance, earthling methods and applicability. This subject will guide the students of mining to be self sufficient for the electrical related problems in mines.
103	191PT6O03	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing different unconventional resources, modelling and analysis of reserves.
104	191PT6O04	Asset Management			~	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.

B. Tech Petroleum Technology

105	191PT6L06	Petroleum Reservoir Engineering Lab		4	Students are able to acquire skills related to design, synthesize and evaluate the performance of process equipment's enabling them to be employed for designing and evaluation of fluid behaviour in production.
106	191PT6L07	Petroleum Analysis Lab	✓		Students are able to acquire skills related to various aspects of different crude behaviour enabling them to be employed as refining engineers.
107	191ES6T17	Employability Skills -	√		Students are able 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.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
108	171PT7T15	Integrated Asset Management and Petroleum Economics			~	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
109	171PT7T16	Petroleum Reservoir Engineering - II		✓		Students are able to demonstrate technical skill of characterizing different well fluid behaviours, modelling and analysis of reservoir for flow test.
110	171PT7T17	IOR and EOR Techniques		✓		Students are able to demonstrate technical skill of characterizing different crude oils, modelling and analysis of reservoir for recovery.
111	171PT7T18	Oil and Gas Processing Plant Design		√		Students are able to demonstrate technical skill of characterizing different separators, compressors, pumps, modelling and analysis of production.
112	171PT7E10	Coal Bed Methane	~			Students are able to acquire skills related to design, synthesize and evaluate the performance of CBM wells enabling them to be employed for designing and evaluation well for methane extraction.
113	171PT7E11	Offshore Engineering		✓		Students are able to demonstrate technical skill of characterizing different structures, modelling and analysis of offshore operations.
114	171PT7E12	Petroleum Corrosion Technology		✓		Students are able to demonstrate technical skill of characterizing different corrosion behaviours, modelling and analysis of treating.
115	171PT7E13	Shale Gas Reservoir Engineering	~	-		Students are able to acquire skills related to design, synthesize and evaluate the performance of CBM & shale wells enabling them to be employed for designing and evaluation well for methane and oil extraction.
116	171PT7E14	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures, modelling and analysis of production.
117	171PT7E15	Reservoir Modeling and Simulation	~			Students are able to demonstrate problem solving skills by modelling physical phenomenon using Practical Reservoir Modelling & Simulation (MATLAB Based) in various engineering disciplines.
118	171PT7L07	Petroleum Equipment Design and Simulation Lab		✓		Students are able to acquire skills related to design, synthesize and evaluate the performance of process equipment's enabling them to be employed for designing and evaluation of fluid behaviour in production.

B. Tech Petroleum Technology

119	171PT7L08	Petroleum Reservoir Engineering Lab		1		Students are able to acquire skills related to design, synthesize and evaluate the performance of process equipment's enabling them to be employed for designing and evaluation of fluid behaviour in production.
120	171HS7A04	Managerial Economics and Financial Analysis			~	Students are able to demonstrate Competency in gaining the managerial skill set and enabling them to be an entrepreneur
121	171PT7P01	Industry Oriented (Internship) Minor Project	1			students will be able to demonstrate problem identification, analysis, design solutions or applications in petroleum technology domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
122	171PT8E16	HSE and FE 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.
123	171PT8E17	Reliability and Risk Management in Petroleum Operations			~	Students are able to demonstrate Competency in the domain of Reliability and Risk Management in Petroleum Operations enabling them to become an entrepreneur.
124	171PT8E18	Deep Sea Production Systems		*		Students are able to demonstrate technical skill of characterizing different subsea equipment's, modelling and analysis of production.
125	171PT8O01	Green Technologies		√		Students are able to demonstrate technical skill of characterizing different energy resources, modelling and analysis of energy sector.
126	171PT8O02	Non-Conventional Sources of Energy		✓		Students are able to demonstrate technical skill of characterizing different Non-Conventional Sources, modelling and analysis of energy sector.
127	171PT8O03	Alternative Energy Sources for Automobiles		V		Students are able to demonstrate technical skill of characterizing different Alternative Energy Sources, modelling and analysis of Automobiles.
128	171PT8O04	Waste Water Treatment		√		Students are able to demonstrate technical skill of characterizing different waste water materials, modelling and analysis of treatments.
129	171PT8O05	Computational Fluid Dynamics		1		Students are able to demonstrate technical skill of characterizing different fluid phases , modelling and analysis of fluid dynamics.
130	171PT8O06	Process Intensification in Petroleum Industry		V		Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.

131	171EC8O02	Disaster Management	✓			Students are able to acquire skills related to interpretation of various disasters in the environment and prepares one to prevent, face and combat them enabling them to be employed as managers in various industries
132	171PT8P02	Major Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications petroleum technology domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
	Total		37	69	9	

Program Coordinator

Head of the Department

Head of the Department
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