Department of Mechanical Engineering

Course Outcomes of all courses of B Tech 5th semester MECH

On successful completion of this course, students should be able to

Course	COURSE OUTCOMES	
C301 Internal Combustion Engine C037511(037)	C 301.1	**Describe** the construction and working principle of various internal combustion engines. **Explain** the concepts of fuel air cycle and actual cycle and **apply** it to analyze related practical problems **(LEVEL 2,3)**
	C 301.2	**Explain** the theory of combustion of S.I. engine and C.I. engine, **describe** I.C.Engine fuels and solve problem related to flue gas analysis. **(LEVEL 2,3)**
	C 301.3	**Discuss** properties of air-petrol mixtures and **describe** fuel supply system of S.I. and C.I. Engine. **(LEVEL 4)**
	C 301.4	**Describe** ignition system, cooling system, lubrication system and Engine emissions and its control. **(LEVEL 3)**
	C 301.5	**Describe** various performance parameter of I.C. Engine, its method of testing and **analyze** related practical problems. **(LEVEL 3)**

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Course	COURSE OUTCOMES	
C302- Solid Mechanics C037512(037)	**C302.1**	**Analyze** problems related to deformable body under load using energy methods. **(LEVEL 3)**
	C302.2	**Analyze** fixed beams and continuous beams under load. **(LEVEL 3)**
	C302.3	**Analyze** thin and thick pressure vessels. **(LEVEL 3)**
	C302.4	**Analyze** column and find shear center. **(LEVEL 3)**
	C302.5	**Solve** plane stress and plain strain problems. **(LEVEL 3,4)**

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Course	COURSE OUTCOMES	
C303- Fluid Machines C037513(037)	**C303.1**	**Explain** the concepts of 'boundary layer theory' and ' lift and drag theory' and **apply** to solve related practical problems **(LEVEL 2,3)**
	C303.2	**Explain** the principle of impulse-momentum and impulse turbines and **apply** it to analyze related problems. **(LEVEL 2,3)**
	C303.3	**Explain** the construction and principle of operation of reaction turbine and **apply** it to analyze related problems. **(LEVEL 2,3)**
	C303.4	**Explain** the construction and principle of operation of centrifugal pump and **apply** it to analyze related problems. **(LEVEL 2,3)**
	C303.5	**Explain** the construction and principles of operation of reciprocating pump and **apply** it to analyze related problems. **(LEVEL 2,3)**

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Course	COURSE OUTCOMES	
C304-Dynamics of Machine C037514(037)	**C304.1**	**Explain** principles of operation of mechanical governors and analyze its performance parameters. **(LEVEL 2,3)**
	C304.2	**Apply** the theory of balancing to rotating and reciprocating masses. **(LEVEL 3)**
	C304.3	**Analyze** gyro-effect on moving bodies. **(LEVEL 4)**
	C304.4	**Explain** principles of vibrations of different systems and **analyze** related practical problems. **(LEVEL 2,3)**
	C 304.5	**Perform** inertia force analysis of machine elements. **Draw** turning moment diagram of reciprocating engine and analyze performance parameter of flywheel. **(LEVEL 3)**

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Course	COURSE OUTCOMES	
C305- Operation Research C037531(037)	**C305.1**	**Formulate** and **solve** real-world problems as linear programs for better decision-making. **(LEVEL 3,4)**
	C305.2	**Solve** specialized linear programming models like the transportation and assignment Models. **(LEVEL 3,4)**
	C305.3	Model a dynamic system as a queuing model and **compute** important performance measures. **(LEVEL 3)**
	C305.4	**Use** CPM and PERT techniques, to plan, **schedule** and control project activities. **(LEVEL 3)**
	C305.5	**Propose** the best strategy using decision making methods under game theory & **apply** concepts of Simulation to optimize practical problems. **(LEVEL 6,3)**

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Course	COURSE OUTCOMES	
C306- Internal Combustion Engine Lab C037521(037)	C306.1	**Describe** the basic engine nomenclature and working principle of four stroke and two stroke Petrol and Diesel engine. .**(LEVEL 2,3)**
	C306.2	**Describe** the fuel supply system of a Petrol and Diesel engine. .**(LEVEL 2,3)**
	C306.3	**Describe** Ignition, Lubrication and cooling system of an internal combustion engine. .**(LEVEL 3)**
	C306.4	**Analyze** the performance parameters of diesel engine. .**(LEVEL 3)**
	C306.5	**Analyze** the performance parameters of petrol engine. .**(LEVEL 3)**

On successful completion of this course, students should be able to

Course	COURSE OUTCOMES	
C307- Dynamics of Machine Lab C037522(037)	C307.1	**Analyze** the vibration parameters of various systems. .**(LEVEL 3)**
	C307.2	**Analyze** gyroscopic parameters. .**(LEVEL 3)**
	C307.3	**Analyze** various types of governors. .**(LEVEL 3)**
	C307.4	**Find** the critical speed of different diameters of shafts. .**(LEVEL 1,2)**
	C307.5	**Analyze** the effects of unbalance in machine and methods to reduce/eliminate these effects. .**(LEVEL 3)**

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Course	COURSE OUTCOMES	
C308- Fluid Machines Lab C037523(037)	**C308.1**	**Analyze** the performance parameters of Pelton Turbine. .**(LEVEL 3)**
	C308.2	**Analyze** the performance parameters of Francis and Kaplan Turbine.**(LEVEL 3)**
	C308.3	**Analyze** the performance parameters of Centrifugal Pump and Reciprocating Pump. .**(LEVEL 3)**
	C308.4	**Determine** Lift and drag force over an air foil. .**(LEVEL 4)**
	C308.5	**Explain** the construction and working of various fluidic devices. .**(LEVEL 2)**

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Course	COURSE OUTCOMES	
C309- Project-I based on Summer Internship/ Industrial Training C037524(037)	**C309.1**	**Technical Skills Development** Students will be tasked with applying the technical skills they've acquired during their internship or training to solve real-world problems. This could involve implementing software solutions, conducting experiments, or troubleshooting technical issues encountered in the industry.**(Level: 3)**
	C309.2	**Problem-Solving Abilities** Students will analyze complex problems relevant to their field of study or industry. They will identify key issues, examine different approaches to problem-solving, and propose innovative solutions. This could involve case studies, simulations, or research-based projects. **(Level: 4)**
	C309.3	**Communication Skills Enhancement** Students will evaluate and improve their communication skills through project presentations, reports, or documentation. They will articulate their ideas, present findings, and defend their solutions effectively. Peer reviews and feedback sessions can be incorporated to enhance communication abilities. **(Level: 5)**
	C309.4	**Professional Development** Students will create a professional portfolio showcasing their achievements, experiences, and skills gained during the internship or training. They will reflect on their learning journey, set career goals, and develop a plan for continuous professional development. This could involve creating resumes, LinkedIn profiles, or personal branding
	C309.5	**Teamwork and Collaboration** Students will apply their teamwork and collaboration skills by working on group projects or collaborative assignments. They will demonstrate effective teamwork, leadership, and interpersonal skills while completing tasks and achieving project objectives. Group presentations or joint reports can be used to assess teamwork outcomes. **(Level: 3)**