

**S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT
& RESEARCH, NAGPUR.**



(An Autonomous Institute, Affiliated to RTMNU, Nagpur)
DEPARTMENT OF MECHANICAL ENGINEERING



Vision: Emerge as an excellent centre for Mechanical Engineering education

**CURRICULUM SCHEME
FOR
B.TECH. MECHANICAL ENGINEERING**

SEMESTER-I (Group-II: CD, CM, EE and ME) [NEP COMPLIANT]

Scheme of Teaching & Examination of Bachelor of Technology										
Sr. No.	Course Code	Course Title	Hours Per Week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs)
1	N-BSC101T	Successive Differentiation and Differential Equation	3	1	0	4	40	60	100	3
2	N-BSC103T	Chemistry for Engineering	2	0	0	2	20	30	50	2
3	N-BSC103P	Engineering Chemistry Lab	0	0	2	1	25	25	50	-
4	N-ESC101T	Electrical Engineering	2	1	0	3	40	60	100	3
5	N-ESC101P	Electrical Engineering Lab	0	0	2	1	25	25	50	-
6	N-VSCME101P	Workshop Practices	0	0	4	2	25	25	50	-
7	N-ESC102T	Programming for Problem Solving	3	0	0	3	40	60	100	3
8	N-ESC102P	Programming for Problem Solving Lab	0	0	4	2	25	25	50	-
9	N-AEC101T	Communicative English	1	0	0	1	20	30	50	2
10	N-AEC101P	Communicative English Lab	0	0	2	1	25	25	50	-
11	N-CC102	Liberal Learning Course - 2	1	0	2	2	50	-	50	-
TOTAL			12	2	16	22	335	365	700	-

Revision	BoS Meeting	Date	wef. Academic Year
-	7 th	14-07-2023	2023-24

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SEMESTER-II (Group-II: CD, CM, EE and ME) [NEP-COMPLIANT]

Scheme of Teaching & Examination of Bachelor of Technology										
Sr. No.	Course Code	Course Title	Hours Per Week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem Exam	Total	Duration (Hrs)
1	N-BSC104T	Integral Calculus and Linear Algebra	3	1	0	4	40	60	100	3
2	N-BSC102T	Applied Physics	2	0	0	2	20	30	50	2
3	N-BSC102P	Applied Physics Lab	0	0	2	1	25	25	50	-
4	N-ESC103T	Engineering Graphics and Design	1	0	0	1	40	60	100	4
5	N-ESC103P	Engineering Graphics and Design Lab	0	0	4	2	25	25	50	-
6	N-VSCME102P	Computer Aided Drafting	0	0	4	2	25	25	50	-
7	N-IKS101T	Indian Knowledge System	2	0	0	2	50	-	50	-
8	N-PCCME101T	Basics of Mechanical Engineering	2	0	0	2	20	30	50	2
9	N-PCCME101P	Basics of Mechanical Engineering Lab	0	0	2	1	25	25	50	-
10	N-CC101	Liberal Learning Course - 1	1	0	2	2	50	-	50	-
TOTAL			11	1	14	19	320	280	600	

Revision	BoS Meeting	Date	wef. Academic Year
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2nd YEAR SEMESTER-III [NEP-COMPLIANT]

Scheme of Teaching & Examination of Bachelor of Technology, III Semester B.Tech. (Mechanical Engineering)

Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PCCME301T	Mathematics for Mechanical Engineering	2	1	0	3	40	60	100	3
2	N-PCCME302T	Kinematics of Machines	3	0	0	3	40	60	100	3
3	N-PCCME303T	Engineering Thermodynamics	3	0	0	3	40	60	100	3
4	N-PCCME304T	Material Science and Metallurgy	2	0	0	2	20	30	50	2
5	N-PCCME304P	Material Science and Metallurgy Lab	0	0	2	1	25	25	50	-
6	N-MDM	Multidisciplinary Minor Course: -1	3	0	0	3	40	60	100	3
7	N-OEC	Open Elective Course: -1	3	0	0	3	40	60	100	3
9	N-HSSMME301T	Economics and Finance for Engineers	2	0	0	2	20	30	50	2
10	N-VECME301T	Universal Human Values	2	0	0	2	50	-	50	-
11	N-CEPME301	Community Engagement Project (CEP)	0	0	4	2	50	-	50	-
	OR									
	N-FPME301	Field Project (FP)								
12	N-MCME301	Indian Constitution	2	0	0	-	50	-	50	-
Total			22	1	6	24	415	385	800	-

Revision	BoS Meeting	Date	wef. Academic Year
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2nd YEAR SEMESTER-IV [NEP-COMPLIANT]

Scheme of Teaching & Examination of Bachelor of Technology, IV Semester B.Tech. (Mechanical Engineering)										
Sr. No	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PCCME401T	Fluid Mechanics	3	0	0	3	40	60	100	3
2	N-PCCME401P	Fluid Mechanics Lab	0	0	2	1	25	25	50	-
3	N-PCCME402T	Mechanics of Deformable Solids	2	0	0	2	20	30	50	2
4	N-PCCME402P	Mechanics of Deformable Solids Lab	0	0	2	1	25	25	50	-
5	N-PCCME403T	Manufacturing Processes	2	0	0	2	20	30	50	2
6	N-PCCME403P	Manufacturing Processes Lab	0	0	2	1	25	25	50	-
7	N-MDM	Multidisciplinary Minor Course: -2	3	0	0	3	40	60	100	3
8	N-OEC	Open Elective Course: - 2	3	0	0	3	40	60	100	3
9	N-SECME401P	Skill Enhancement Course: - 1	0	0	2	1	25	25	50	-
10	N-SECME402P	Skill Enhancement Course: - 2	0	0	2	1	25	25	50	-
11	N-AECME02	Ability Enhancement Course	2	0	0	2	50	-	50	-
12	N-HSSMME401T	Entrepreneurship Development	2	0	0	2	20	30	50	2
13	N-VECME401T	Environmental Studies	2	0	0	2	50	-	50	-
Total			19	0	10	24	405	395	800	-

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3rd YEAR SEMESTER-V [NEP-COMPLIANT]

Scheme of Teaching & Examination of Bachelor of Technology, V Semester B.Tech. (Mechanical Engineering)										
Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PCCME501T	Design of Machine Elements	3	0	0	3	40	60	100	3
2	N-PCCME502T	Heat Transfer	3	0	0	3	40	60	100	3
3	N-PCCME502P	Heat Transfer Lab	0	0	2	1	25	25	50	-
4	N-PCCME503T	Manufacturing Technology	2	0	0	2	20	30	50	2
5	N-PCCME503P	Manufacturing Technology Lab	0	0	2	1	25	25	50	-
6	N-PCCME504T	Measurements & Metrology	2	0	0	2	20	30	50	2
7	N-PCCME504P	Measurements & Metrology Lab	0	0	2	1	25	25	50	-
8	N-PCCME505P	Machine Drawing and Solid Modelling Lab	0	0	2	1	25	25	50	-
9	N-PEC	Program Elective: - 1	3	0	0	3	40	60	100	3
10	N-MDM	Multidisciplinary Minor Course: -3	3	0	0	3	40	60	100	3
11	N-OEC	Open Elective Course: - 3	2	0	0	2	20	30	50	2
Total			18	0	8	22	320	430	750	-

Program Elective: - 1		
Sr. No.	Course Code	Course Title
1	N-PECMES01T	Hydraulic Machines
2	N-PECMES02T	Optimization Techniques
3	N-PECMES03T	Control Systems Engineering

Revision	BoS Meeting	Date	wef. Academic Year
-	7 th	14-07-2023	2025-26

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3rd YEAR SEMESTER-VI [NEP-COMPLIANT]

