



ADITYA ENGINEERING COLLEGE

An Autonomous Institution

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Recognised by UGC under sections 2(f) and 12(B) of UGC Act, 1956

Aditya Nagar, ADB Road, Surampalem - 533437, Near Kakinada, E.G.Dt., Ph:99498 76662

Department of Petroleum Technology

B.Tech - AR17 - Course Articulation Matrix

Note: Correlation Levels are 1 or 2 or 3. Where 1- Slight(Low), 2 - Moderate(Medium), 3 - Substantial (High).

	CO Statements	POs												PSOs	
I SEM															
Course Code	171HS1T01 - English - I	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Summarize how Gandhi grew in introspection and the conditions to achieve a higher quality of life, strength and sovereignty of a developed nation.	-	-	-	-	-	-	-	-	-	3	-	-	-	-
CO2	Identify that all men can come together and avert the peril.	-	-	-	-	-	-	-	-	-	3	-	-	-	-
CO3	Comprehend texts from a literary perspective and familiarise the students with Figures of Speech.	-	-	-	-	-	-	-	-	-	3	-	-	-	-
CO4	Explain the characteristic traits of renowned scientists who contributed enormously to the scientific advancement of India.	-	-	-	-	-	-	-	-	-	3	-	-	-	-
CO5	Demonstrate Writing and basic concepts of Grammar skills.	-	-	-	-	-	-	-	-	-	3	-	-	-	-
Course Code	171BS1T01 - Mathematics - I	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Associate linear differential equations of first order to various physical problems involving differential equations of first order	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO2	Solve linear differential equations of higher order.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO3	Solve linear systems of equations using the concept of rank, Gauss elimination, Gauss seidal method.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO4	Find the eigen values and eigen vectors.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO5	Associate the concepts of Partial Differentiation to maxima and minima of functions of several variables and to Partial differential equations.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
Course Code	171HS1T02 - Environmental Studies	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Identify the need for protecting the producers and consumers in various ecosystems and their role in the food web.	-	-	-	-	-	3	2	-	-	-	-	1	-	-
CO2	Outline the natural resources and their importance for the sustenance of the life.	-	-	-	-	-	3	2	-	-	-	-	1	-	-

	CO Statements	POs												PSOs	
CO3	List out the biodiversity of India, threats and its conservation methods.	-	-	-	-	-	3	2	-	-	-	-	1	-	-
CO4	Illustrate various attributes of the pollution, impacts and measures to control the pollution along with waste management practices. Summarize the legislations of India in environmental protection.	-	-	-	-	-	3	2	-	-	-	-	1	-	-
CO5	Describe social issues both rural and urban environment to combat the challenges. Explains the population growth and its implications	-	-	-	-	-	3	2	-	-	-	-	1	-	-
Course Code	171BS1T03 - Engineering Chemistry	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain polymeric materials their uses and moulding techniques of plastics.	2	-	-	-	-	-	-	-	-	-	-	-	1	-
CO2	Classify solid, liquid and gaseous fuels.	2	-	-	-	-	-	-	-	-	-	-	-	1	-
CO3	Explain about batteries, corrosion and their control methods.	3	-	-	-	-	-	-	-	-	-	-	-	1	-
CO4	Explain Nano materials, Super Conductors, Semi Conductors and Liquid Crystals.	3	-	-	-	-	-	-	-	-	-	-	-	1	-
CO5	Summarize water purification techniques and boiler troubles.	2	-	-	-	-	-	-	-	-	-	-	-	1	-
Course Code	171ES1T02 Engineering Mechanics	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Determine the resultant force and moment for a given force system.	3	2	1	-	-	-	-	-	-	-	-	-	-	-
CO2	Explain the concept of friction.	2	1	1	-	-	-	-	-	-	-	-	-	-	-
CO3	Calculate the forces in planar and spatial systems.	3	2	1	-	-	-	-	-	-	-	-	-	-	-
CO4	Locate centroid of composite areas and centre of gravity of composite bodies.	1	1	1	-	-	-	-	-	-	-	-	-	-	-
CO5	Calculate the moment of inertia of composite areas and rigid bodies.	3	2	1	-	-	-	-	-	-	-	-	-	-	-
CO6	Apply the concepts of kinematics, kinetics, work - energy and impulse - momentum methods to particle motion.	3	2	1	-	-	-	-	-	-	-	-	-	-	-
Course Code	171ES1T01 - Computer Programming	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Apply Fundamental concepts of C for mathematical and scientific problems	1	2	-	-	-	-	-	-	-	-	-	-	-	-
CO2	Use Control Structures and Arrays in solving complex problems.	1	2	2	3	-	-	-	-	-	-	-	-	-	-
CO3	Develop modular programs to solve problems using control structures, Arrays and strings.	1	3	2	2	-	-	-	-	-	-	-	-	-	-
CO4	Demonstrate the pointers concept for allocating and deallocating memory dynamically.	1	2	2	3	-	-	-	-	-	-	-	-	-	-
CO5	Solve real world problems using the concept of file, structures and unions.	1	2	2	2	-	-	-	-	-	-	-	-	-	-
Course Code	171HS1L01 - English Communication Skills Lab - I	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Make use of the concepts to communicate confidently and competently in English Language in all spheres.	-	-	-	-	1	-	-	-	-	3	-	1	-	-

