**DEPARTMENT OF MECHANICAL ENGINEERING**

Kurukshetra University, Kurukshetra (K.U.K) – 136119, Haryana, INDIA

**(Established by the state Legislature Act XII of 1956; ‘A+’ Grade, NAAC Accredited)**

**A. Definition of Credit:**

|  |  |
| --- | --- |
| 1 Hour Lecture (L) per week | 1 credit |
| 1Hour Tutorial (T) per week | 1 credit |
| 1 Hour Practical (P) per week | 0.5 credit |
| 2 Hours Practical (Lab) per week | 1 credit |

**B. Range of Credits:**

A total credit of 160 is required for a student to be eligible to get Under Graduate degree in **Mechanical Engineering**. A student will be eligible to get Under Graduate degree **(B.Tech.) with Honours**, if he/she completes an additional 20 credits. These could be acquired through MOOCs at Swayam portal or with in-house examination being conducted. In order to have an Honours degree, a student may choose minimum 20 credits provided that the student must ensure the course is approved by the Competent Authority, Government of India.

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| **BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING) CREDIT BASED** | | | | | | | | | | | |
| **KURUKSHETRA UNIVERSITY KURUKSHETRA** | | | | | | | | | | | |
| **SCHEME OF STUDIES/EXAMINATION** | | | | | | | | | | | |
| **SEMESTER III(w.e.f. session 2019-2020 )** | | | | | | | | | | | |
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| **S. No.** | **Course No.** | **Course Name** | **L:T:P** | **Hours/Week** | **Credits** | **Examination Schedule (Marks)** | | | | **Duration of Exam (Hrs.)** |
|
| **Major Test** | **Minor Test** | **Practical** | **Total** |
| 1 | BS-201A | Optics & Waves | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 2 | BS-205A | Advanced Engineering Mathematics | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 3 | ES-203A | [Basic](#MachineDrawing) Electronics Engineering | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 4 | MEC-201A | Theory of Machines | 3:1:0 | 4 | 4 | 75 | 25 | 0 | 100 | 3 |
| 5 | MEC-203A | Mechanics of Solids-I | 3:1:0 | 4 | 4 | 75 | 25 | 0 | 100 | 3 |
| 6 | MEC-205A | Thermodynamics | 3:1:0 | 4 | 4 | 75 | 25 | 0 | 100 | 3 |
| 7 | MEC-207LA | Theory of Machines Lab | 0:0:2 | 2 | 1 | 0 | 40 | 60 | 100 | 3 |
| 8 | MEC-209LA | [Mechanics of Solids Lab](#somlab) | 0:0:2 | 2 | 1 | 0 | 40 | 60 | 100 | 3 |
| 9 | \*MEC-211A | Industrial Training-I | 2:0:0 | 2 | - | - | 100 | - | 100 |  |
| 10 | \*\*MC-901A | Environmental Sciences | 3:0:0 | 3 | - | 100 | - | 0 | 100 | 3 |
| **Total** | | | | **30** | **23** | **450** | **230** | **120** | **800** |  |

\*MEC-211Ais a mandatory non-credit course in which the students will be evaluated for the industrial training undergone after 2nd semester and students will be required to get passing marks to qualify.

\*\*MC-901A is a mandatory credit-less course in which the students will be required to get passing marks in the major test.