Scheme of Teaching & Examination of Bachelor of Technology, VI Semester B.Tech. (Mechanical Engineering)

Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PCCME601T	Computer Aided Design	3	0	0	3	40	60	100	3
2	N-PCCME601P	Computer Aided Design Lab	0	0	2	1	25	25	50	-
3	N-PCCME602T	Energy Conversion-I	3	0	0	3	40	60	100	3
4	N-PCCME603T	Dynamics of Machines	3	0	0	3	40	60	100	3
5	N-PCCME603P	Dynamics of Machines Lab	0	0	2	1	25	25	50	-
6	N-PEC	Program Elective: - 2	3	0	0	3	40	60	100	3
7	N-PEC	Program Elective: - 3	3	0	0	3	40	60	100	3
8	N-MDM	Multidisciplinary Minor Course: - 4	3	0	0	3	40	60	100	3
9	N-SECME601P	Skill Enhancement Course: - 3	0	0	2	1	25	25	50	-
10	N-SECME602P	Skill Enhancement Course: - 4	0	0	2	1	25	25	50	-
Total			18	0	8	22	340	460	800	-

Program Elective: - 2

Sr. No.	Course Code	Course Title
1	N-PECME601T	Internal Combustion Engines
2	N-PECME602T	Industrial Engineering
3	N-PECME603T	Hydraulic and Pneumatic Systems

Program Elective: - 3

Sr. No.	Course Code	Course Title
1	N-PCCME604T	Refrigeration & Air Conditioning
2	N-PCCME605T	Automobile Engineering
3	N-PCCME606T	Environmental Engineering

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4th YEAR SEMESTER-VII [NEP-COMPLIANT]

Scheme of Teaching & Examination of Bachelor of Technology, VII Semester B.Tech. (Mechanical Engineering)										
Sr. No	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem Exam	Total	Duration (Hrs.)
1	N-PCCME701T	Energy Conversion-II	3	0	0	3	40	60	100	3
2	N-PCCME701P	Energy Conversion-II Lab	0	0	2	1	25	25	50	-
3	N-PCCME702T	Design of Mechanical Drives	3	0	0	3	40	60	100	3
4	N-PEC	Program Elective: - 4	3	0	0	3	40	60	100	3
5	N-PEC	Program Elective: - 5	3	0	0	3	40	60	100	3
6	N-MDM	Multidisciplinary Minor Course: - 5	2	0	0	2	20	30	50	2
7	N-PROJME701	Project: - I	0	0	8	4	75	75	150	-
Total			14	0	10	19	280	370	650	-

Program Elective: - 4		
Sr. No.	Course Code	Course Title
1	N-PECME701T	Power Plant Engineering
2	N-PECME702T	Statistics and Quality Control
3	N-PECME703T	Product Design and Development

Program Elective: - 5		
Sr. No.	Course Code	Course Title
1	N-PECME704T	Finite Element Analysis
2	N-PECME705T	Additive Manufacturing
3	N-PECME706T	Solar Energy Utilization

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-	7 th	14-07-2023	2026-27

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4th YEAR SEMESTER-VIII [NEP-COMPLIANT]

Scheme of Teaching & Examination of Bachelor of Technology, VIII Semester B.Tech. (Mechanical Engineering)										
Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PEC	Program Elective: - 6	3	0	0	3	40	60	100	3
2	N-RMEE801T	Research Methodology	3	0	0	3	40	60	100	3
3	N- PROJME801	Project-II	0	0	12	6	100	100	200	-
Total			6	0	12	12	180	220	400	-
OR										
1	N-ELCME801	Internship/On-Job Training (OJT)	One Semester			12	100	100	200	-

Program Elective: - 6		
Sr. No.	Course Code	Course Title
1	N-PECME801T	Renewable Energy Systems
2	N-PECME802T	Industrial Management
3	N-PECME803T	Automation in Manufacturing

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-	7 th	14-07-2023	2026-27