

MIRPUR UNIVERSITY OF SCIENCE & TECHNOLOGY  
BACHELOR'S DEGREE PROGRAM IN MECHANICAL ENGINEERING

**SCHEME OF STUDIES 2019-23**

**Semester 1**

| Sr. No.                 | Course Code & Title |                                  | Theory Credit Hours | Lab. Credit Hours | Total Credit Hours | Pre-Requisites |
|-------------------------|---------------------|----------------------------------|---------------------|-------------------|--------------------|----------------|
| 1                       | GSM-111             | Calculus & Analytical Geometry   | 3                   | 0                 | 3                  | None           |
| 2                       | GSM-112             | Applied Physics                  | 1                   | 1                 | 2                  | None           |
| 3                       | GSM-113             | Applied Chemistry                | 2                   | 0                 | 2                  | None           |
| 4                       | HSM-114             | Functional English               | 2                   | 0                 | 2                  | None           |
| 5                       | CSM-115             | Computer System & Programming    | 2                   | 1                 | 3                  | None           |
| 6                       | BME-116             | Engineering Drawing & Graphics   | 1                   | 1                 | 2                  | None           |
| 7                       | BME-117             | Engineering Mechanics-I          | 3                   | 0                 | 3                  | None           |
| 8                       | HSM-118             | Introduction to Chinese Language | 0                   | 0                 | 0                  | None           |
| <b>Total</b>            |                     |                                  | <b>14</b>           | <b>3</b>          | <b>17</b>          |                |
| <b>Cumulative Total</b> |                     |                                  | <b>14</b>           | <b>3</b>          | <b>17</b>          |                |

**Semester 2**

| Sr. No.                 | Course Code & Title |  | Theory Credit Hours | Lab. Credit Hours | Total Credit Hours | Pre-Requisites |
|-------------------------|---------------------|--|---------------------|-------------------|--------------------|----------------|
| 1                       | BME-121             | Computer Aided Drawing                           | 0                   | 1                 | 1                  | None           |
| 2                       | BME-122             | Engineering Materials                            | 3                   | 0                 | 3                  | None           |
| 3                       | GSM-123             | Linear Algebra & Ordinary Differential Equations | 3                   | 0                 | 3                  | None           |
| 4                       | BME-124             | Engineering Mechanics-II                         | 3                   | 1                 | 4                  | None           |
| 5                       | BME-125             | Workshop Practice                                | 0                   | 2                 | 2                  | None           |
| 6                       | ISM-126             | Arabic   | 2                   | 0                 | 2                  | None           |
| 7                       | BME-127             | Thermodynamics-I                                 | 3                   | 0                 | 3                  | None           |
| <b>Total</b>            |                     |  | <b>14</b>           | <b>4</b>          | <b>18</b>          |                |
| <b>Cumulative Total</b> |                     |  | <b>28</b>           | <b>7</b>          | <b>35</b>          |                |

**Semester 3**

| Sr. No.                 | Course Code & Title |                                  | Theory Credit Hours | Lab. Credit Hours | Total Credit Hours | Pre-Requisites |
|-------------------------|---------------------|----------------------------------|---------------------|-------------------|--------------------|----------------|
| 1                       | HSM-231             | Communication Skills             | 1                   | 0                 | 1                  | None           |
| 2                       | BME-232             | Mechanics of Materials-I         | 3                   | 0                 | 3                  | None           |
| 3                       | ISM-233             | Pakistan Studies                 | 2                   | 0                 | 2                  | None           |
| 4                       | BME-234             | Thermodynamics-II                | 3                   | 1                 | 4                  | BME-127        |
| 5                       | BEE-235             | Electrical Engineering           | 2                   | 1                 | 3                  | None           |
| 6                       | GSM-236             | Complex Variables and Transforms | 3                   | 0                 | 3                  | None           |
| <b>Total</b>            |                     |                                  | <b>14</b>           | <b>2</b>          | <b>16</b>          |                |
| <b>Cumulative Total</b> |                     |                                  | <b>42</b>           | <b>9</b>          | <b>51</b>          |                |

**Semester 4**

| Sr. No.                 | Course Code & Title |                           | Theory Credit Hours | Lab. Credit Hours | Total Credit Hours | Pre-Requisites |
|-------------------------|---------------------|---------------------------|---------------------|-------------------|--------------------|----------------|
| 1                       | BEE-241             | Electronics Engineering   | 2                   | 1                 | 3                  | None           |
| 2                       | GSM-242             | Numerical Analysis        | 2                   | 1                 | 3                  | None           |
| 3                       | ISM-243             | Islamic Studies/Ethics    | 2                   | 0                 | 2                  | None           |
| 4                       | BME-244             | Mechanics of Materials-II | 3                   | 1                 | 4                  | None           |
| 5                       | BME-245             | Machine Design-I          | 3                   | 0                 | 3                  | None           |
| 6                       | BME-246             | Fluid Mechanics-I         | 3                   | 0                 | 3                  | None           |
| <b>Total</b>            |                     |                           | <b>15</b>           | <b>3</b>          | <b>18</b>          |                |
| <b>Cumulative Total</b> |                     |                           | <b>57</b>           | <b>12</b>         | <b>69</b>          |                |