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	CO Statements	POs												PSOs	
CO3	Determine the bending and shear stresses in beams of various cross sections.	3	2	1	-	-	-	-	-	-	-	-	-	-	-
CO4	Compute longitudinal, hoop stresses for cylindrical shells and the parameters of power transmission systems.	3	2	1	-	-	-	-	-	-	-	-	-	-	-
CO5	Describe the different types of boilers and the performance of the compressors.	2	1	-	-	-	-	-	-	-	-	-	-	-	-
CO6	Explain the working principle and performance of Internal Combustion Engines.	2	1	-	-	-	-	-	-	-	-	-	-	-	-
Course Code	171HS2L02 - English Communication Skills Lab - II	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Make effective use of Body language in all situations and contexts to enhance effective communication in all aspects.	-	-	-	-	-	-	-	-	-	3	-	2	-	-
CO2	Identify communicative competency to respond to others in different situations.	-	-	-	-	-	-	-	-	-	3	-	2	-	-
CO3	Make use of effective delivery strategies to select, compile and synthesize information for oral presentation.	-	-	-	-	-	-	-	-	-	3	-	2	-	-
CO4	Demonstrate in mock interviews, group discussion and public speaking.	-	-	-	-	-	-	-	-	-	3	-	2	-	-
CO5	Illustrate interpersonal skills using English language confidently and effectively for personal and professional growth.	-	-	-	-	-	-	-	-	-	3	-	2	-	-
Course Code	171BS2L02 - Engineering Physics Lab	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Use spectrometer, polarimeter, travelling microscope for making measurements.	3	2	-	-	-	-	-	-	2	-	-	1	-	-
CO2	Determine energy gap of a semiconductor, draw characteristic curves to estimate thermal coefficient of a thermistor, zener diode.	2	2	-	-	-	-	-	-	2	-	-	1	-	-
CO3	Determine the rigidity and determine frequency of an unknown electric vibrator.	3	1	-	-	-	-	-	-	2	-	-	1	-	-
CO4	Determine wavelength of unknown source, the width of narrow slits, spacing Between close rulings using lasers and appreciate the accuracy in measurements.	3	2	-	-	-	-	-	-	2	-	-	1	-	-
CO5	Verify magnetic field along the axis of a circular coil.	3	2	-	-	-	-	-	-	2	-	-	1	-	-
Course Code	171ES2L02 - Engineering Workshop and IT Workshop	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Prepare carpentry, fitting joints as per the given requirement using Carpentry and Fitting tools	2	1	-	-	-	-	-	-	1	-	-	-	-	-
CO2	Convert the metal rods and sheets into final shape using black smithy and tin smithy tools	2	1	-	-	-	-	-	-	1	-	-	-	-	-
CO3	Prepare the circuit for house wiring applications	2	1	-	-	-	-	-	-	1	-	-	-	-	-

