**Syllabus to be implemented from the Academic Year 2014-15**

**Mechanical Engineering**

**First Year First Semester**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |  |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | Credit  Points | |
| L | T | P | Total |
| 1 | HU101 | English Language  & Technical  Communication-I | 2 | 0 | 0 | 2 | 2 | |
| 2 | PH101 | Physics-I | 3 | 1 | 0 | 4 | 3 | |
| 3 | M101 | Mathematics-I | 3 | 1 | 0 | 4 | 3 | |
| 4 | ES101 | Basic Electrical &  Electronic Engineering-I | 3 | 0 | 0 | 3 | 4 | |
| 5 | ME101 | Engineering Mechanics | 3 | 0 | 0 | 3 | 3 | |
| 6 | CS101 | Basic Computation &  Principles of Computer  Programming-I | 3 | 0 | 0 | 3 | 3 | |
| Total of Theory | | |  |  |  | 19 | 18 | |
| **B. PRACTICAL** | | | | | | | | |
| 7 | PH191 | Physics-I Lab | 0 | 0 | 3 | 3 | 2 | |
| 8 | ES191 | Basic Electrical &  Electronic Engineering-I Lab | 0 | 0 | 3 | 3 | 2 | |
| 9 | ME191 | Engineering Drawing &  Computer Graphics Lab | 1 | 0 | 3 | 4 | 3 | |
| 10 | CS191 | Basic Computation &  Principles of Computer  Programming-I Lab | 0 | 0 | 3 | 3 | 2 | |
| Total of Practical | | |  |  |  | 13 | 9 | |
| **C. SESSIONAL** | | | | | | | | |
| 11 | HU181 | Language Laboratory-I | 0 | 0 | 2 | 2 | | 2 |  |
| 12 | XC181 | Extra Curricular  Activities(NSS/NCC/NSO  etc) | 0 | 0 | 2 | 2 | | 1 |  |
| Total of Sessional | | | | | | 4 | | 3 |  |
| Total of Semester | | | | | | 36 | | 30 |  |

**Mechanical Engineering**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |  |
| Sl. No. | Course Code | Theory | Contact Hours/Week | | | | Credit  Points | |
| L | T | P | Total |
| 1 | CS201 | Principles of Computer  Programming-(C++) | 3 | 1 | 0 | 4 | 4 | |
| 2 | PH201 | Physics-II | 3 | 1 | 0 | 4 | 3 | |
| 3 | M201 | Mathematics-II | 3 | 1 | 0 | 4 | 3 | |
| 4 | ES201 | Basic Electrical &  Electronic Engineering-II | 3 | 1 | 0 | 4 | 4 | |
| 5 | ME201 | Engineering  Thermodynamics & Fluid  Mechanics | 3 | 1 | 0 | 4 | 3 | |
| 6 | HU201 | English Language  & Technical Communication-II | 2 | 0 | 0 | 2 | 2 | |
| Total of Theory | | |  |  |  | 22 | 19 | |
| **B. PRACTICAL** | | | | | | | | |
| 7 | CS291 | Principles of Computer  Programming-II Lab | 0 | 0 | 3 | 3 | 2 | |
| 8 | PH291 | Physics-II Lab | 0 | 0 | 3 | 3 | 2 | |
| 9 | ES291 | Basic Electrical &  Electronic Engineering-II Lab | 0 | 0 | 3 | 3 | 2 | |
| 10 | ME291 | Workshop Practice Lab | 1 | 0 | 3 | 4 | 3 | |
| Total of Practical | | |  |  |  | 13 | 9 | |
| **C. SESSIONAL** | | | | | | | | |
| 11 | HU281 | Language Laboratory-II | 0 | 0 | 2 | 2 | | 2 |  |
| Total of Sessional | | | | | | 2 | | 2 |  |
| Total of Semester | | | | | | 37 | | 30 |  |

**First Year Second Semester**

**Mechanical Engineering**

**Second Year Third Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |
| Sl. No. | Paper Code | Subjects | Contact Hours / Week | | | | | Credit  Points |
| L | | T | P | Total |
| 1. | M301 | Mathematics-III | 3 | | 1 | 0 | 4 | 4 |
| 2. | CS(ME)301 | Data Structure & Algorithm | 3 | | 1 | 0 | 4 | 3 |
| 3. | CH301 | Basic Environmental Engineering | 2 | | 1 | 0 | 3 | 3 |
| 4. | ME 301 | Applied Thermodynamics | 4 | | 0 | 0 | 4 | 4 |
| 5. | ME 302 | Strength of Materials | 3 | | 1 | 0 | 4 | 4 |
| 6. | ME 303 | Engineering Materials | 3 | | 0 | 0 | 3 | 3 |
| Total Theory | | |  | |  |  | 22 | 22 |
| **B. PRACTICAL** | | | | | | | | |
| Sl. No. | Course Code | Subjects | Contact Hours / Week | | | | | Credit  Points |
| L | T | | P | Total |
| 7. | HU-381 | Technical Report Writing & Language Lab Practice | 0 | 0 | | 3 | 3 | 2 |
| 8. | CS(ME)391 | Data Structure & Algorithm Lab | 0 | 0 | | 3 | 3 | 2 |
| 9. | ME 392 | Workshop Practice-II Lab | 0 | 0 | | 3 | 3 | 3 |
| 10. | ME 393 | Applied Mechanics Lab | 0 | 0 | | 3 | 3 | 2 |
| Total Practical | | |  |  | |  | 12 | 8 |
| Total Semester | | |  |  | |  | 33 | 30 |

