



Course Scheme B.Sc. Mechanical Engineering Session 2023

SEMESTER 1

| Course Code | Subject | Credit Hours | | Contact Hours | |
|-------------|------------------------------------|--------------|-----------|---------------|-----------|
| | | Theory | Practical | Theory | Practical |
| GS-101 | Applied Mathematics-I | 3 | 0 | 3 | 0 |
| EE-101 | Electrical Engineering | 2 | 0 | 2 | 0 |
| EE-102 | Electrical Engineering Lab | 0 | 1 | 0 | 3 |
| IS-101 | Islamic Studies | 2 | 0 | 2 | 0 |
| HS-101 | Comprehension & Composition | 2 | 0 | 2 | 0 |
| CS-101 | Computer Systems & Programming | 2 | 0 | 2 | 0 |
| CS-102 | Computer Systems & Programming Lab | 0 | 1 | 0 | 3 |
| ME-121 | Thermodynamics-I | 3 | 0 | 3 | 0 |
| ME-111 | Engineering Drawing Lab | 0 | 1 | 0 | 3 |
| ME-112 | Engineering Graphics Lab | 0 | 1 | 0 | 3 |

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| 14 | 4 | 14 | 12 |
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Semester Credit Hours:

18

Semester Contact Hours:

26

Program Credit Hours:

18

SEMESTER 2

| Course Code | Subject | Credit Hours | | Contact Hours | |
|-------------|-------------------------------------|--------------|-----------|---------------|-----------|
| | | Theory | Practical | Theory | Practical |
| GS-102 | Applied Mathematics-II | 3 | 0 | 3 | 0 |
| PS-101 | Pakistan Studies | 2 | 0 | 2 | 0 |
| HS-102 | Communication Skills | 1 | 1 | 1 | 3 |
| ME-122 | Fluid Mechanics - I | 3 | 0 | 3 | 0 |
| ME-113 | Engineering Mechanics - I (Statics) | 3 | 0 | 3 | 0 |
| ME-114 | Engineering Materials | 3 | 0 | 3 | 0 |
| ME-115 | Workshop Practice Lab | 0 | 2 | 0 | 6 |

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| 15 | 3 | 15 | 9 |
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Semester Credit Hours:

18

Semester Contact Hours:

24

Program Credit Hours:

36



SEMESTER 3

| Course Code | Subject | Credit Hours | | Contact Hours | |
|-------------|-------------------------------|--------------|-----------|---------------|-----------|
| | | Theory | Practical | Theory | Practical |
| GS-201 | Applied Mathematics-III | 3 | 0 | 3 | 0 |
| GS-202 | Applied Chemistry | 3 | 0 | 3 | 0 |
| HS-201 | Engineering for Social Change | 2 | 0 | 2 | 0 |
| ME-211 | Mechanics of Materials-I | 3 | 0 | 3 | 0 |
| ME-212 | Manufacturing Processes | 2 | 0 | 2 | 0 |
| ME-221 | Thermodynamics- II | 2 | 0 | 2 | 0 |
| ME-213 | Manufacturing Processes Lab | 0 | 1 | 0 | 3 |
| ME-222 | Thermodynamics Lab | 0 | 1 | 0 | 3 |

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| 15 | 2 | 15 | 6 |
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| Semester Credit Hours: | 17 |
| Semester Contact Hours: | 21 |

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| Program Credit Hours: | 53 |
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SEMESTER 4

| Course Code | Subject | Credit Hours | | Contact Hours | |
|-------------|--------------------------------------|--------------|-----------|---------------|-----------|
| | | Theory | Practical | Theory | Practical |
| EE-201 | Basic Electronics | 2 | 0 | 2 | 0 |
| EE-202 | Basic Electronics Lab | 0 | 1 | 0 | 3 |
| CS-201 | Applied AI and Machine Learning | 2 | 1 | 2 | 3 |
| MS-201 | Engineering Management and Economics | 2 | 0 | 2 | 0 |
| ME-214 | Engineering Mechanics-II (Dynamics) | 3 | 0 | 3 | 0 |
| ME-223 | Fluid Mechanics-II | 3 | 0 | 3 | 0 |
| ME-224 | Fluid Mechanics Lab | 0 | 1 | 0 | 3 |
| ME-215 | Engineering Mechanics Lab | 0 | 1 | 0 | 3 |
| ME-216 | CAD Lab | 0 | 1 | 0 | 3 |

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|----|---|----|----|
| 12 | 5 | 12 | 15 |
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| Semester Credit Hours: | 17 |
| Semester Contact Hours: | 27 |

