**Structure & Syllabus of Mechanical Engineering of pattern A16 (2016-17 FY to 2019-20)**

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**Structure for S.Y. Mechanical Engineering**

**Academic Year – 2017-18**

**Module-III**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Course Code New | Course Name | Course  | Contact Hours / Week | Assessment Scheme | Total Marks | Credits |
| Type | ISA  | ISA | MSE | ESE |
|   | Breakup |
|   | Th. | Project based Lab | Regular Lab  | CA | MSA | ESA |
| S1 | ME201TLP | Kinematics and Mechanisms | TLP | 3 | - | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S2 | ME202THL | Applied Thermodynamics | THL | 3 | - | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S3 | ME203THL | Material Science | THL | 3 | - | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S4 | ME204THP | Machine Drawing\*  | THP | 3 | 2 | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S5 | ME205TH | Manufacturing Processes | TH | 3 | - | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 3 |
| S6 | HS202OPE  | Costing and Cost Control | OPE | 2 | - | - | - | - | - | 10 | 20 | 70 | 100 | 2 |
| S7 | ME206LAB | Workshop Practice | LAB | - | - | 2 | 30 | 20 | 50 | 100 | - | - | 100 | 2 |
| TOTAL | 17 | 2 | 8 |   |   |   |   |   |   |   | 23 |

**\* S4 –Machine Drawing - Irrespective of module in FIRST semester**

**\* S6 – Costing and Cost Control - Irrespective of module in FIRST semester**

**Structure for S.Y. Mechanical Engineering Academic Year – 2017-18 Module-IV**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Course Code | Course Name | Course | Contact Hours / Week | Assessment Scheme | Total Marks | Credits |
| Type | ISA | ISA | MSE | ESE |
|   | Breakup |
|   | Th. | Project based Lab | Regular Lab | CA | MSA | ESA |
| S1 | ME207THP | Strength of Machine Elements | THP | 3 | 2 | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S2 | ME208THL | Fluid Mechanics | THL | 3 | - | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S3 | ME209THP | Modeling & Simulation of Mechanical Systems\* | THP | 3 | 2 |   | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S4 | ME210THL | Electrical & Electronics Engineering | THL | 3 | - | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S5 | ME211TH | Differential Equations And Vector Analysis | TH | 3 | - | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 3 |
| S6 |   | Engineering and Managerial Economics | OPE | 2 | - | - | - | - | - | 10 | 20 | 70 | 100 | 2 |
| S7 | ME212PS | Mini Project | PRJ | - | - | 2 | 30 | 20 | 50 | 100 | - | - | 100 | 2 |
| TOTAL | 17 | 4 | 6 |   |   |   |   |   |   |   | 23 |

**\* S3 –** **Modeling & Simulation of Mechanical Systems - Irrespective of module in SECOND semester**

**\* S6 –Engineering & Managerial Economics Irrespective of module in SECOND semester**

**Structure for T.Y. Mechanical Engineering**

**Academic Year – 2018-19**

**Module -V**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Course Code | Course Name | Course  | Contact Hours / Week | Assessment Scheme | Total Marks | Credits |
| Type | ISA  | ISA | MSE | ESE |
|   | Breakup |
|   | Th. | Project based Lab | Regular Lab  | CA | MSA | ESA |
| S1 | ME301THL | Internal Combustion Engine | THL | 3 | - | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S2 | ME302THP | Mechanical Design\* | THP | 3 | 2 | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S3 | ME303THL | Fluid Machinery and Fluid Power | THL | 3 | - | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S4 | ME304THP | Mechatronics | THP | 3 | 2 | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S5 | ME305TH | Production Metallurgy | TH | 3 | - | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 3 |
| S6 |   | Employability and skill development\* | OE | 2 | - | - | - | - | - | 10 | 20 | 70 | 100 | 2 |
| S7 | ME306LAB | Measurement & Quality Control | LAB | - | - | 2 | 30 | 20 | 50 | 100 | - | - | 100 | 2 |
| TOTAL | 17 | 4 | 6 |   |   |   |   |   |   |   | 23 |

**\* S2 -Mechanical Design - Irrespective of module in FIRST semester**

**S6- Employability and skill development- Irrespective of module in FIRST semester**

**Structure for T.Y. Mechanical Engineering**

**Academic Year – 2018-19**

**Module -VI**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Course Code | Course Name | Course  | Contact Hours / Week | Assessment Scheme | Total Marks | Credits |
| Type | ISA  | ISA | MSE | ESE |
|   | Breakup |
|   | Th. | Project based Lab | Regular Lab  | CA | MSA | ESA |
| S1 | ME307THP | Design of Machine Elements\* | THP | 3 | 2 | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S2 | ME308THL | Theory of Machines | THL | 3 | - | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S3 | ME309THP | Computational Methods in Mechanical Engineering | THP | 3 | 2 | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S4 | ME310THL | Heat Transfer | THL | 3 | - | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S5 | ME311TH | Production Technology | TH | 3 | - | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 3 |
| S6 |   | Project Management \* | OE | 2 | - | - | - | - | - | 10 | 20 | 70 | 100 | 2 |
| S7 | ME312PS | Mini Project  | PRJ | - | - | 2 | 30 | 20 | 50 | 100 | - | - | 100 | 2 |
| TOTAL | 17 | 4 | 6 |   |   |   |   |   |   |   | 23 |

