

**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  
With effect from 2022-2023**

**2<sup>nd</sup> YEAR**

**SEMESTER-III**

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	BSCME301T	Engineering Mathematics - III	3	1	0	4	40	60	100	3
2	PCCME307T	Kinematics of Machines	3	0	0	3	40	60	100	3
3	PCCME302T	Engineering Thermodynamics	4	0	0	4	40	60	100	3
4	PCCME303T	Material Science and Metallurgy	3	0	0	3	40	60	100	3
5	PCCME303P	Material Science and Metallurgy Lab	0	0	2	1	25	25	50	-
6	PCCME304T	Manufacturing Processes	3	0	0	3	40	60	100	3
7	PCCME304P	Manufacturing Processes Lab	0	0	2	1	25	25	50	-
8	PCCME305P	Machine Drawing and Solid Modeling Lab	0	0	2	1	25	25	50	-
9	PCCME306P	Algorithms & Data Structures Lab	0	0	4	2	25	25	50	-
10	PROJME302	Practice School-I (Internship of 1-2 week)	-	-	-	1	During Summer Vacations after II Semester			
<b>TOTAL</b>			<b>16</b>	<b>1</b>	<b>10</b>	<b>23</b>	<b>300</b>	<b>400</b>	<b>700</b>	<b>-</b>

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**SEMESTER-IV**

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	BSCME401T	Engineering Mathematics-IV	3	1	0	4	40	60	100	3
2	PCCME401T	Strength of Materials	3	0	0	3	40	60	100	3
3	PCCME401P	Strength of Materials Lab	0	0	2	1	25	25	50	-
4	PCCME402T	Fluid Mechanics and Machinery	3	0	0	3	40	60	100	3
5	PCCME402P	Fluid Mechanics and Machinery Lab	0	0	2	1	25	25	50	-
6	PCCME405T	Dynamics of Machines	3	0	0	3	40	60	100	3
7	PCCME405P	Dynamics of Machines Lab	0	0	2	1	25	25	50	-
8	PCCME404P	Python Programming Lab	0	0	2	1	25	25	50	-
9	OEC	Open Elective - I	3	0	0	3	40	60	100	3
10	HSMCME401P	Soft Skills - I	0	0	2	1	25	25	50	-
11	MCME401	Essence of Indian Traditional Knowledge	2	0	0	0	50	-	50	-
<b>TOTAL</b>			<b>17</b>	<b>1</b>	<b>10</b>	<b>21</b>	<b>375</b>	<b>425</b>	<b>800</b>	

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**3<sup>rd</sup> YEAR**

**SEMESTER-V**

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	PCCME501T	Design of Machine Elements	3	0	0	3	40	60	100	3
2	PCCME502T	Heat Transfer	3	0	0	3	40	60	100	3
3	PCCME502P	Heat Transfer Lab	0	0	2	1	25	25	50	-
4	PCCME503T	Manufacturing Technology	3	0	0	3	40	60	100	3
5	PCCME503P	Manufacturing Technology Lab	0	0	2	1	25	25	50	-
6	PEC	Program Elective - I	3	0	0	3	40	60	100	3
7	OEC	Open Elective - II	3	0	0	3	40	60	100	3
8	HSMCME501P	Soft Skills - II	0	0	2	1	25	25	50	-
9	PROJME501	Mini Project	0	0	4	2	25	25	50	-
10	PROJME502	Practice School - II (Internship of 2-3 week)	-	-	-	1	During Summer Vacations after IV Semester			
<b>TOTAL</b>			<b>15</b>	<b>0</b>	<b>10</b>	<b>21</b>	<b>300</b>	<b>400</b>	<b>700</b>	

**Program Elective - I**

Sr. No.	Course Code	Course Title
1	PECME501T	Industrial Economics and Entrepreneurship Development
2	PECME502T	Control Systems Engineering
3	PECME503T	Internal Combustion Engines