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|------------------------------|----|
| Program Credit Hours: | 70 |
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SEMESTER 5

| Course Code | Subject | Credit Hours | | Contact Hours | |
|-------------|--|--------------|-----------|---------------|-----------|
| | | Theory | Practical | Theory | Practical |
| MS-301 | Project Management | 1 | 1 | 1 | 3 |
| GS-301 | Engineering Probability & Statistics | 2 | 0 | 2 | 0 |
| ME-311 | Systems and Control | 2 | 0 | 2 | 0 |
| ME-312 | Precision Engineering and Metrology | 2 | 0 | 2 | 0 |
| ME-321 | Renewable Energy Resources | 3 | 0 | 3 | 0 |
| ME-322 | Heat & Mass Transfer | 3 | 0 | 3 | 0 |
| GS-302 | Engineering Probability & Statistics Lab | 0 | 1 | 0 | 3 |
| ME-313 | Systems and Control Lab | 0 | 1 | 0 | 3 |
| ME-314 | Precision Engineering and Metrology Lab | 0 | 1 | 0 | 3 |
| ME-323 | Heat & Mass Transfer Lab | 0 | 1 | 0 | 3 |

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| 13 | 5 | 13 | 15 |
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| Semester Credit Hours: | 18 |
| Semester Contact Hours: | 28 |

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|------------------------------|-----------|
| Program Credit Hours: | 88 |
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SEMESTER 6

| Course Code | Subject | Credit Hours | | Contact Hours | |
|-------------|--|--------------|-----------|---------------|-----------|
| | | Theory | Practical | Theory | Practical |
| ME-315 | Machine Design | 3 | 0 | 3 | 0 |
| ME-324 | Refrigeration and Air Conditioning | 3 | 0 | 3 | 0 |
| ME-316 | Mechanics of Machines | 3 | 0 | 3 | 0 |
| ME-317 | Mechanical Vibrations | 3 | 0 | 3 | 0 |
| ME-318 | Mechanics of Materials-II | 3 | 0 | 3 | 0 |
| ME-325 | Refrigeration and Air Conditioning Lab | 0 | 1 | 0 | 3 |
| ME-319 | Mechanical Vibrations Lab | 0 | 1 | 0 | 3 |
| ME-3110 | Mechanics of Materials Lab | 0 | 1 | 0 | 3 |

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| 15 | 3 | 15 | 9 |
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| Semester Credit Hours: | 18 |
| Semester Contact Hours: | 24 |

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| Program Credit Hours: | 106 |
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SEMESTER 7

| Course Code | Subject | Credit Hours | | Contact Hours | |
|-------------|--------------------------------------|--------------|-----------|---------------|-----------|
| | | Theory | Practical | Theory | Practical |
| GS-401 | Numerical Methods for Engineers | 2 | 0 | 2 | 0 |
| HS-401 | Technical & Business Writing | 1 | 1 | 1 | 3 |
| MS-401 | Entrpenuership | 1 | 1 | 1 | 3 |
| MS-402 | Production and Operations Management | 2 | 0 | 2 | 0 |
| ME-421 | Internal Combustion Engines | 2 | 0 | 2 | 0 |
| ME-4XY | Technical Elective-I | 2 | 0 | 2 | 0 |
| ME-4XY | Technical Elective-I Lab | 0 | 1 | 0 | 3 |
| GS-402 | Numerical Methods Lab | 0 | 1 | 0 | 3 |
| ME-499A | Design Project | 0 | 3 | 0 | 9 |
| ME-422 | Internal Combustion Engines Lab | 0 | 1 | 0 | 3 |

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| 10 | 8 | 10 | 24 |
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|--------------------------------|-----------|
| Semester Credit Hours: | 18 |
| Semester Contact Hours: | 34 |

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|------------------------------|------------|
| Program Credit Hours: | 124 |
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SEMESTER 8

| Course Code | Subject | Credit Hours | | Contact Hours | |
|-------------|----------------------------|--------------|-----------|---------------|-----------|
| | | Theory | Practical | Theory | Practical |
| ME-423 | Power Plants | 2 | 0 | 2 | 0 |
| ME-4XY | Technical Elective-II | 2 | 0 | 2 | 0 |
| ME-4XY | Technical Elective-III | 2 | 0 | 2 | 0 |
| ME-424 | Power Plants Lab | 0 | 1 | 0 | 3 |
| ME-4XY | Technical Elective-II Lab | 0 | 1 | 0 | 3 |
| ME-4XY | Technical Elective-III Lab | 0 | 1 | 0 | 3 |
| ME-499B | Design Project | 0 | 3 | 0 | 9 |

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| 6 | 6 | 6 | 18 |
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| Semester Credit Hours: | 12 |
| Semester Contact Hours: | 24 |

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|------------------------------|------------|
| Program Credit Hours: | 136 |
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LIST of ELECTIVES

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|-----------------------------------|--|
| Finite Element Analysis | (Design Elective 7th technical elective 1) |
| Maintenance Engineering | (Design Elective 7th technical elective 1) |
| Advanced Stress Analysis | (Design Elective 8th technical elective 2) |
| CAD/CAM Theory and Application | (Design Elective 8th technical elective 2) |
| Environment and Pollution Control | (Thermofluids Elective 8th technical elective 3) |
| Tribology | (Thermofluids Elective 8th technical elective 3) |