



**SAVEETHA
ENGINEERING COLLEGE**

AUTONOMOUS



Affiliated to Anna University | Approved by AICTE

**REGULATIONS 2024
FLEXIBLE CHOICE BASED CREDIT SYSTEM
DEPARTMENT OF MECHANICAL ENGINEERING
B.E. Mechanical Engineering
CURRICULUM**

| S.No | Remarks | Category | Course Code R2024 | Course Code R2019 | Course Title | Prerequisite | Theory Credits | Practical Credits | Total Credits | CGPA / Non - CGPA | Course Type |
|------|-----------------|----------|-------------------|-------------------|---|----------------------------|----------------|-------------------|---------------|-------------------|--------------------------------------|
| 1 | Exempted for LE | HS | SH1106 | 19EN106 | English for Engineers | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 2 | | HS | SH1107 | 19EN107 | Technical Writing and Presentation | - | 0 | 2 | 2 | CGPA | Practical (10 Expts) |
| 3 | | HS | SH7801 | NA | Human Values and Professional Ethics | - | 2 | 0 | 2 | CGPA | Theory |
| 4 | Exempted for LE | HS | SH7101 | 22HS101 | தமிழர் மரபு/ Heritage of Tamils | - | 1 | 0 | 1 | CGPA | Theory (Int Only) |
| 5 | Exempted for LE | HS | SH7102 | 22HS102 | தமிழரும் தொழில்நுட்பமும்/ Tamils and Technology | - | 1 | 0 | 1 | CGPA | Theory (Int Only) |
| 6 | | BS | SH4801 | NA | Environmental Sciences and Sustainability | - | 2 | 0 | 2 | CGPA | Theory |
| 7 | Exempted for LE | BS | SH2201 | 19MA201 | Calculus and Matrix Algebra | - | 4 | 0 | 4 | CGPA | Theory |
| 8 | | BS | SH2211 | 19MA211 | Statistics and Numerical Methods | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 9 | Exempted for LE | BS | SH2224 | 19MA224 | Transforms and Differential Equations | - | 4 | 0 | 4 | CGPA | Theory |
| 10 | Exempted for LE | BS | SH3802 | NA | Basics of Engineering Physics | - | 3 | 0 | 3 | CGPA | Theory |
| 11 | Exempted for LE | BS | SH3211 | 19PH211 | Materials Science | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 12 | Exempted for LE | BS | SH4208 | 19CY208 | Basic Engineering Chemistry | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 13 | | ES | CS3301 | 19AI301 | Python Programming | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 14 | | ES | CS3801 | NA | Artificial Intelligence and Applications | - | 1 | 2 | 3 | CGPA | Theory (Int Only) and Practical (10) |
| 15 | Exempted for LE | ES | ME0309 | 19ME309 | Engineering Drawing and Visualisation | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 16 | Exempted for LE | ES | ME0310 | 19ME310 | Engineering Practices Lab | - | 0 | 1 | 1 | CGPA | Practical (6 Expts) |
| 17 | Exempted for LE | ES | ME0311 | 19ME311 | Engineering Mechanics | - | 4 | 0 | 4 | CGPA | Theory |
| 18 | | ES | ME0312 | 19ME312 | Mechanics of Solids | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 19 | | ES | ME0305 | 19ME305 | Fluid Mechanics and Machinery | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 20 | Exempted for LE | ES | EC2306 | 19EE306 | Basic Electrical, Electronics and Instrumentation Engineering | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 21 | | ES | EC2311 | 19EE311 | Electrical Drives and Control | - | 3 | 0 | 3 | CGPA | Theory |
| 22 | | PC | ME0414 | 19ME414 | Engineering Thermodynamics for Mechanical Engineers | - | 4 | 0 | 4 | CGPA | Theory |
| 23 | | PC | ME0405 | 19ME405 | Thermal Engineering | 19ME414 / ME0414 / 19ME401 | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 24 | | PC | ME0406 | 19ME406 | Heat and Mass Transfer | 19ME414 / ME0414 / 19ME401 | 4 | 1 | 5 | CGPA | TIP (6 Expts) |