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	CO Statements	POs												PSOs	
CO4	Calculate the energy balances with reactive and non-reactive process systems	3	2	-	-	-	-	-	-	-	-	-	-	2	-
CO5	Solve combustion calculations and thermal efficiency calculations	2	2	-	-	-	-	-	-	-	-	-	-	3	-
Course Code	171ES3T05 - Basic Electrical and Electronics Engineering	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Analyze the various electrical networks.	3	3	-	-	-	-	-	-	-	-	-	-	1	-
CO2	Explain the operation of DC Machines.	2	-	-	-	-	-	3	-	-	-	-	-	1	-
CO3	Examine the performance of single-phase transformers.	3	-	2	-	-	-	-	-	-	-	-	-	1	-
CO4	Compare the operation of 3-phase alternators and 3-phase induction motors.	2	1	-	-	-	-	-	-	-	-	-	-	1	-
CO5	Distinguish the operation of half wave and full wave bridge rectifiers.	3	3	2	2	-	-	2	-	-	-	-	-	1	-
Course Code	171ES3L09 - Basic Engineering Lab	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Illustrate the efficiency of a DC machine as motor and generator.	3	-	1	-	-	-	-	-	-	-	-	-	-	1
CO2	Analyze the performance of a 3-Phase induction motor and DC Shunts motor by conducting direct test	3	-	1	-	-	-	-	-	-	-	-	-	-	1
CO3	Employ Synchronous impedance method to Pre-determine the regulation of an alternator	2	-	2	-	-	-	-	-	-	-	-	-	-	1
CO4	Demonstrate mould making process for casting process and sand preparation methods	3	-	1	-	-	-	-	-	-	-	-	-	-	1
CO5	Determine Performance characteristic curves and efficiencies of different hydraulic turbines	3	-	1	-	-	-	-	-	-	-	-	-	-	1
CO6	Determine the performance of various types of IC Engines.	3	-	1	-	-	-	-	-	-	-	-	-	-	1
Course Code	171ES3L10 - Geology and Surveying Lab	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Make use of the maps to estimate reservoir area and thickness and draw litho - stratigraphy columns	3	-	-	-	-	-	-	-	2	2	-	1	-	1
CO2	Construct Geological map, strike, dip at any chosen location/ different geological locations and do sampling for paleontological studies at any location	3	-	-	-	-	-	-	-	2	2	-	1	-	1
CO3	Estimate the levels of existing ground with the help of auto level.	3	-	-	-	-	-	-	-	2	2	-	1	-	1
CO4	Solve height and distances problems using different principles.	3	-	-	-	-	-	-	-	2	2	-	1	-	1
CO5	Calculate areas and distances by total station.	3	-	-	-	-	-	-	-	2	2	-	1	-	1
Course Code	171HS3A10 - Employability Skills - I	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain the number and letter series and analogies in different models	1	-	-	-	-	-	-	-	-	-	-	1	-	-
CO2	Demonstrate processes of coding & decoding and direction test	1	-	-	-	-	-	-	-	-	1	-	1	-	-
CO3	Demonstrate the basic grammatical skills using articles and prepositions	-	-	-	-	-	-	-	-	-	1	-	1	-	-
CO4	Use tenses, voice types and conversion rules to deliver an effective speech	-	-	-	-	-	-	-	-	-	1	-	1	-	-
CO5	Demonstrate creative speaking abilities using all forms of sentences	-	-	-	-	-	-	-	-	-	1	-	1	-	-

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	CO Statements	POs												PSOs	
Course Code	171PT4T04 - Thermodynamics for Petroleum Engineers	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain the basic concepts of thermodynamics and first law of thermodynamics.	3	2	-	-	-	-	-	-	-	-	-	2	3	-
CO2	Explain PVT behavior of pure substances and second law of thermodynamics	3	2	-	-	-	-	-	-	-	-	-	2	3	-
CO3	Make use of thermodynamic tables and diagrams for the estimation of thermodynamic properties of fluids.	3	2	-	-	-	-	-	-	-	-	-	2	3	-
CO4	Apply residual and excess Gibbs free energy models for design of oil and natural gas processing systems.	3	2	-	-	-	-	-	-	-	-	-	2	3	-
CO5	Explain the concepts with the help of calculations of VLE, VLLE, SVE and SLE.	3	2	-	-	-	-	-	-	-	-	-	2	3	-
Course Code	171PT4T05 - Process Heat Transfer	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain the various modes of heat transfer and the principles involved in them	3	2	-	-	-	-	-	-	-	-	-	2	2	-
CO2	Make use of individual heat transfer coefficients to determine over all heat transfer rate	3	2	-	-	-	-	-	-	-	-	-	2	2	-
CO3	Explain the heat transfer with and without involving phase change	3	2	-	-	-	-	-	-	-	-	-	2	2	-
CO4	Identify the types of heat exchanger equipment and know their intended purpose	1	2	-	-	-	-	-	-	-	-	-	2	2	-
CO5	Demonstrate the effect of material, flow regimes, phase changes etc. on heat transfer rate.	3	2	-	-	-	-	-	-	-	-	-	2	2	-
Course Code	171HS4T05 - Management Science	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Apply management and motivation theories to renovate the practice of management.	-	-	-	-	-	-	-	-	-	2	-	1	-	2
CO2	Use principles of Statistical Quality Control and Materials management in the design of products and process controls.	1	1	-	-	-	-	-	-	-	3	-	1	-	2
CO3	Appraise the functional management challenges associated with high levels of change in the organizations.	-	-	-	-	-	-	-	-	-	1	-	1	-	2
CO4	Identify activities with their interdependency and use scheduling techniques of project management PERT/CPM.	1	1	-	-	-	-	-	-	-	1	1	1	-	2
CO5	Develop global vision and management skills both at strategic level and interpersonal level.	-	-	-	-	-	-	-	-	-	1	-	1	-	2
Course Code	171PT4L01 - Momentum Transfer Lab	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Identify laminar and turbulent flows in major equipment like Reynolds	-	-	-	-	-	-	-	-	3	2	-	2	-	2
CO2	Calculate momentum transfer principles and experimentation methods.	-	-	-	-	-	-	-	-	3	2	-	2	-	2