**Second Year Fourth Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | |
| Sl. No. | Course Code | Subjects | Contact Hours / Week | | | | Credit Points |
| L | T | P | Total |
| 1. | M(CS)401 | Numerical Methods | 2 | 1 | 0 | 3 | 2 |
| 2. | HU401 | Values & Ethics in Profession | 3 | 1 | 0 | 4 | 3 |
| 3. | ME401 | Fluid Mechanics & Hydraulic Machines | 4 | 0 | 0 | 4 | 4 |
| 4. | ME402 | Primary Manufacturing Processes | 3 | 0 | 0 | 3 | 3 |
| 5. | ME403 | Mechanisms | 4 | 0 | 0 | 4 | 4 |
| Total Theory | | |  |  |  | 18 | 16 |
| **B. PRACTICAL** | | | | | | | |
| Sl. No. | Course  Code | Subjects | Contact Hours / Week | | | | Credit Points |
| L | T | P | Total |
| 6. | M(CS)491 | Numerical Methods Lab | 0 | 0 | 3 | 3 | 2 |
| 7. | ME491 | Fluid Mechanics & Hydraulics Lab | 0 | 0 | 3 | 3 | 2 |
| 8. | ME492 | Manufacturing Technology Lab | 0 | 0 | 3 | 3 | 2 |
| 9. | ME493 | Material Testing Lab | 0 | 0 | 3 | 3 | 2 |
| 10. | ME494 | Machine Drawing Lab | 0 | 0 | 3 | 3 | 2 |
| Total Practical | | |  |  |  | 15 | 10 |
| Total Semester | | |  |  |  | 33 | 26 |

**Mechanical Engineering**

**Third Year Fifth Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |
| Sl. No. | | Course Code | Subjects | Contact Hours / Week | | | | Credit Points |
| L | T | P | Total |
| 1. | | ME501 | Metrology & Measurement | 3 | 1 | 0 | 3 | 4 |
| 2. | | ME502 | Heat Transfer | 4 | 0 | 0 | 4 | 4 |
| 3. | | ME503 | Design of Machine Elements | 4 | 0 | 0 | 4 | 4 |
| 4. | | ME504 | Dynamics of Machines | 3 | 0 | 0 | 3 | 3 |
| 5. | | ME505 | Industrial Management | 3 | 0 | 0 | 3 | 3 |
| 6. | | ME506 | Professional Elective-I | 2 | 0 | 0 | 2 | 2 |
| Total Theory | | | |  |  |  | 19 | 20 |
| **B. PRACTICAL** | | | | | | | | |
| Sl. No. | Course Code | | Subjects | Contact Hours / Week | | | | Credit Points |
| L | T | P | Total |
| 7. | ME592 | | Applied Thermodynamics & Heat Transfer Lab  Transfer Lab | 0 | 0 | 3 | 3 | 2 |
| 8. | ME593 | | Design Practice-I | 0 | 0 | 3 | 3 | 2 |
| 9. | ME591 | | Metrology & Measurement Lab | 0 | 0 | 2 | 2 | 2 |
| 10. | ME596 | | Professional Elective Lab-I | 0 | 0 | 3 | 3 | 2 |
| Total Practical | | | |  |  |  | 11 | 8 |
| Total Semester | | | |  |  |  | 30 | 28 |

\* List of Professional Elective 1:

