

**M.Tech. (Design and Production Engineering), Mechanical Engineering  
Course Structure (2 Years/4 Semesters Regular)**

<b>A</b>			
<b>Program Core Courses</b>			
<b>Sl No.</b>	<b>Course No.</b>	<b>Course Title</b>	<b>Credit Hours</b>
1	TME 507	Theory of Elasticity and Plasticity	3(3-0-0)
2	TME 508	Advanced Engineering Materials	3(3-0-0)
3	TME 509	Finite Element Method	3(3-0-0)
4	TME 510	Advanced Manufacturing Processes	3(3-0-0)
5	TME 517	Design Lab-I	2(0-0-4)
6	TME 518	Design Lab-II	2(0-0-4)
<b>Sub Total</b>			<b>16</b>
<b>B</b>			
<b>Compulsory Common Courses</b>			
1	TIP/TIT/TEC-649	Research Methodology and IPR	2(2-0-0)
2	TME 690A	Master's Seminar-I	1(0-0-1)
3	TME 690B	Master's Seminar-II	1(0-0-1)
<b>Sub Total</b>			<b>04</b>
<b>C</b>			<b>18</b>
<b>Program Electives*</b>			
<b>D</b>			<b>30</b>
<b>Master's Thesis Research</b>			
<b>Total Program (A+B+C+D) Credits</b>			<b>68</b>

**M.Tech. (Thermal Engineering), Mechanical Engineering  
Course Structure (2 Years/4 Semesters Regular)**

<b>A</b>			
<b>Program Core Courses</b>			
<b>Sl No.</b>	<b>Course No.</b>	<b>Course Title</b>	<b>Credit Hours</b>
1	TME 513	Advanced Gas Dynamics	3(3-0-0)
2	TME 514	Advanced Fluid Dynamics	3(3-0-0)
3	TME 515	Conduction and radiation	3(3-0-0)
4	TME 516	Convective Heat Transfer	3(3-0-0)
5	TME 527	Thermal Lab-I	2(0-0-4)
6	TME 528	Thermal Lab-II	2(0-0-4)
<b>Sub Total</b>			<b>16</b>
<b>B</b>			
<b>Compulsory Common Courses</b>			
1	TIP/TIT/TEC-649	Research Methodology and IPR	2(2-0-0)
2	TME 690A	Master's Seminar-I	1(0-0-1)
3	TME 690B	Master's Seminar-II	1(0-0-1)
<b>Sub Total</b>			<b>04</b>
<b>C</b>			<b>18</b>
<b>Program Electives*</b>			
<b>D</b>			<b>30</b>
<b>Master's Thesis Research</b>			
<b>Total Program (A+B+C+D) Credits</b>			<b>68</b>

### Program Elective Courses

TME 602	Advanced Thermodynamics	3(3-0-0)
TME 603	Fluid Dynamics of Turbomachines	3(3-0-0)
TME 604	Power Generated Pollution	3(3-0-0)
TME 610	Solar Thermal Processes	3(3-0-0)
TME 611	Solar Energy	3(3-0-0)
TME 614	Refrigeration and Cryogenics	3(3-0-0)
TME 615	Advanced Air conditioning	3(3-0-0)
TME 616	Thermal System Simulation and Design	3(3-0-0)
TME 617	Advanced I.C. Engines	3(3-0-0)
TME 618	Advanced Automobile Engineering	3(3-0-0)
TME 619	Principles of Combustion	3(3-0-0)
TME 623	Compressible Fluid Flow	3(3-0-0)
TME 624	Experimental methods in Thermal Engineering	3(3-0-0)
TME 625	Computational Fluid Dynamics	3(3-0-0)
TME 656	Advanced Computer Aided Design	3(3-0-0)
TME 657	Robotics	3(3-0-0)
TME 658	Tribology	3(3-0-0)
TME 659	Quality Engineering and Reliability	3(3-0-0)
TME 663	Engineering Fracture Mechanics	3(3-0-0)
TME 664	Advanced Machine Design	3(3-0-0)
TME 665	Mechanics of Metal Forming Processes	3(3-0-0)
TME 666	Advanced Vibrations and Acoustics	3(3-0-0)
TME 667	Advanced Stress Analysis	3(3-0-0)
TME 668	Advances in Measurement and Metrology	3(3-0-0)

- (1) The relevant PG course offered by the other departments of College of Technology and Department of Maths, Statistics and Computer Science (CBSH) may also be opted as Program Elective.
- (2) Any relevant course of 3 Credits may be taken from the MOOC courses available on SWAYAM Portal. The Credits of such MOOC courses will be accepted and be considered in lieu of Program Elective courses listed.