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	CO Statements	POs												PSOs	
Course Code	171PT5E01 - Well Engineering and Design (Professional Elective-I)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain Pore pressure and Fracture pressure	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO2	Solve the Kick tolerance for Kick identification	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO3	Design the Casing for effective well construction	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO4	Solve the Wellbore instability problems	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO5	Calculate the Torque and Drag forces based on Horizontal, Extended, Multilateral and HPHT Wells.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
Course Code	171PT5E02 - Fundamentals of Liquefied Natural Gas (Professional Elective-I)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain the LNG value chain.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO2	Classify the different liquefaction technologies of LNG.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO3	Explain the components of LNG receiving terminals.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO4	Summarize LNG storage and transportation facilities.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO5	Identify major equipment and safety aspects of LNG industry.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
Course Code	171PT5E03 - Pipeline Engineering (Professional Elective-I)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Illustrate pipeline route selection and survey operations.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO2	Apply the pipeline mechanical design and pipeline protection.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO3	Summarize the natural gas transmission in pipelines.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO4	Explain the performance of compressors and coolers.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
CO5	Facilitate the fundamentals of transient analysis.	3	2	-	-	-	-	-	-	-	-	-	2	-	2
Course Code	171HS5T06 - Employability Skills – III	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Calculate the L.C.M and H.C.F of numbers	1	-	-	-	-	-	-	-	-	-	-	1	-	-
CO2	Solve problems on Numbers & Simple equations	1	-	-	-	-	-	-	-	-	-	-	1	-	-
CO3	Apply different types of models on ratio & proportion, average, ages and percentages	1	-	-	-	-	-	-	-	-	-	-	1	-	-
CO4	Apply interviewing skills, Group discussion skills and personal priorities	-	-	-	-	-	-	-	-	-	1	-	1	-	-
CO5	Apply resume writing skills, e-mail writing & business etiquette	-	-	-	-	-	-	-	-	-	1	-	1	-	-
Course Code	171PT5L03 - Instrumentation, Process Dynamics and Control Lab	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Experiment with the dynamic characteristics of first and second order systems.	2	2	-	-	-	-	-	-	2	2	-	2	-	2
CO2	Apply the advanced control methods used for complex processes in the industries.	2	2	-	-	-	-	-	-	2	2	-	2	-	2
CO3	Apply controllers like ON/OFF, P, PI, PD and PID for process systems.	2	2	-	-	-	-	-	-	2	2	-	2	-	2
CO4	Identify the stability of the system.	2	2	-	-	-	-	-	-	2	2	-	2	-	2

