



**Bachelor Of Technology (B. Tech.) In Mechanical Engineering (ME) With  
Specialization (Hons.) In Design Engineering**

**Course Structure**

**FIRST YEAR**

<b>SEMESTER I</b>								
<b>S. No</b>	<b>Type</b>	<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Contact Hrs/wk</b>	<b>Credits</b>
1	Theory	<b>SMA41101</b>	Engineering Mathematics-I	3	1	0	4	4
2	Theory		Applied Science (Physics+Chemistry)	3	0	0	3	3
3	Theory	<b>ECS41101 / EEE41102</b>	Introduction to Programming / Electrical and Electronics Technology	3	0	0	3	3
4	Theory	<b>HEN41117</b>	HSSM –I (English Communication-I)	3	0	0	3	3
5	Theory	<b>HEN41119 / SBT41108</b>	HSSM –II (Human Values & Ethics and Psychology) / Life Sciences	3	0	0	3	3
6	Practical		Applied Science Lab	0	0	3	3	2
7	Practical	<b>ECS41201 / EEE41202</b>	Programming Lab / Electrical and Electronics Technology Lab	0	0	3	3	2
8	Practical	<b>ECE41201/ EME41204</b>	Engineering Drawing and CAD/Engineering Workshop	0	0	3	3	2
9	Practical	<b>EMC41201</b>	Communication and Collaboration Skill -I	0	0	2	2	1
10	Practical		Avant Garde Project-I	0	0	2	2	1
<b>Total</b>				<b>15</b>	<b>1</b>	<b>13</b>	<b>29</b>	<b>24</b>

<b>SEMESTER II</b>								
<b>S. No</b>	<b>Type</b>	<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Contact Hrs/wk</b>	<b>Credits</b>
1.	Theory	<b>SMA41102</b>	Engineering Mathematics– II	3	1	0	4	4.0
2.	Theory	<b>EEE41102 / ECS41101</b>	Electrical and Electronics Technology/ Introduction to Programming	3	0	0	3	3.0
3.	Theory	<b>SBT41108 / HEN41119</b>	Life Sciences/HSSM –II (Human Values & Ethics and Psychology)	3	0	0	3	3.0
4.	Theory	<b>EME41102</b>	Engineering Mechanics	3	1	0	4	4.0
5.	Theory	<b>SGY41113</b>	Environmental Science	3	0	0	3	3

6.	Practical	<b>EEE41202 / ECS41201</b>	Electrical and Electronics Technology Lab/ Programming Lab	0	0	3	3	2.0
7.	Practical	<b>EME41204/ ECE41201</b>	Engineering Workshop/Engineering Drawing and CAD	0	0	3	3	2.0
8.	Practical	<b>EMC41202</b>	Communication and Collaboration Skill - II	0	0	2	2	1
9.	Practical		Avant Garde Project-II	0	0	2	2	1
<b>Total</b>				<b>15</b>	<b>2</b>	<b>10</b>	<b>27</b>	<b>23</b>

## SECOND YEAR

Semester-III								
S. No	Type	Course Code	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	Theory	<b>SMA42113</b>	Engineering Mathematics– IIIA	3	1	0	4	4
2.	Theory	<b>EME42109</b>	Materials Engineering	3	0	0	3	3
3.	Theory	<b>HEC42180</b>	HSSM –IV (Economics for Engineers)	3	0	0	3	3
4.	Theory	<b>EME42111</b>	Prof. Core- I: Mechanics of Materials	3	0	0	3	3
5.	Theory	<b>EME42113</b>	Prof. Core- II: Fluid Mechanics	3	0	0	3	3
6.	Theory	<b>EME42115</b>	Prof. Core- III: Engg. Thermodynamics	3	0	0	3	3
7.	Practical	<b>EME42209</b>	Prof. Core Lab- Material Testing Lab	0	0	3	3	2
8.	Practical		Design Thinking-I	0	0	3	3	2
9.	Practical		Avant Garde Project-III	0	0	2	2	1
10.	Practical		#Adamas Foundation (Community Service)	--	--	-	--	1
<b>Total</b>				<b>18</b>	<b>1</b>	<b>8</b>	<b>27</b>	<b>25</b>

Semester-IV								
S. No	Type	Course Code	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	Theory	<b>SMA42116</b>	Numerical Techniques	2	1	0	3	3
2.	Theory	<b>EME42112</b>	Prof. Core-IV: Fluid Machinery	3	0	0	3	3

3.	Theory	<b>EME42114</b>	Prof. Core- V: Manufacturing Technology-I	3	0	0	3	3
4.	Theory	<b>EME42116</b>	Prof. Core- VI: Kinematics of Machines	3	0	0	3	3
5.	Theory	<b>EME42118</b>	Prof. Core- VII: Design of Machine Elements	3	0	0	3	3
6.	Practical	<b>SMA42216</b>	Numerical Techniques Lab	0	0	3	3	2
7.	Practical	<b>EME42212</b>	Prof. Core Lab- Fluid Mechanics & Hydraulic Machinery Lab	0	0	3	3	2
8.	Practical	<b>EME42214</b>	Prof. Core Lab- Manufacturing Technology-I Lab	0	0	3	3	2
9.	Practical		Interdisciplinary Project AU	0	0	5	5	3
10.	Practical		Design Thinking-II	0	0	3	3	2
11.	Practical		Avant Garde Project-IV	0	0	2	2	1
<b>Total</b>				<b>14</b>	<b>1</b>	<b>19</b>	<b>34</b>	<b>27</b>