1. ME505A-Electrical Machines

2. ME505B-Applied Fluid Mechanics

**Mechanical Engineering**

**Third Year Sixth Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |
| Sl. No. | | Course Code | Subjects | Contact Hours / Week | | | | Credit Points |
| L | T | P | Total |
| 1. | | ME 601 | IC Engines and Gas Turbines | 3 | 0 | 0 | 3 | 3 |
| 2. | | ME 602 | Machining Principles & Machine Tools | 3 | 0 | 0 | 3 | 3 |
| 3. | | ME 603 | Machine Design-II | 3 | 0 | 0 | 3 | 3 |
| 4. | | ME604 | Production & Operations Management | 3 | 0 | 0 | 3 | 3 |
| 5. | | ME 605 | @ Professional Elective-II | 3 | 0 | 0 | 3 | 3 |
| 6. | | ME 606 | @@ Professional Elective-III | 2 | 0 | 0 | 2 | 2 |
| Total Theory | | | |  |  |  | 17 | 17 |
| **B. PRACTICAL** | | | | | | | | |
| Sl. No. | Course Code | | Subjects | Contact Hours / Week | | | | Credit Points |
| L | T | P | Total |
| 7. | ME 691 | | IC Engine Lab | 0 | 0 | 3 | 3 | 2 |
| 8. | ME 692 | | Machining & Machine Tools Lab | 0 | 0 | 3 | 3 | 2 |
| 9. | ME 693 | | Design Practice-II Lab | 0 | 0 | 3 | 3 | 2 |
| 10. | ME 694 | | Dynamics of Machines Lab | 0 | 0 | 3 | 3 | 2 |
| 11. | ME 695 | | Professional Elective-II Lab | 0 | 0 | 3 | 3 | 2 |
| Total Practical | | | |  |  |  | 15 | 10 |
| Total Semester | | | |  |  |  | 32 | 27 |

@ List of Prof. Elective-II:

1. ME604A: Air Conditioning & Refrigeration
2. ME604B: Mechatronics
3. ME604C: Fluid Power Control

@@List of Prof. Elective-III:

1. ME605A- Materials Handling
2. ME605B- Finite Element Method
3. ME605C- Turbo Machinery

Note: Vocational Training to be conducted after sixth semester and to be evaluated in seventh semester

**Mechanical Engineering**

**Fourth Year Seventh Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | | |
| Sl. No. | Course Code | Subjects | | Contact Hours / Week | | | | Credit  Points |
| L | T | P | Total |
| 1. | ME701 | Advanced Manufacturing  Technology | | 3 | 1 | 0 | 4 | 3 |
| 2. | ME702 | Power Plant Engineering | | 4 | 0 | 0 | 4 | 4 |
| 3. | ME703 | ^Professional Elective-IV | | 3 | 0 | 0 | 3 | 3 |
| 4. | ME704 | ^^Professional Elective-V | | 3 | 0 | 0 | 3 | 3 |
| 5. | ME705 | ^^^Free Elective-I | | 3 | 0 | 0 | 3 | 3 |
| Total Theory | | | |  |  |  | 17 | 16 |
| **B. PRACTICAL / SESSIONAL** | | | | | | | | |
| Sl. No. | Course Code | Subjects | Contact Hours / Week | | | | | Credit  Points |
| L | | T | P | Total |
| 6. | ME791 | Advanced Manufacturing Lab | 0 | | 0 | 3 | 3 | 2 |
| 7. | ME792 | Group Discussion | 0 | | 0 | 3 | 3 | 2 |
| 8. | ME781 | Seminar on Industrial Training | 4 wks during 6th -7th  During Semester Break | | | | | 2 |
| 9. | ME782 | Project Part-I |  | |  | 6 | 6 | 4 |
| Total Practical | | |  | |  |  | 12 | 10 |
| Total Semester | | |  | |  |  | 29 | 26 |

^List of Prof. Elective-IV

ME703A: Maintenance Engineering

ME703B: Renewable Energy Systems

ME703C: Tribology

^^List of Prof. Elective-V:

ME704A: Quantity Production Method

ME704B: Advanced Welding Technology

ME704C: Computational Methods in Engineering

^^^ List of Free Elective-I:

ME705A: Software Engineering

ME705B: Industrial Instrumentation

ME705C: Operations Research

ME705D: Biomechanics & Biomaterials

**Mechanical Engineering**

**Fourth Year Eighth Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **A. THEORY** | | | | | | | |
| Sl. No. | Course Code | Subjects | Contact Hours / Week | | | | Credit  Points |
| L | T | P | Total |
| 1. | HU802 | Economics for Engineers | 3 | 0 | 0 | 3 | 3 |
| 2. | ME801 | \* Professional Elective-VI | 3 | 0 | 0 | 3 | 3 |
| 3. | ME802 | @ Free Elective-II | 3 | 0 | 0 | 3 | 3 |
| Total Theory | | |  |  |  | 9 | 9 |
| **B. PRACTICAL / SESSIONAL** | | | | | | | |
| Sl. No. | Course Code | Subjects | Contact Hours / Week | | | | Credit  Points |
| L | T | P | Total |
| 4. | ME891 | Deign of a Mechanical System Lab | 0 | 0 | 3 | 3 | 2 |
| 5. | ME881 | Grand Viva | 0 | 0 | 0 | 0 | 4 |
| 6. | ME882 | Project Part-II |  |  | 12 | 12 | 6 |
| Total Practical | | |  |  |  | 15 | 12 |
| Total Semester | | |  |  |  | 24 | 21 |

\*List of Prof. Elective-VI:

ME802A: CAD/CAM

ME802B: Industrial Robotics

ME802C: Energy Conservation & Management

ME802D: Quality & Reliability Engineering

@List of Free Elective-II:

ME803A: Safety & Occupational Health

ME803B: Automation & Control

ME803C: Water Resource Engineering

ME803D: Automobile Engineering