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	CO Statements	POs												PSOs	
Course Code	171PT7E15 - Reservoir Modeling and Simulation (Professional Elective-V)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain simulation on simulation by mathematical approach and engineering approach.	2	3	-	-	-	-	-	-	-	-	-	2	2	-
CO2	Explain modelling of Single phase fluid equation in multidimensional domain, CVFD terminology.	2	3	-	-	-	-	-	-	-	-	-	2	2	-
CO3	Apply concepts of Simulation with block centered grid and point distributed grid.	2	3	-	-	-	-	-	-	-	-	-	2	2	-
CO4	Apply Well representation in simulators.	2	3	-	-	-	-	-	-	-	-	-	2	2	-
CO5	Apply design To help the students to design Considerations in linearization of flow equation.	2	3	-	-	-	-	-	-	-	-	-	2	2	-
Course Code	171PT7L07 - Petroleum Equipment Design and Simulation Lab	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Design and simulation of the two-phase, three phase separators and compressors.	-	-	-	-	2	-	-	-	2	2	-	1	-	2
CO2	Design and simulation of absorber-stripper unit for removal of CO2 and H2S from natural gas.	-	-	-	-	2	-	-	-	2	2	-	1	-	2
CO3	Size /rate the pipeline & pumping systems for liquid pumping & simulate water hammer conditions.	-	-	-	-	2	-	-	-	2	2	-	1	-	2
CO4	Design and simulation of flash vaporization units.	-	-	-	-	2	-	-	-	2	2	-	1	-	2
CO5	Generating sized equipment data sheets as per the industry standards with required information for detailed design / manufacture	-	-	-	-	2	-	-	-	2	2	-	1	-	2
Course Code	171PT7L08 - Petroleum Reservoir Engineering Lab	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Identify kind of flow (steady-state, unsteady-state or transient)	-	-	-	-	-	-	-	-	2	2	-	2	2	-
CO2	Calculate and analyze porosity, permeability and pore distribution of a reservoir rock sample.	-	-	-	-	-	-	-	-	2	2	-	2	2	-
CO3	Classify involving Darcy fluid flow equation for in a reservoir.	-	-	-	-	-	-	-	-	2	2	-	2	2	-
CO4	Solve the type of permeability when two fluid flows.	-	-	-	-	-	-	-	-	2	2	-	2	2	-
CO5	Apply the experiment value to real life to get favorable outcome in reservoir engineering problem.	-	-	-	-	-	-	-	-	2	2	-	2	2	-
Course Code	171HS7A04 - Managerial Economics and Financial Analysis	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain the Managerial Economic concepts for decision making and forward planning.	-	-	-	-	-	-	-	2	-	-	-	-	-	-
CO2	Illustrate the law of demand and its exceptions, to use different forecasting methods for predicting demand for various products and services	-	-	-	-	-	-	-	-	-	3	-	-	-	-

	CO Statements	POs												PSOs	
CO3	Identify the cost behavior, costs useful for managerial decision making and Break Even Point (BEP) of an enterprise.	-	-	-	-	-	-	-	-	-	-	3	-	-	-
CO4	Outline the different types of business organizations along with basic knowledge on business cycle.	-	-	-	-	-	-	-	-	-	-	-	3	-	-
CO5	Make use of the process & principles of accounting and prepare Journal, Ledger, Trial Balance, Trading A/c., Profit & Loss A/c. and Balance Sheet of an enterprise.	-	-	-	-	-	-	-	-	-	3	-	-	-	-
CO6	Utilize various techniques on investment project proposals with the help of capital budgeting techniques for decision making.	-	-	-	-	-	-	-	-	-	3	-	-	-	-
Course Code	171PT7P01 - Industry Oriented (Internship) Minor Project	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Outline the working environment and professional ethics in an industry	-	-	-	-	-	-	-	2	-	-	-	3	-	-
CO2	Relate with real time tools used in industries	2	-	-	-	2	-	-	-	-	-	-	-	2	-
CO3	Apply respective domain knowledge to understand an industrial process	3	-	-	-	-	3	3	-	-	-	-	-	3	-
CO4	Utilize an industrial process involved in delivering/developing a final service/product for project building.	-	2	-	-	-	-	3	-	-	-	3	-	-	2
CO5	Analyze the relevance of their course curriculum with that used in industries.	-	3	-	-	-	-	-	-	-	3	-	-	-	-
VIII SEM															
Course Code	171PT8E16 - HSE and FE in Petroleum Industry (Professional Elective-VI)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain the environmental issues in drilling and production operations.	2	-	-	-	-	-	3	-	-	-	-	1	2	-
CO2	Summarize impacts of petroleum industry wastes and waste treatment methods.	2	-	-	-	-	-	3	-	-	-	-	1	2	-
CO3	Demonstrate the oil mines regulations in various petroleum industry operations.	2	-	-	-	-	-	3	-	-	-	-	1	2	-
CO4	Make use of the hazop study concepts for safe practices in Petroleum industry.	2	-	-	-	-	-	3	-	-	-	-	1	2	-
CO5	Illustrate the fire triangle, different methods of suppression of hydrocarbon fires.	2	-	-	-	-	-	3	-	-	-	-	1	2	-
Course Code	171PT8E17 - Reliability and Risk Management in Petroleum Operations (Professional Elective-VI)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Identify the risk, assess the risk, plan of action, monitor and manage.	3	-	-	-	-	-	-	-	-	-	2	1	2	-
CO2	Study the important of risk management.	3	-	-	-	-	-	-	-	-	-	2	1	2	-
CO3	Explain the vulnerability, risk evaluation and risk assessment.	3	-	-	-	-	-	-	-	-	-	2	1	2	-
CO4	Apply the risk rating to different types of risk.	-	2	-	-	-	-	-	-	-	-	2	1	2	-
CO5	Explain emergency action when there is an uneventful situation.	-	2	-	-	-	-	-	-	-	-	2	1	2	-