**\* S1 - Design of Machine Elements- Irrespective of module in SECOND semester**

**\* S6- Project Management Irrespective of module in SECOND semester**

**Structure for B.TECH. Mechanical Engineering**

**Academic Year – 2019-20**

**Module -VII**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Course Code | Course Name | Course  | Contact Hours / Week | Assessment Scheme | Total Marks | Credits |
| Type | ISA  | ISA | MSE | ESE |
|   | Breakup |
|   | Theory | Project based Lab | Regular Lab  | CA | MSA | ESA |
| S1 | ME401THP | CAD/CAM/CAE  | THP | 3 | 2 |   | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S2 | ME402THP | Design of Mechanical Systems | THP | 3 | 2 |   | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S3 | ME403THL | Vibration Analysis | THL | 3 |   | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S4 | ME404THL | Refrigeration and Air Conditioning | THL | 3 |   | 2 | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 4 |
| S5 | ME405PRJ | Project work | PRJ |   | 10 |   | 30 | 20 | 50 | 100 | - | - | 100 | 5 |
| TOTAL | 12 | 14 | 4 |   |   |   |   |   |   |   | 21 |

**Structure for B.TECH. Mechanical Engineering**

**Academic Year – 2019-20**

**Module-VIII**

**Option-A (six months internship based)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Course Code | Course Name | Course  | Contact Hours / Week | Assessment Scheme | Total Marks | Credits |
| Type | ISA  | ISA | MSE | ESE |
|   | Breakup |
|   | Th. | Project based Lab | Regular Lab  | CA | MSA | ESA |
| S1 | -- | Elective  | OPE |   |   |   |   |   |   |   | - | 100 | 100 | 3 |
| S2 | ME406INT | Industrial In-Plant Training  | INT |   |   |   |   |   |   |   | - | 100 | 100 | 8 |
| S3 | ME408CVV | CVV  | CVV |   |   |   |   |   |   |   |   | 100 | 100 | 4 |
| TOTAL | - | - | - |   |   |   |   |   |   |   | 15 |

**S1 - Open elective selected as per recommendation of company**

**S3 - CVV based on S1 & S2 (Report, presentation and Viva)**

**Structure for B.TECH. Mechanical Engineering**

**Academic Year – 2019-20**

**Module-VIII**

**Option-B (3 Elective & Project based)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Course Code | Course Name | Course Type | Contact Hours / Week | Assessment Scheme | Total Marks | Credits |
| ISA Breakup | ISA | MSE | ESE |
| Th. | Project based Lab | Regular Lab  | CA | MSA | ESA |
| S1 | - | Elective -I | TH | 3 | - | - | 30 | 20 | 50 | 20 | 35 | 35 | 100 | 3 |
| S2 | - | Elective -II | TH | 3 | - | - | 30 | 20 | 50 | 20 | 35 | 35 | 100 | 3 |
| S3 | - | Elective -III | TH | 3 | - | - | 30 | 20 | 50 | 20 | 35 | 35 | 100 | 3 |
| S4 | ME406PRJ | Project work | PRJ | - | 8 | - | 30 | 20 | 50 | 100 | - | - | 100 | 4 |
| S5 | ME410PS | Seminar  | SEM | - | 4 | - | 30 | 20 | 50 | 100 | - | - | 100 | 2 |
| TOTAL | 9 | 12 | - |  |  |  |  |  |  |  | 15 |

**Structure for B.TECH. Mechanical Engineering**

**Academic Year – 2019-20**

**Module-VIII**

**Option-C (Research Project based)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Course Code | Course Name | Course Type | Contact Hours / Week | Assessment Scheme | Total Marks | Credits |
| ISA Breakup | ISA | MSE | ESE |
| Th. | Project based Lab | Regular Lab  | CA | MSA | ESA |
| S1 | -- | Open Elective  | TH | 3 | - | - | 30 | 20 | 50 | 30 | 35 | 35 | 100 | 3 |
| S2 | ME407PRJ | Project work | PRJ | - | 16 | - | 30 | 20 | 50 | 100 | - | - | 100 | 8 |
| S3 | ME409CVV | CVV | OR | - | - | - | - | - | - | - | - | 100 | 100 | 4 |
| TOTAL | 3 | 16 | - |  |  |  |  |  |  |  | 15 |

**S1 - Open elective selected as per recommendation by PI/CI**

**S3 - CVV based on S1 & S2 (Report, presentation and Viva)**

**Structure for B.TECH. Mechanical Engineering**

**Academic Year – 2019-20**

**Module-VIII**

**Option-D (Global Internship)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Course Code | Course Name | Course Type | Contact Hours / Week | Assessment Scheme | Total Marks | Credits |
| ISA Breakup | ISA | MSE | ESE |
| Th. | Project based Lab | Regular Lab  | CA | MSA | ESA |
| S1 | ME401GIP | Global Internship Program (six months) | GIP |  |  |  |  |  |  |  | - |  |  | 15 |
| TOTAL | - | - | - |  |  |  |  |  |  |  | 15 |

Electives (2019-20)

|  |  |  |
| --- | --- | --- |
| Elective -I | ME422TH | Tribology |
| ME423TH | Dynamic -Kinemetics |
| ME424TH | Heat Exchange Devices  |
| ME425TH | Non Conventional Energy Sources  |
| Elective -II | ME426TH | Power Plant Engineering  |
| ME427TH | Turbomachines  |
| ME428TH | Industrial Fluid Power  |
| ME429TH | Hybrid Electric Vehicles- Performance & Environment Impact  |
| Elective -III | ME430TH | Robotics  |
| ME431TH | Finite Element Method  |
| ME432TH | Optimization Techniques & Operation Research  |
| ME433TH | Automobile Engineering  |