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| **BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING) CREDIT BASED** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **KURUKSHETRA UNIVERSITY KURUKSHETRA** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **SCHEME OF STUDIES/EXAMINATION** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **SEMESTER IV(w.e.f. session 2019-2020 )** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **S. No.** | | **Course No.** | **Course Name** | **L:T:P** | | | **Hours/**  **Week** | | | **Credits** | | | **Examination Schedule (Marks)** | | | | | | | | | | | | **Duration of Exam (Hrs.)** | | |
|
| **Major Test** | | | **Minor Test** | | | **Practical** | | | **Total** | | |
| 1 | | ES-204A | [Materials](#PT1) Engineering | 3:0:0 | | | 3 | | | 3 | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 2 | | MEC-202A | Applied Thermodynamics | 3:0:0 | | | 3 | | | 3 | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 3 | | MEC-204A | [Fluid](#FOM) Mechanics & Fluid Machines | 3:1:0 | | | 4 | | | 4 | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 4 | | MEC-206A | Mechanics of Solids-II | 3:1:0 | | | 4 | | | 4 | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 5 | | MEC-208A | [Instrumentation](#SGP)& Control | 3:0:0 | | | 3 | | | 3 | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 6 | | ES-206LA | Materials Engineering Lab | 0:0:2 | | | 2 | | | 1 | | | 0 | | | 40 | | | 60 | | | 100 | | | 3 | | |
| 7 | | MEC-210LA | [Fluid](#fm) Mechanics & Fluid Machines Lab | 0:0:2 | | | 2 | | | 1 | | | 0 | | | 40 | | | 60 | | | 100 | | | 3 | | |
| 8 | | \*MC-902A | Constitution of India | 3:0:0 | | | 3 | | | - | | | 100 | | | - | | | - | | | 100 | | | 3 | | |
| **Total** | | | | | | | **24** | | | **19** | | | **375** | | | **205** | | | **120** | | | **700** | | |  | | |
| \*MC-902A is a mandatory credit-less course in which the students will be required to get passing marks in the major test.  **Note: All the students have to undergo 4 to 6 weeks Industrial Training after 4th semester which will be evaluated in 5th semester.**  .  **BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING) CREDIT BASED** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **KURUKSHETRA UNIVERSITY KURUKSHETRA** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **SCHEME OF STUDIES/EXAMINATION** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **SEMESTER V(w.e.f. session 2020-2021 )** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **S. No.** | | **Course No.** | **Course Name** | **L:T:P** | | **Hours/**  **Week** | | **Credits** | | | | **Examination Schedule (Marks)** | | | | | | | | | | | | **Duration of Exam (Hrs.)** | | |
|
| **Major Test** | | | **Minor Test** | | | **Practical** | | | **Total** | | |
| 1 | | HM-905A | Entrepreneurship | 3:0:0 | | 3 | | 3 | | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 2 | | MEC-301A | Heat Transfer | 3:1:0 | | 4 | | 4 | | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 3 | | MEC-303A | Production Technology | 3:0:0 | | 3 | | 3 | | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 4 | | MEC-305A | Mechanical Vibrations and Tribology | 3:0:0 | | 3 | | 3 | | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 5 | | MEC-307LA | Heat Transfer lab | 0:0:2 | | 2 | | 1 | | | | 0 | | | 40 | | | 60 | | | 100 | | | 3 | | |
| 6 | | MEC-309LA | Production Technology Lab | 0:0:2 | | 2 | | 1 | | | | 0 | | | 40 | | | 60 | | | 100 | | | 3 | | |
| 7 | | MEC-311LA | Mechanical Vibrations and Tribology Lab | 0:0:2 | | 2 | | 1 | | | | 0 | | | 40 | | | 60 | | | 100 | | | 3 | | |
| 8 | | MEC-313LA | Project-I | 0:0:2 | | 2 | | 1 | | | | - | | | 0 | | | 100 | | | 100 | | | 3 | | |
| 9 | | \*MEC-315A | Industrial Training-II | 2:0:0 | | 2 | | - | | | | - | | | 100 | | | - | | | 100 | | | - | | |
| 10 | | \*\*MC-903A | Essence of Indian Traditional Knowledge | 3:0:0 | | 3 | | - | | | | 100 | | | - | | | - | | | 100 | | | 3 | | |
| **Total** | | | | | | **26** | | **17** | | | | **300** | | | **220** | | | **280** | | | **800** | | |  | | |
| \*MEC-315A is a mandatory non-credit course in which the students will be evaluated for the industrial training undergone after 4th semester and students will be required to get passing marks to qualify.  \*\*MC-903Ais a mandatory credit-less course in which the students will be required to get passing marks in the majortest.  **BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING) CREDIT BASED** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **KURUKSHETRA UNIVERSITY KURUKSHETRA** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **SCHEME OF STUDIES/EXAMINATION** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **SEMESTER VI(w.e.f. session 2020-2021 )** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **S. No.** | | **Course No.** | | **Course Name** | | **L:T:P** | | | | **Hours/**  **Week** | | **Credits** | | | **Examination Schedule (Marks)** | | | | | | | | | | | | **Duration of Exam (Hrs.)** | | |
|
| **Major Test** | | | **Minor Test** | | | **Practical** | | | **Total** | | |
| 1 | | HM-901A | | Organizational Behaviour | | 3:0:0 | | | | 3 | | 3 | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 2 | | MEC-302A | | Manufacturing Technology | | 3:0:0 | | | | 3 | | 3 | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 3 | | MEC-304A | | Design of Machine Elements | | 2:4:0 | | | | 6 | | 6 | | | 75 | | | 25 | | | 0 | | | 100 | | | 4 | | |
| 4 | | MEC-306LA | | Mechanical Engineering Lab-I | | 0:0:2 | | | | 2 | | 1 | | | 0 | | | 40 | | | 60 | | | 100 | | | 3 | | |
| 5 | | MEC-308LA | | Mechanical Engineering Lab-II | | 0:0:2 | | | | 2 | | 1 | | | 0 | | | 40 | | | 60 | | | 100 | | | 3 | | |
| 6 | | MEC-310LA | | Project-II | | 0:0:6 | | | | 6 | | 3 | | | 0 | | | 0 | | | 100 | | | 100 | | | 3 | | |
| 7 | | MEP\* | | Program Elective-I | | 3:1:0 | | | | 4 | | 4 | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| 8 | | MEP\* | | Program Elective -II | | 3:1:0 | | | | 4 | | 4 | | | 75 | | | 25 | | | 0 | | | 100 | | | 3 | | |
| **Total** | | | | | | | | | | **30** | | **25** | | | **375** | | | **205** | | | **220** | | | **800** | | |  | | |