[illegible]

	CO Statements	POs												PSOs	
Course Code	171PT8O04 - Waste Water Treatment (Open Elective)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Summarize the importance of sanitation.	2	-	-	-	-	-	3	-	-	-	-	-	-	-
CO2	Find the rate of sewage flow.	2	-	-	-	-	-	2	-	-	-	-	-	-	-
CO3	Identify the various characteristics of sewage.	2	-	-	-	-	-	3	-	-	-	-	-	-	-
CO4	Outline various wastewater treatment technologies.	2	-	-	-	-	-	3	-	-	-	-	-	-	-
CO5	Explain the different treated effluent disposal methods.	2	-	-	-	-	-	3	-	-	-	-	-	-	-
Course Code	171PT8O05 - Computational Fluid Dynamics (Open Elective)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Apply finite difference method and finite volume method for practical applications.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO2	Apply software tools available for arriving at some problems of interest.	2	2	-	-	-	-	-	-	-	-	-	-	-	-
CO3	Distinguish different flow regimes while performing numerical analysis.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO4	Apply source and vortex panel method of inviscid flow to practical problems.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO5	Apply arrive at pressure and flow distribution for complicated flow systems.	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Course Code	171PT8O06 - Process Intensification in Petroleum Industry (Open Elective)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Apply the basic principles and mechanisms that are responsible for process intensification.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO2	Analyze various modifications to process equipment and designs with which process intensification becomes a reality in unit operations and unit processes.	2	2	-	-	-	-	-	-	-	-	-	-	-	-
CO3	Analyze various case studies available in petrochemical, fine chemical, bioprocesses and carbon capture.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO4	Explain application of solar energy in offshore oil and gas operations	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO5	Correlate textbook reported methodologies with Computational Fluid Dynamics and experimental process intensification.	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Course Code	171EC8O02 - Disaster Management (Open Elective)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain the basics of disaster management and their mitigation measures.	2	-	-	-	-	-	2	-	-	-	-	-	-	-
CO2	Interpret the disaster vulnerability conditions of India.	2	-	-	-	-	-	2	-	-	-	-	-	-	-
CO3	Choose the means of preparedness measures against disaster.	2	-	-	-	-	-	2	-	-	-	-	-	-	-
CO4	Illustrate the impact of hazards on structures.	2	-	-	-	-	-	2	-	-	-	-	-	-	-
CO5	Outline the various rehabilitation programmes to be adopted.	2	-	-	-	-	-	2	-	-	-	-	-	-	-
Course Code	171PT8P02 - Major Project	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Demonstrate management skills required for project development	-	-	-	-	-	-	-	-	-	-	2	-	-	2
CO2	Illustrate the problem statement and scope of the project clearly.	-	1	-	-	-	-	3	3	-	-	-	-	-	2

	CO Statements	POs												PSOs	
CO3	Make use of a proper methodology in solving problems related to a project.	3	2	-	-	3	-	-	-	-	-	-	-	3	2
CO4	Analyze data into meaningful information for a project using relevant tools.	-	-	-	2	-	3	-	-	-	-	-	-	-	3
CO5	Adapt to work independently and ethically to effectively present the results in written and oral formats.	-	-	-	-	-	-	-	3	3	3	3	3	-	2