JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE STRUCTURE AND SYLLABUS

For

B. TECH MECHANICAL ENGINEERING

(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
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III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	PCC-ME	Dynamics of Machinery	3	--	--	3
2	PCC-ME	Design of Machine Members-II	3	--	--	3
3	PCC-ME	Mechanical Measurements & Metrology	3	--	--	3
4	HSIMS	Managerial Economics and Financial Accountancy	3	--	--	3
5	PCC-ME	IC Engines & Gas turbines	3	--	--	3
6	PCC-Lab	Thermal Engineering Lab	--	--	3	1.5
7	PCC-Lab	Theory of Machines Lab	--	--	3	1.5
8	PCC-Lab	Mechanical Measurements & Metrology Lab	--	--	3	1.5
9	PROJ-3101	Socially Relevant Project				0.5
		Total Credits	**15**	--	**9**	**20**

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	PCC-ME	Operations Research	3	--	--	3
2	PCC-ME	Heat Transfer	3	--	--	3
3	PCC-ME	CAD/CAM	3	--	--	3
4	PEC-ME1	1.Composite Materials 2.Refrigeration & Air Conditioning 3. Unconventional Machining Processes 4. Advanced Mechanics of Solids 5.MOOCS(NPTEL/Swayam)	3	--	--	3
5	PEC-ME2	1. Material Characterization 2. Tribology 3. Automobile Engineering 4.Mechatronics 5.MOOCS(NPTEL/Swayam)	3	--	--	3
6	PCC-Lab	Simulation of Mechanical Systems Lab	--	--	2	1
7	PCC-Lab	Heat Transfer Lab	--	--	3	1.5
8	PCC-Lab	CAD /CAM Lab	--	--	3	1.5
9	PROJ- ME	Summer Internship*	--	--		1
		Total Credits	**15**	--	**9**	**20**

***The students have to undergo a summer internship for minimum of Four weeks duration from Industries/R&D/ Govt. Organizations after B.Tech III year II-Semester and credits will be awarded in B.Tech IV year I-Semester after evaluation.**

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IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	HSIMS	Industrial Management	3	--	--	3
2	PCC-ME	Finite Element Methods	3	--	--	3
3	PEC-3	1.Mechanical Vibrations 2. Renewable Energy Sources 3.Production Planning & Control 4. Machine Tool Design 5. MOOCs (NPTEL/Swayam)	3	--	--	3
4	PEC-4	1.Industrial Automation and Robotics 2. Micro and Nano manufacturing 3. Power Plant Engineering 4.Optimization Techniques 5. MOOCs (NPTEL/Swayam)	3	--	--	3
5	OEC-1	**OPEN ELECTIVE -I**	3	--	--	3
6	PCC-ME Lab	Finite Element Simulation Lab	--	--	2	1
7	PROJ-I	Project-I	--	--	4	2
		Total Credits	**15**	--	**6**	**18**

OPEN ELECTIVE -I:

1. MEMS
2. Optimization Methods
3. Operations Management
4. Nano Technology
5. Finite Element Analysis

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IV YEAR II SEMESTER (VIII SEMESTER)

S. No.	Course Code	Course Title	L	T	P	Credits
1	PEC-5	1.Additive Manufacturing 2.Gas Dynamics and Jet Propulsion 3. Product design and development 4. Reliability Engineering 5. MOOCs (NPTEL/Swayam)	3	--	--	3
2	PEC-6	1.Condition Monitoring 2.Computational Fluid Dynamics 3.Non Destructive Evaluation 4. Control Systems 5. Entrepreneurship Development	3	--	--	3
3	OEC-2	OPEN ELECTIVE -II	3	--	--	3
4	OEC-3	OPEN ELECTIVE -III	3	--	--	3
5	PROJ-II	Project-II	--	--	16	8
		Total Credits	**12**	--	**16**	**20**

OPEN ELECTIVE-II:	**OPEN ELECTIVE-III:**
1. Green Energy Systems	1. Total Quality Management
2. Robotics	2. Supply Chain Management
3. Energy Consumption and Management	3. Product Design & Development
4. 3D Printing Technologies	4. Entrepreneurship
5. Mechatronics	5. Advanced Materials

Note:

1) Professional Elective course (PEC) /Open Elective course (OEC) can also be completed via MOOCs (NPTEL/Swayam) Course (12 Week duration)
2) The list of MOOCs courses shall be approved by the chairperson of BOS.
3) The tutorial class can be of one hour duration as per requirements of a particular subject.