

## **POST GRADUATE COURSE CATALOGUE: MECHANICAL ENGINEERING**

### **M. Tech in Mechanical Engineering (Design & Production Engineering)**

<b>Core Courses (14 credits)</b>		
TME-600	Master's Seminar	1
TME-635	Computer Aided Mechanical Design	3(3-1-0)
TME-651	Advanced Material Science	3(3-1-0)
TME-652	Stress Analysis	2(2-1-0)
TME-655	Mechanics of Metal Forming Processes	3(3-1-0)
TME-662	Advances in Measurement and Metrology	2(2-1-0)
<b>Basic Supporting Courses (7 credits)</b>		
BPC-512	Radioisotopic Techniques in Mechanical Engineering	1(0-0-1)
BPM-621	Numerical Techniques for Computers	3(3-2-0)
BPM-622	Numerical Solution of Partial Differential Equations	3(3-1-0)
<b>Optional/Minor Courses (9 credits)</b>		
<b>Thesis Research (20 Credits)</b>		
TME-690 Master's Thesis Research		
<b>TOTAL</b>	<b>50</b>	

### **M. Tech in Mechanical Engineering (Thermal Engineering)**

<b>Core Courses (13 credits)</b>		
TME-502	Advanced Heat Transfer-I	2(2-1-0)
TME-503	Advanced Heat Transfer-II	2(2-1-0)
TME-504	Principles of Combustion	2(2-1-0)
TME-505	Advanced Thermodynamics	2(2-1-0)
TME-511	Fluid Dynamics	2(2-1-0)
TME-512	Gas Dynamics	2(2-1-0)
TME-600	Master's Seminar	1
<b>Basic Supporting Courses (7 credits)</b>		
BPC-512	Radioisotopic Techniques in Mechanical Engineering	1(0-0-1)
BPM-621	Numerical Techniques for Computers	3(3-2-0)
BPM-622	Numerical Solution of Partial Differential Equations	3(3-1-0)

<b>Optional/Minor Courses (10 credits)</b>	
<b>Thesis Research (20 Credits)</b>	
TME-690 Master's Thesis Research	
<b>TOTAL</b>	<b>50</b>

### PhD in Mechanical Engineering

<b>Core Courses (10 credits)</b>		
TME-731	Industrial Instrumentation	3(2-0-1)
TME-771	Optimization Techniques in Engineering	2(2-1-0)
TME-773	Finite Element Methods in Engineering	3(2-0-1)
TME-788	Doctoral Seminar-I	1
TME-789	Doctoral Seminar-II	1
<b>Basic Supporting Courses (4 credits)</b>		
BHS-652	Research Methodology-I	1(1-0-0)
BPS-653	Research Methodology-II	3(2-0-1)
<b>Optional/Minor Courses (6 credits)</b>		
<b>Minor Package (10 credits)</b>		
<b>Thesis Research (45 Credits)</b>		
TME-790 PhD Thesis Research		
<b>TOTAL</b>	<b>75</b>	

<b>Compulsory courses for Minor for Other Disciplines</b>		
TME-502	Advanced Heat Transfer-I	2(2-1-0)
TME-503	Advanced Heat Transfer-II	2(2-1-0)
<b>OR</b>		
TME-652	Stress Analysis	2(2-1-0)
TME-635	Computer Aided Mechanical Design	3(3-1-0)

### List of Post Graduate Courses of the Department

TME-502	Advanced Heat Transfer-I	2(2-1-0)
TME-503	Advanced Heat Transfer-II	2(2-1-0)
TME-504	Principles of Combustion	2(2-1-0)
TME-505	Advanced Thermodynamics	2(2-1-0)
TME-511	Fluid Dynamics	2(2-1-0)
TME-512	Gas Dynamics	2(2-1-0)
TME-541	Mechanical Handling	2(2-1-0)
TME-542	Vibration Analysis	2(2-1-0)
TME-582	Instrumentation and Automatic Controls	2(2-1-0)
TME-600	Master's Seminar	1
TME-601	Special Problem	1
TME-605	I.C.Engines-I	2(2-1-0)
TME-606	I.C.Engines-II	2(2-1-0)
TME-607	Refrigeration	2(2-1-0)
TME-608	Air Conditioning	2(2-1-0)
TME-609	Industrial Heat Transfer	2(2-1-0)
TME-612	Fluid Dynamics of Turbo-Machines	2(2-1-0)
TME-613	Design of Rotodynamic Machine	2(2-1-0)
TME-621	Solar Energy	2(2-1-0)
TME-633	Friction Wear and Lubrication	2(2-1-0)
TME-634	Advanced Machine Design	3(3-1-0)
TME-635	Computer Aided Mechanical Design	3(3-1-0)
TME-651	Advanced Material Science	3(3-1-0)
TME-652	Stress Analysis	2(2-1-0)
TME-653	Engineering Fracture Mechanics	3(3-1-0)
TME-654	Theory of Elasticity and Plasticity	3(3-1-0)
TME-655	Mechanics of Metal Forming Processes	3(3-1-0)
TME-661	Metal Cutting	2(2-1-0)
TME-662	Advances in Measurement and Metrology	2(2-1-0)
TME-690	Master's Thesis Research	20
TME-702	Numerical Methods in Heat Transfer	3(2-0-1)
TME-711	Theory of Compressible Flow	3(2-0-1)
TME-721	Solar Energy Thermal Processes	3(2-0-1)
TME-722	Design of Thermal Systems	3(2-0-1)
TME-723	Power Generated Pollution	3(2-0-1)
TME-731	Industrial Instrumentation	3(2-0-1)
TME-753	Mechanics of Composite Materials	3(2-0-1)

TME-771	Optimization Techniques in Engineering	2(2-1-0)
TME-772	Reliability Engineering	3(2-0-1)
TME-773	Finite Element Methods in Engineering	3(2-0-1)
TME-788	Doctoral Seminar-I	1
TME-789	Doctoral Seminar-II	1
TME-790	Ph.D. Thesis Research	45