

Courses Under Semester System  
BSc Mechanical Engineering

**Credit Hours**

**1st Semester**

<b>Course No.</b>	<b>Course Title</b>	<b>Part I</b>	<b>Part II</b>
GS-101	Calculus and Analytical Geometry	3	0
HS-101	Functional English	2	0
CS-101	Computer System & Programing	2	1
GS-102	Applied Physics	2	1
ME-111	Engineering Drawing & Graphics	2	2
GS-103	Applied Chemistry	2	0
<b>Total:</b>		<b>13</b>	<b>4</b>
<b>Semester Total for Part-I &amp; II</b>			<b>17</b>

**2nd Semester**

**Credit Hours**

<b>Course No.</b>	<b>Course Title</b>	<b>Part I</b>	<b>Part II</b>
IS-101	Islamic Studies / Ethics	2	0
EE-101	Electrical Engineering	2	1
HS-102	Communication Skills	2	0
GS-104	Linear Algebra and Ordinary Differential Equations	3	0
ME-112	Workshop Practice	1	1
ME-113	Engineering Statics	2	1
ME-121	Thermodynamics-I	3	0
<b>Total:</b>		<b>15</b>	<b>3</b>
<b>Semester Total for Part-I &amp; II</b>			<b>18</b>
<b>Total for 1st Year</b>			<b>35</b>

**3rd Semester**

**Credit Hours**

<b>Course No.</b>	<b>Course Title</b>	<b>Part I</b>	<b>Part II</b>
IS-201	Pakistan Studies	2	0
ME-211	Engineering Dynamics	2	1
ME-212	Mechanics of Materials-I	3	1
ME-213	Engineering Materials	2	1
ME-221	Thermodynamics-II	2	1
ME-222	Fluid Mechanics-I	3	1
<b>Total:</b>		<b>14</b>	<b>5</b>
<b>Semester Total for Part-I &amp; II</b>			<b>19</b>

**4th Semester**

**Credit Hours**

<b>Course No.</b>	<b>Course Title</b>	<b>Part I</b>	<b>Part II</b>
EE-201	Electronics Engineering	2	1
GS-201	Complex Variables and Transforms	2	0
ME-214	Machine Design & CAD-I	2	1
ME-215	Mechanics of Materials-II	3	1
ME-223	Fluid Mechanics-II	3	1

GS-202	Social Sciences	2	0
<b>Total:</b>		<b>14</b>	<b>4</b>
<b>Semester Total for Part-I &amp; II</b>			<b>18</b>
<b>Total for Second Year</b>			<b>37</b>

<b>5th Semester</b>		<b>Credit Hours</b>	
<b>Course No.</b>	<b>Course Title</b>	<b>Part I</b>	<b>Part II</b>
HS-301	Technical Report Writing and Presentation Skills	2	0
GS-301	Numerical Analysis	3	0
ME-311	Machine Design & CAD-II	3	1
ME-312	Precision Engineering & Metrology	2	1
ME-313	Manufacturing Processes	3	1
<b>Total</b>		<b>13</b>	<b>3</b>
<b>Semester Total for Part-I &amp; II</b>			<b>16</b>

<b>6th Semester</b>		<b>Credit Hours</b>	
<b>Course No.</b>	<b>Course Title</b>	<b>Part I</b>	<b>Part II</b>
GS-302	Applied Statistics	2	0
ME-314	Control Engineering	2	1
ME-315	Mechanics of Machines	3	1
ME-321	Power Plants	2	1
ME-322	Heat and Mass Transfer	3	1
<b>Total:</b>		<b>12</b>	<b>4</b>
<b>Semester Total for Part-I &amp; I</b>			<b>16</b>
<b>Total for Third Year</b>			<b>32</b>

<b>7th Semester</b>		<b>Credit Hours</b>	
<b>Course No.</b>	<b>Course Title</b>	<b>Part I</b>	<b>Part II</b>
MS-401	Engineering Economics	2	0
ME-411	Mechanical Vibrations	3	1
ME-421	Internal Combustion Engines	2	1
ME-422	Refrigeration and Air Conditioning	3	1
ME-499	Design Project	0	3
<b>Total:</b>		<b>10</b>	<b>6</b>
<b>Semester Total for Part-I &amp; II</b>			<b>16</b>

<b>8th Semester</b>		<b>Credit Hours</b>	
<b>Course No.</b>	<b>Course Title</b>	<b>Part I</b>	<b>Part II</b>
ME-412	Advanced Manufacturing Systems	2	1
ME-413	Finite Element Methods	2	1
ME-4XY	Technical Elective Course	2	1
ME-4XY	Management Electives	2	0
ME-499	Design Project	0	3
<b>Total:</b>		<b>8</b>	<b>6</b>
<b>Semester Total for Part-I &amp; II</b>			<b>14</b>
<b>Total for Final Year</b>			<b>30</b>
<b>Grand Total for Four Years</b>			<b>134</b>

## List of Elective Courses

### Technical Electives: (ME-4XY)

- a. ME-414 Maintenance Engineering
- b. ME-415 Introduction to Mechatronics
- c. ME-416 Tribology
- d. ME-417 Mechanical Engineering Design Analysis
- e. ME-423 Renewable Energy Technology
- f. ME-424 Gas Dynamics
- g. ME-425 Aerodynamics
- h. ME-426 Computational Fluid Dynamics (CFD)
- i. ME-427 Nuclear Engineering
- j. ME-428 Stress Analysis

### Management Electives: (ME-4XY)

1. MS-402 Operations Management
2. MS-403 Total Quality Management
3. MS-404 Project Management
4. MS-405 Operations Research
5. MS-406 Engineering Law
6. MS-407 Business and Entrepreneurship
7. MS-408 Safety Health and Environment
8. MS-409 Environment and Health