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**3<sup>rd</sup> YEAR**

**SEMESTER-VI**

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	PCCME601T	Applied Thermodynamics - I	3	0	0	3	40	60	100	3
2	PCCME602T	Computer Aided Design	3	0	0	3	40	60	100	3
3	PCCME602P	Computer Aided Design Lab	0	0	2	1	25	25	50	-
4	PCCME603T	Instrumentation and Metrology	3	0	0	3	40	60	100	3
5	PCCME603P	Instrumentation and Metrology Lab	0	0	2	1	25	25	50	-
6	PEC	Program Elective - II	3	0	0	3	40	60	100	3
7	HSMCME601T	Economics and Finance for Engineers	2	0	0	2	20	30	50	2
8	OEC	Open Elective - III	3	0	0	3	40	60	100	3
9	PROJME601	Industrial Case Study	0	0	4	2	50	-	50	-
10	HSMCME602P	Soft Skills - III	0	0	2	1	25	25	50	-
<b>TOTAL</b>			<b>17</b>	<b>0</b>	<b>10</b>	<b>22</b>	<b>345</b>	<b>405</b>	<b>750</b>	

**Program Elective - II**

Sr. No.	Course Code	Course Title
1	PECME601T	Statistics and Quality Control
2	PECME602T	Mechatronics
3	PECME603T	Chassis System Design

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## 4<sup>th</sup> YEAR

### SEMESTER-VII

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 Duration (Hrs.)
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	
1	PCCME701T	Applied Thermodynamics - II	3	0	0	3	40	60	100	3
2	PCCME701P	Applied Thermodynamics - II Lab	0	0	2	1	25	25	50	-
3	PEC	Program Elective - III	3	0	0	3	40	60	100	3
4	PEC	Program Elective - IV	3	0	0	3	40	60	100	3
5	OEC	Open Elective - IV	3	0	0	3	40	60	100	3
6	PROJME701	Project - I	0	0	6	3	100	0	100	-
7	PROJME702	Practice School - III Evaluation (Internship of 4-6 weeks during Summer Vacations after VI Semester)	0	0	0	2	100	-	100	-
<b>TOTAL</b>			<b>12</b>	<b>0</b>	<b>8</b>	<b>18</b>	<b>385</b>	<b>265</b>	<b>650</b>	<b>-</b>

#### Program Elective - III

Sr. No.	Course Code	Course Title
1	PECME701T	Industrial Engineering
2	PECME702T	Robotics
3	PECME703T	Introduction to Automotive Powertrains

#### Program Elective - IV

Sr. No.	Course Code	Course Title
1	PECME704T	Refrigeration and Air Conditioning
2	PECME705T	Finite Element Method
3	PECME706T	Non-Conventional Energy Sources

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## 4<sup>th</sup> YEAR

### SEMESTER-VIII

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	PCCME801T	Design of Mechanical Drives	3	0	0	3	40	60	100	3
2	PEC	Program Elective - V	3	0	0	3	40	60	100	3
3	PEC	Program Elective - VI	3	0	0	3	40	60	100	3
4	PROJME801	Project - II / One Semester Industry Project / Incubation	0	0	12	6	100	100	200	-
<b>TOTAL</b>			<b>9</b>	<b>0</b>	<b>12</b>	<b>15</b>	<b>220</b>	<b>280</b>	<b>500</b>	

#### Program Elective -V

Sr. No.	Course Code	Course Title
1	PECME801T	Production Planning and Control
2	PECME802T	Automation in Production
3	PECME803T	Hybrid Electric Vehicle Propulsion

#### Program Elective -VI

Sr. No.	Course Code	Course Title
1	PECME804T	Cryogenics
2	PECME805T	Computational Fluid Dynamics
3	PECME806T	Solar Energy Utilization

#### Abbreviations:

HSMC - Humanities and Social Sciences including Management Courses

BSC - Basic Sciences Courses

PCC - Professional Core Courses

PEC - Professional Elective Courses

OEC - Open Elective Courses

PROJ - Project

MC - Mandatory Courses

*AD Rajee*

*Dr. H. S. Bhatnagar*

*P. N. Jaiswal*

*H. M. Bhatnagar*

*A. K. Dhole*  
*(Dr. A. S. Dhole)*

*Dr. Akash Lambete*

*H. Hussain*

*Dr. M. S. Nimbarte*

*A. Tothi*