Department of Mechanical Engineering

Course Outcomes of all courses of B Tech 4th semester MECH

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

Course	COURSE OUTCOMES	
C211 Applied Thermodynamics B037411(037)	C 211.1	**Analyze** and evaluate gas power cycles. **(Level 4)**
	C 211.2	**Analyze** reciprocating air compressors. **(Level 4)**
	C 211.3	**Analyze** vapour power cycle. **(Level 4)**
	C 211.4	**Analyze** steam condenser and **discuss** working principle of cooling pond and cooling towers. **(Level 4,1)**
	C 211.5	**Analyze** thermodynamic system with compressible fluid. **(Level 4)**

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Course	COURSE OUTCOMES	
C212- Fluid Mechanics B037412(037)	C212.1	**Explain** fluid properties and basic principles of fluid statics and **analyze** the problem related to manometry, forces on submerge plane, buoyancy and flotation. **(Level 1,3,)**
	C212.2	**Explain** basic principles of fluid kinematics and **analyze** related practical problem. **(Level 1,3,)**
	C212.3	**Explain** basic principles of fluid dynamics and **analyze** related practical problem. **(Level 1,3,)**
	C212.4	**Derive** relationships for various flow characteristics of laminar flow, turbulent flow and energy losses in pipe flow and apply to **analyze** related practical problems. **(Level 3)**
	C212.5	**Apply** dimensional analysis to derive a relationship among connected variables and **apply** model laws to predict the behavior of the prototype in given circumstances. **(Level 3)**

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Course	COURSE OUTCOMES	
C213- Strength of Materials B037413(037)	C213.1	**Apply** the concept of stress and strain to **analyze** various types of structures. **(Level 1,3,)**
	C213.2	**Determine** the distribution of shear force, bending moment and transverse shear stress along the loaded beam. **(Level 4,)**
	C213.3	**Determine** the deflections and slope of loaded flexural members. . **(Level 4,)**
	C213.4	**Analyze** shaft and springs under torsional load. **(Level 3)**
	C213.5	**Analyze** various structural elements subjected to combined stresses/combined loads. **(Level 3,)**

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Course	COURSE OUTCOMES	
C214-Manufacturing Process B037414(037)	C214.1	**Describe** various metal casting and allied processes. **(Level 2)**
	C214.2	**Describe** various arc and gas welding processes. **(Level 2)**
	C214.3	**Describe** resistance welding, other special type of welding , soldering, brazing and braze welding**(Level 2)**
	C214.4	**Describe** construction, working and various machining operations of lathe, shaper and planer**(Level 2)**
	C 214.5	**Describe** construction, working and various machining operations of milling, broaching, drilling rimming and boring machine**(Level 2)**

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

Course	COURSE OUTCOMES	
C215- Kinematic of Machine B037415(037)	**C215.1**	**Describe** the concepts of machines, mechanisms and related terminologies and **analyze** planar mechanism for displacement and velocity. **(Level 2,3)**
	C215.2	**Analyze** planar mechanism for acceleration. **(Level 3)**
	C215.3	**Analyze** cam-follower mechanism. **(Level 3)**
	C215.4	**Analyze** gears and gear train. **(Level 3)**
	C215.5	**Analyze** bearings, belt-drive, brakes and dynamometer. **(Level 3)**

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Course	COURSE OUTCOMES	
C216- Fluid Mechanics Lab B037421(037)	**C216.1**	**Demonstrate** practical understanding of principles of buoyancy and flotation and **determ** meta-centric height. **(Level 3,5)**
	C216.2	**Verify** impulse momentum principle**(Level 5)**
	C216.3	**Demonstrate** practical understanding of the various terms in Bernoulli's equation and **ve** Bernoulli's theorem. **(Level 3,5)**
	C216.4	**Calibrate** flow measurement devices**(Level 3)**
	C216.5	**Demonstrate** practical understanding of Major and Minor Losses in pipe flow. **(Level 3)**

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

Course	COURSE OUTCOMES	
C217- Material Testing Lab B037422(037)	C217.1	**Analyze** mechanical properties of various engineering materials under specific types of load in universal testing machine. **(Level 3)**
	C217.2	**Analyze** mechanical properties of engineering materials under impact loading. **(Level 3)**
	C217.3	**Analyze** mechanical properties of specimen under torsion (Torsion Testing Machine, Spring Testing Machine) **(Level 3)**
	C217.4	**Determine** hardness of given material. **(Level 3)**
	C217.5	**Analyze** mechanical properties of specimen under fatigue, deep drawing and buckling load. **(Level 3)**

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

Course	COURSE OUTCOMES	
C218- Manufacturing Process Lab B037423(037)	C218.1	**Demonstrate** the use of green sand molding process for casting. **(Level 3)**
	C218.2	**Demonstrate** the use of various machine tools for important machining operations. **(Level 3)**
	C218.3	**Explain** the tool geometry of single point cutting tool and twist drill. **(Level 2)**
	C218.4	**Explain** the practicability of various metal joining processes like arc welding, resistance welding, soldering and brazing. **(Level 2)**
	C218.5	**Obtain** practical skills in inspection and testing of casting and welding defects. **(Level 3,4)**

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Course	COURSE OUTCOMES	
C219- Virtual Lab B037424(037)	**C219.1**	**Perform** experiments of material testing laboratory through virtual simulator. **(Level 3)**
	C219.2	**Analyze** different type of mechanism through virtual simulator. **(Level 3)**
	C219.3	**Analyze** various heat transfer parameter in virtual laboratory**(Level 3)**
	C219.4	**Describe** EDM, Laser cutting, ECM after learning the process through micromachining laboratory. **(Level 2)**
	C219.5	**Describe** casting/ 3D scanning after learning the process through fabrication laboratory. **(Level 2)**