### THIRD YEAR

Semester-V								
S. No	Type	Course Code	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	Theory	<b>EME43115</b>	Prof. Core- VIII: Applied Thermodynamics	3	0	0	3	3
2.	Theory	<b>EME43119</b>	Prof. Core- IX: Manufacturing Technology- II	3	0	0	3	3
3.	Theory	<b>EME43121</b>	Prof. Core- X: Dynamics of Machines	3	0	0	3	3
4.	Theory	<b>EME43137</b>	Specialization Course-I: Design of Transmission Systems	3	1	0	4	4
5.	Theory		Prof. Elective- I ( <i>Materials &amp; Manufacturing Domain</i> )	3	0	0	3	3
6.	Practical	<b>EME43219</b>	Prof. Core Lab- Manufacturing Technology- II Lab	0	0	3	3	2
7.	Practical	<b>EME43221</b>	Prof. Core Lab-	0	0	3	3	2

			Kinematics & Dynamics of Machines Lab					
8.	Practical	<b>EME43223</b>	Prof. Core Lab- Machine Drawing with AutoCAD	0	0	3	3	2
9.	Practical	<b>EME43225</b>	Specialization Lab-I: Design Modelling Lab	0	0	3	3	2
10.	Practical		Venture Ideation	0	0	2	2	1
11.	Practical		Avant Garde Project-V	0	0	2	2	1
<b>Total</b>				<b>15</b>	<b>1</b>	<b>16</b>	<b>32</b>	<b>26</b>

<b>Semester-VI</b>								
<b>S. No</b>	<b>Type</b>	<b>Course Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Contact Hrs/week</b>	<b>Credits</b>
1.	Theory	<b>EME43116</b>	Prof. Core- XI: Heat Transfer	3	0	0	3	3
2.	Theory	<b>EME43118</b>	Prof. Core- XII: Metrology & Measurement	3	0	0	3	3
3.	Theory		Prof. Elective- II: ( <i>Materials &amp; Manufacturing/Thermal Domain</i> )	3	0	0	3	3
4.	Theory		Open Elective- I	2	0	0	2	2
5.	Theory	<b>EME43134</b>	Specialization Course-II: Finite Element Analysis	3	1	0	4	4
6.	Theory	<b>EME43136</b>	Specialization Course-III: Mechanical System Design	3	0	0	3	3
7.	Practical	<b>EME43216</b>	Prof. Core Lab- Applied Thermodynamics & Heat Transfer Lab	0	0	3	3	2
8.	Practical	<b>EME43218</b>	Prof. Core Lab- Metrology & Measurement Lab	0	0	3	3	2
9.	Practical		Prof. Elective-II Lab	0	0	3	3	2
10.	Practical	<b>EME43228</b>	Specialization Lab-II: Design Analysis Lab	0	0	3	3	2
<b>Total</b>				<b>17</b>	<b>1</b>	<b>12</b>	<b>30</b>	<b>26</b>

#### FOURTH YEAR

<b>Semester-VII</b>								
<b>S. No</b>	<b>Type</b>	<b>Course Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Contact Hrs/week</b>	<b>Credits</b>

1.	Theory	<b>MBA43144</b>	HSSM –V (Industrial Management)	3	0	0	3	3
2.	Theory		Prof. Elective- III ( <i>Design Domain</i> )	3	0	0	3	3
3.	Theory		Prof. Elective- IV ( <i>Materials &amp; Manufacturing/Thermal Domain</i> )	3	0	0	3	3
4.	Theory		Open Elective- II	3	0	0	3	3
5.	Theory		Open Elective- III	3	0	0	3	3
6.	Theory	<b>EME44147</b>	Specialization Course-IV: Engineering Failure Analysis	3	0	0	3	3
7.	Practical		Prof. Elective-IV Lab	0	0	3	3	2
8.	Practical	<b>EME44227</b>	Specialization Lab-III: Thematic Design Lab	0	0	3	3	2
9.	Practical	<b>EME44601</b>	Summer Internship <sup>#</sup>	--	-	--	--	2
10.	Practical	<b>EME44403</b>	Minor Project	0	0	6	6	3
<b>Total</b>				<b>18</b>	<b>0</b>	<b>12</b>	<b>30</b>	<b>27</b>

<b>Semester-VIII</b>								
<b>S. No</b>	<b>Type</b>	<b>Course Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Contact Hrs/week</b>	<b>Credits</b>
1.	Theory	<b>EME44130</b>	Specialization Course-V: Industrial Design (Online/Offline mode )	3	0	0	03 (For Offline mode only)	3
2.	Practical	<b>EME44602 / EME44604 /EME44404</b>	Industry Work Experience / SIRE* / Major Project	0	0	9	09 (For Major Project work only)	5
3.	Practical	<b>EME44502</b>	Comprehensive Viva Voce	-----			-----	2
4.	Practical	<b>EME44504</b>	Specialization Viva Voce	-----			-----	2
<b>Total</b>				<b>3</b>	<b>0</b>	<b>9</b>	<b>12</b>	<b>12</b>

### Specializations: Design Engineering

<b>EME43137</b>	Specialization Course-I: Design of Transmission Systems
<b>EME43134</b>	Specialization Course-II: Finite Element Analysis
<b>EME43136</b>	Specialization Course-III: Mechanical System Design
<b>EME44147</b>	Specialization Course-IV: Engineering Failure Analysis
<b>EME44130</b>	Specialization Course-V: Industrial Design (Online/Offline mode )
<b>EME44504</b>	Specialization Viva Voce
<b>EME43225</b>	Specialization Lab-I: Design Modelling Lab
<b>EME43228</b>	Specialization Lab-II: Design Analysis Lab
<b>EME44227</b>	Specialization Lab-III: Thematic Design Lab