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| **Course No.** | **ProgramElective I** |  | **Course No.** | **ProgramElective II** |
| MEP-302A | Internal Combustion Engines | MEP-308A | Composite Materials |
| MEP-304A | Gas Dynamics and Jet Propulsion | MEP-310A | Refrigeration and Air Conditioning |
| MEP-306A | Design of Transmission Systems | MEP-312A | Product Engineering |

**Note: All the students have to undergo 4 to 6 weeks Industrial Training after 6th semester which will be evaluated in 7th semester.**

**\* The course of Program Elective will be offered at 1/3rd strength or 20 students (whichever is smaller) of the section.**

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| **BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING) CREDIT BASED** | | | | | | | | | | |
| **KURUKSHETRA UNIVERSITY KURUKSHETRA** | | | | | | | | | | |
| **SCHEME OF STUDIES/EXAMINATION** | | | | | | | | | | |
| **SEMESTER VII(w.e.f. session 2021-2022 )** | | | | | | | | | | |
| **S. No.** | **Course No.** | **Course Name** | **L:T:P** | **Hours/**  **Week** | **Credits** | **Examination Schedule (Marks)** | | | | **Duration of Exam (Hrs.)** |
|
| **Major Test** | **Minor Test** | **Practical** | **Total** |
| 1 | MEO\* | Open Elective-I | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 2 | MEC-401A | Automation in Manufacturing | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 3 | MEC-403LA | Mechanical Engineering Lab-III | 0:0:2 | 2 | 1 | 0 | 40 | 60 | 100 | 3 |
| 4 | MEC-405LA | Project-III | 0:0:10 | 10 | 5 | 0 | 100 | 100 | 200 | 3 |
| 5 | MEP\* | Program Elective-III | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 6 | MEP\* | Program Elective -IV | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 7 | \*\*MEC-407A | Industrial Training-III | 2:0:0 | 2 | - | - | 100 | - | 100 |  |
| **Total** | | | | **26** | **18** | **300** | **240** | **160** | **700** |  |

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| **Program Elective-III** | |  | **Program Elective-IV** | |  | **Open Electives-I** | |
| **Course No.** | **Course Name** |  | **Course No.** | **Course Name** |  | **Course No.** | **Course Name** |
| MEP-401A | Computer Aided Design |  | MEP-407A | Mechatronic Systems |  | MEO-401A | Smart Materials |
| MEP-403A | Finite Element Analysis |  | MEP-409A | Industrial Robotics |  | MEO-405A | Non-Destructive Testing |
| MEP-405A | Power Plant Engineering |  | MEP-411A | Solar Energy Analysis |  | MEO-407A | Manufacturing Cost Estimation |
|  |  |  |  |  |  | MEO-409A | Ergonomics |
|  |  |  |  |  |  | MEO-411A | Air and Noise Pollution |

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| **\* The course of both Program Elective and Open Elective will be offered at 1/3rd strength or 20 students (whichever is smaller) of the section.**  **\*\*MEC-407A**is a mandatory non-credit course in which the students will be evaluated for the industrial training undergone after 6th semester and students will be required to get passing marks to qualify.  **BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING) CREDIT BASED** | | | | | | | | | | |
| **KURUKSHETRA UNIVERSITY KURUKSHETRA** | | | | | | | | | | |
| **SCHEME OF STUDIES/EXAMINATION** | | | | | | | | | | |
| **SEMESTER VIII(w.e.f. session 2021-2022 )** | | | | | | | | | | |
| **S. No.** | **Course No.** | **Course Name** | **L:T:P** | **Hours/**  **Week** | **Credits** | **Examination Schedule (Marks)** | | | | **Duration of Exam (Hrs.)** |
|
| **Major Test** | **Minor Test** | **Practical** | **Total** |
| 1 | MEC-402LA | Project-IV | 0:0:10 | 10 | 5 | - | 100 | 100 | 200 | 3 |
| 2 | MEO\* | Open Elective-II | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 3 | MEO\* | Open Elective-III | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 4 | MEP\* | Program Elective-V | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| 5 | MEP\* | Program Elective-VI | 3:0:0 | 3 | 3 | 75 | 25 | 0 | 100 | 3 |
| **Total** | | | | **22** | **17** | **300** | **200** | **100** | **600** |  |

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| **Program Elective- V** | | **Program Elective-VI** | |
| **Course No.** | **Course Name** | **Course No.** | **Course Name** |
| MEP-402A | Non-Conventional Machining | MEP-408A | Welding Technology |
| MEP-404A | Automobile Engineering | MEP-410A | Design of Pressure Vessels and Piping |
| MEP-406A | Product Design and Manufacturing | MEP-412A | Quality and Reliability Engineering |

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| **Open Elective- II** | | **Open Elective-III** | |
| **Course No.** | **Course Name** | **Course No.** | **Course Name** |
| MEO-402A | Supply Chain Management | MEO-408A | Lubricants and Lubrication |
| MEO-404A | Competitive Manufacturing Systems | MEO-410A | Total Quality Management |
| MEO-406A | Concurrent Engineering | MEO-412A | Energy Conservation and Management |

**\* The course of both Program Elective and Open Elective will be offered at 1/3rd strength or 20 students (whichever is smaller) of the section.**