### Thesis Research Course

SI No.	Course Title	Course No.	Total Credits
1	Master's Thesis Research (Existing in Mechanical Engineering with 20 credits , to be revised to 30 credits)	TME 690	30

**Ph.D.- Mechanical Engineering**  
**Course Structure (3 Years/6 Semesters Regular)**

<b>A</b>			
<b>Program Courses</b>			
Courses as advised by advisory committee from the list of PG courses offered by the department totaling to minimum 9 credits			<b>9</b>
<b>B</b>			
<b>Compulsory Supporting Courses</b>			
Sl. No.	Course No.	Course Name	Credit Hours
1	BHS-652	Research Methodology I	1(1-0-0)
2	BHS-653	Research Methodology II	3(3-0-0)
3	#	Research and Publication Ethics	2(1-0-1)
4	TME-788	Doctoral Seminar-I	1(0-0-1)
5	TME-789	Doctoral Seminar-II	1(0-0-1)
<b>Sub Total</b>			<b>08</b>
<b>Total credits of Course work (A+B)</b>			<b>17</b>
<b>C</b>			
<b>Thesis Research TME-790</b>			<b>84</b>
<b>Total Program Credits (A+B+C)</b>			<b>101</b>

# to be decided as common

**Total of minimum 9 Credits shall be required to study from the list of PG courses with additional marginal adjustment of 1 Credit**

- (1) The relevant PG course offered by the other departments of College of Technology and Department of Maths, Statistics and Computer Science (CBSH) may also be opted as Program Elective.
- (2) Any relevant course of 3 Credits may be taken from the MOOC courses available on SWAYAM Portal. The Credits of such MOOC courses will be accepted and be considered in lieu of Program Elective courses listed.

**Thesis Research Course**

Sl No.	Course Title	Course No.	Total Credits
1	Ph.D. Thesis Research (Existing in Mechanical Engineering with 45 credits , to be revised to 84 credits)	TME 790	84

## List of Proposed Post Graduate Courses of Mechanical Engineering Department

TME 507	Theory of Elasticity and Plasticity	3(3-0-0)
TME 508	Advanced Engineering Materials	3(3-0-0)
TME 509	Finite Element Method	3(3-0-0)
TME 510	Advanced Manufacturing Processes	3(3-0-0)
TME 513	Advanced Gas Dynamics	3(3-0-0)
TME 514	Advanced Fluid Dynamics	3(3-0-0)
TME 515	Conduction and radiation	3(3-0-0)
TME 516	Convective Heat Transfer	3(3-0-0)
TME 517	Design Lab-I	2(0-0-4)
TME 518	Design Lab-II	2(0-0-4)
TME 527	Thermal Lab-I	2(0-0-4)
TME 528	Thermal Lab-II	2(0-0-4)
TME 602	Advanced Thermodynamics	3(3-0-0)
TME 603	Fluid Dynamics of Turbomachines	3(3-0-0)
TME 604	Power Generated Pollution	3(3-0-0)
TME 610	Solar Thermal Processes	3(3-0-0)
TME 611	Solar Energy	3(3-0-0)
TME 614	Refrigeration and Cryogenics	3(3-0-0)
TME 615	Advanced Air conditioning	3(3-0-0)
TME 616	Thermal System Simulation and Design	3(3-0-0)
TME 617	Advanced I.C. Engines	3(3-0-0)
TME 618	Advanced Automobile Engineering	3(3-0-0)
TME 619	Principles of Combustion	3(3-0-0)
TME 623	Compressible Fluid Flow	3(3-0-0)
TME 624	Experimental methods in Thermal Engineering	3(3-0-0)
TME 625	Computational Fluid Dynamics	3(3-0-0)
TME 656	Advanced Computer Aided Design	3(3-0-0)
TME 657	Robotics	3(3-0-0)
TME 658	Tribology	3(3-0-0)
TME 659	Quality Engineering and Reliability	3(3-0-0)
TME 663	Engineering Fracture Mechanics	3(3-0-0)
TME 664	Advanced Machine Design	3(3-0-0)
TME 665	Mechanics of Metal Forming Processes	3(3-0-0)
TME 666	Advanced Vibrations and Acoustics	3(3-0-0)
TME 667	Advanced Stress Analysis	3(3-0-0)
TME 668	Advances in Measurement and Metrology	3(3-0-0)
TME 703	Optimization Techniques in Engineering	3(3-0-0)
TME 704	Mechanics of Composite Materials	3(3-0-0)
TME 705	Advanced Finite Element Method	3(3-0-0)
TME 690	Master's Thesis Dissertation	30
TME 690A	Master Seminar I	1
TME 690B	Master Seminar II	1
TME 788	Doctoral Seminar I	1
TME 789	Doctoral Seminar II	1
TME 790	Ph.D. Thesis	84