**Semester 5**

| Sr. No.                 | Course Code & Title |                              | Theory Credit Hours | Lab. Credit Hours | Total Credit Hours | Pre-Requisites |
|-------------------------|---------------------|------------------------------|---------------------|-------------------|--------------------|----------------|
| 1                       | BME-351             | Fluid Mechanics-II           | 3                   | 1                 | 4                  | BME-246        |
| 2                       | HSM-352             | Health, Safety & Environment | 1                   | 0                 | 1                  | None           |
| 3                       | BME-353             | Machine Design-II            | 2                   | 0                 | 2                  | BME-245        |
| 4                       | GSM-354             | Applied Statistics           | 3                   | 0                 | 3                  | None           |
| 5                       | BME-355             | Heat & Mass Transfer         | 3                   | 1                 | 4                  | None           |
| 6                       | BME-356             | Manufacturing Processes      | 3                   | 1                 | 4                  | None           |
| <b>Total</b>            |                     |                              | <b>15</b>           | <b>3</b>          | <b>18</b>          |                |
| <b>Cumulative Total</b> |                     |                              | <b>72</b>           | <b>15</b>         | <b>87</b>          |                |

**Semester 6**

| Sr. No.                 | Course Code & Title |  | Theory Credit Hours | Lab. Credit Hours | Total Credit Hours | Pre-Requisites |
|-------------------------|---------------------|--|---------------------|-------------------|--------------------|----------------|
| 1                       | HSM-361             | Technical Report Writing & Presentation Skills   | 1                   | 1                 | 2                  | None           |
| 2                       | BME-36X             | Technical Elective-I                             | 2                   | 0                 | 2                  | None           |
| 3                       | BME-363             | Control Engineering                              | 3                   | 1                 | 4                  | None           |
| 4                       | BME-364             | Mechanics of Machines                            | 3                   | 0                 | 3                  | None           |
| 5                       | BME-365             | Heating, Ventilating and Air Conditioning        | 3                   | 1                 | 4                  | None           |
| 6                       | BME-366             | Instrumentation, Measurement and Quality Control | 2                   | 1                 | 3                  | None           |
| 7                       | BME-367             | Internship/ Industrial Experience                | 0                   | 0                 | 0                  | None           |
| <b>Total</b>            |                     |  | <b>14</b>           | <b>4</b>          | <b>18</b>          |                |
| <b>Cumulative Total</b> |                     |  | <b>86</b>           | <b>19</b>         | <b>105</b>         |                |

**Semester 7**

| Sr. No.                 | Course Code & Title |   | Theory Credit Hours | Lab. Credit Hours | Total Credit Hours | Pre-Requisites |
|-------------------------|---------------------|---|---------------------|-------------------|--------------------|----------------|
| 1                       | MSM-471             | Engineering Economics                   | 2                   | 0                 | 2                  | None           |
| 2                       | BME-472             | Mechanical Vibrations                   | 3                   | 1                 | 4                  | None           |
| 3                       | BME-473             | Internal Combustion Engines             | 3                   | 0                 | 3                  | None           |
| 4                       | BME-475             | Introduction to Finite Element Analysis | 2                   | 1                 | 3                  | None           |
| 5                       | BME-476             | Final Year Project-I                    | 0                   | 3                 | 3                  | None           |
| <b>Total</b>            |                     |   | <b>10</b>           | <b>5</b>          | <b>15</b>          |                |
| <b>Cumulative Total</b> |                     |   | <b>96</b>           | <b>24</b>         | <b>120</b>         |                |

**Semester 8**

| Sr. No.                 | Course Code & Title |                        | Theory Credit Hours | Lab. Credit Hours | Total Credit Hours | Pre-Requisites |
|-------------------------|---------------------|------------------------|---------------------|-------------------|--------------------|----------------|
| 1                       | BME-48X             | Technical Elective-II  | 2                   | 0                 | 2                  | None           |
| 2                       | BME-48X             | Technical Elective-III | 2                   | 0                 | 2                  | None           |
| 3                       | MSM-482             | Entrepreneurship       | 2                   | 0                 | 2                  | None           |
| 4                       | MSM-484             | Management Elective    | 2                   | 0                 | 2                  | None           |
| 5                       | BME-485             | Power Plants           | 3                   | 1                 | 4                  | None           |
| 6                       | BME-485             | Final Year Project-II  | 0                   | 3                 | 3                  | None           |
| <b>Total</b>            |                     |                        | <b>11</b>           | <b>4</b>          | <b>15</b>          | None           |
| <b>Cumulative Total</b> |                     |                        | <b>107</b>          | <b>28</b>         | <b>135</b>         |                |

|                                      |    |  |             |      |
|--------------------------------------|----|--|-------------|------|
| Non-Engineering Courses Credit Hours | 36 |  | <b>%age</b> | 26.7 |
| Engineering Courses Credit Hours     | 99 |  | <b>%age</b> | 73.3 |

| Code | TECHNICAL ELECTIVE COURSES            |
|------|---------------------------------------|
| 1    | Fluid Power (Hydraulics & Pneumatics) |
| 2    | Renewable Energy Technology           |
| 2    | Maintenance Engineering               |
| 3    | Nuclear Engineering                   |
| 4    | Computational Fluid Dynamics (CFD)    |
| 5    | Mechanical Engineering Design         |
| 6    | Aerodynamics                          |
| 7    | Automation and Robotics               |
| 8    | Mechatronics and Robotics Engineering |
| 9    | Gas Dynamics                          |
| 10   | Tribology                             |

Note: X is the number from the serial no of the list of technical electives

**In - Charge**

Department of Mechanical Engineering, MUST