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| 25 | | PC | ME0415 | 19ME415 | Power Generation Engineering | - | 4 | 0 | 4 | CGPA | Theory |
| 26 | | PC | ME0402 | 19ME402 | Manufacturing Technology I | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 27 | | PC | ME0404 | 19ME404 | Manufacturing Technology II | 19ME402 / ME0402 | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 28 | | PC | ME0801 | NA | Theory of Machines | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 29 | | PC | ME0407 | 19ME407 | Design of Machine Elements | 19ME312 / ME0312 / 19ME304 | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 30 | | PC | ME0408 | 19ME408 | Metrology and Measurements | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 31 | | PC | ME0802 | NA | Hydraulics and Pneumatics | - | 3 | 0 | 3 | CGPA | Theory |
| 32 | | PC | ME0416 | 19ME416 | Mechatronics and IoT | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 33 | | PC | ME0803 | NA | CAD/CAM | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 34 | | PC | ME0411 | 19ME411 | Finite Element Analysis | 19ME312 / ME0312 / 19ME304 | 4 | 1 | 5 | CGPA | TIP (6 Expts) |
| 35 | | PC | CS3410 | 19AI410 | Introduction to Machine Learning | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 36 | | PE(Honours) | ME0534 | 19ME534 | Fundamentals of 3D Printing Technologies | - | 3 | 0 | 3 | CGPA | Theory |
| 37 | | PE(Honours) | ME0535 | 19ME535 | Reverse Engineering and CAD Modelling | 19ME534 / ME0534 | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 38 | | PE(Honours) | ME0536 | 19ME536 | Design for 3D Printing | 19ME534, ME0534 | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 39 | | PE(Honours) | ME0537 | 19ME537 | 3D Printing Machines and Systems | 19ME534, ME0535 | 3 | 0 | 3 | CGPA | Theory |
| 40 | | PE(Honours) | ME0538 | 19ME538 | Materials for 3D Printing | 19ME534, ME0534 | 3 | 0 | 3 | CGPA | Theory |
| 41 | | PE(Honours) | ME0539 | 19ME539 | 3D Printing for Medical Applications | 19ME534, ME0534 | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 42 | | PE(Honours) | ME0540 | 19ME540 | Hybrid and Electric Vehicle Technology | - | 3 | 0 | 3 | CGPA | Theory |
| 43 | | PE(Honours) | ME0541 | 19ME541 | Automotive Materials, Components, Design and Testing | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 44 | | PE(Honours) | ME0542 | 19ME542 | Smart Mobility and Intelligent Vehicles | - | 3 | 0 | 3 | CGPA | Theory |
| 45 | | PE(Honours) | ME0543 | 19ME543 | CAE and CFD Approach in Future Mobility | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 46 | | PE(Honours) | ME0544 | 19ME544 | Thermal Management of Batteries | - | 3 | 0 | 3 | CGPA | Theory |
| 47 | | PE(Honours) | ME0545 | 19ME545 | Vehicle Health Monitoring, Maintenance and Safety | - | 3 | 0 | 3 | CGPA | Theory |
| 48 | | PE | ME0546 | 19ME546 | Value Engineering | - | 3 | 0 | 3 | CGPA | Theory |
| 49 | | PE | ME0521 | 19ME521 | Computer Integrated Manufacturing Systems | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 50 | | PE | ME0547 | 19ME547 | Design For X | - | 3 | 0 | 3 | CGPA | Theory |
| 51 | | PE | ME0548 | 19ME548 | Product Life Cycle Management | - | 3 | 0 | 3 | CGPA | Theory |
| 52 | | PE | ME0549 | 19ME549 | Ergonomics in Design | - | 3 | 0 | 3 | CGPA | Theory |
| 53 | | PE | ME0550 | 19ME550 | New Product Development | - | 3 | 0 | 3 | CGPA | Theory |
| 54 | | PE | ME0551 | 19ME551 | Digital Manufacturing and IoT | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |

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| 55 | | PE | ME0552 | 19ME552 | Lean Manufacturing | - | 3 | 0 | 3 | CGPA | Theory |
| 56 | | PE | ME0553 | 19ME553 | Modern Robotics | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 57 | | PE | ME0554 | 19ME554 | Green Manufacturing Design and Practices | - | 3 | 0 | 3 | CGPA | Theory |
| 58 | | PE | ME0555 | 19ME555 | Environment Sustainability and Impact Assessment | - | 3 | 0 | 3 | CGPA | Theory |
| 59 | | PE | ME0556 | 19ME556 | Energy Saving Machinery and Components | - | 3 | 0 | 3 | CGPA | Theory |
| 60 | | PE | ME0557 | 19ME557 | Optimization Techniques | - | 4 | 0 | 4 | CGPA | Theory |
| 61 | | PE | ME0558 | 19ME558 | Statistical Quality Control | - | 4 | 0 | 4 | CGPA | Theory |
| 62 | | PE | ME0559 | 19ME559 | Quality Audit System | - | 3 | 0 | 3 | CGPA | Theory |
| 63 | | PE | ME0560 | 19ME560 | Operations and Inventory Management | - | 3 | 0 | 3 | CGPA | Theory |
| 64 | | PE | ME0561 | 19ME561 | Reliability Engineering | - | 3 | 0 | 3 | CGPA | Theory |
| 65 | | PE | ME0562 | 19ME562 | Discrete Event System Simulation | - | 3 | 0 | 3 | CGPA | Theory |
| 66 | | PE | ME0563 | 19ME563 | Automotive Engineering | - | 3 | 0 | 3 | CGPA | Theory |
| 67 | | PE | ME0564 | 19ME564 | Refrigeration And Air Conditioning Technology | 19ME405 / ME0405 | 3 | 0 | 3 | CGPA | Theory |
| 68 | | PE | ME0565 | 19ME565 | Turbo Machines | 19ME305 / ME0305 | 3 | 0 | 3 | CGPA | Theory |
| 69 | | PE | ME0566 | 19ME566 | Gas Dynamics and Jet Propulsion | 19ME414 / ME0414 / 19ME401 | 3 | 0 | 3 | CGPA | Theory |
| 70 | | PE | ME0567 | 19ME567 | Advanced Internal Combustion Engine Technology | 19ME405 / ME0405 | 3 | 0 | 3 | CGPA | Theory |
| 71 | | PE | ME0568 | 19ME568 | Computational Fluid Dynamics and Heat Transfer | ME406 / 19ME406 | 3 | 0 | 3 | CGPA | Theory |
| 72 | | PE | ME0533 | 19ME533 | 3D Printing Processes | - | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 73 | | PE | ME0569 | 19ME569 | Composite Materials Engineering | - | 3 | 0 | 3 | CGPA | Theory |
| 74 | | PE | ME0570 | 19ME570 | Non Conventional Machining Processes | - | 3 | 0 | 3 | CGPA | Theory |
| 75 | | PE | ME0804 | NA | Design of Transmission System | ME0407 | 3 | 0 | 3 | CGPA | Theory |
| 76 | | PE | ME0529 | 19ME529 | Process Planning and Cost Estimation | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 77 | | PE | ME0531 | 19ME531 | Intellectual Property Rights | - | 2 | 1 | 3 | CGPA | TIP (6 Expts) |
| 78 | | PE | ME0572 | 19ME572 | Machine Learning Applications in Mechanical Engineering | 19ME404, 19ME405 / ME0404, ME | 3 | 1 | 4 | CGPA | TIP (6 Expts) |
| 79 | | PE | ME0571 | 19ME571 | Advanced Solid Surface Design and Simulation Technique | - | 0 | 3 | 3 | CGPA | Practical (10 Expts) |
| 80 | | OE | XXXXXX | 19XXXXX | Open Electives | - | 0 | 0 | 0 | CGPA | Theory |
| 81 | | OE | XXXXXX | 19XXXXX | Online Courses | - | 0 | 0 | 0 | CGPA | Experiential Learning |
| 82 | | EEC | ME0701 | 19ME701 | Design and Fabrication Project | - | 0 | 2 | 2 | CGPA | Practical (10 Expts) |
| 83 | Option 1 | EEC | ME0702 | 19ME702 | Project Work Phase I | - | 0 | 2 | 2 | CGPA | Project (Int Only) |
| 84 | Option 1 | EEC | ME0703 | 19ME703 | Project Work Phase II | - | 0 | 6 | 6 | CGPA | Project |

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| 85 | Option 2 | EEC | SH6802 | NA | Start Up | - | 0 | 8 | 8 | CGPA | Project |
| 86 | | EEC | SH6708 | 19EY708 | Career Development Skills | NIL | 1 | 0 | 1 | CGPA | Theory (Int Only) |
| 87 | | EEC | SH6709 | 19EY709 | Reasoning Ability | NIL | 1 | 0 | 1 | CGPA | Theory (Int Only) |
| 88 | | EEC | SH6710 | 19EY710 | Quantitative Ability I | NIL | 1 | 0 | 1 | CGPA | Theory (Int Only) |
| 89 | | EEC | SH6711 | 19EY711 | Quantitative Ability II | SH6710 / 19EY710 | 1 | 0 | 1 | CGPA | Theory (Int Only) |
| 90 | | EEC | SH6712 | 19EY712 | Employment Enrichment Skills | 19EY702 / 19EY709 / SH6709 | 1 | 0 | 1 | CGPA | Theory (Int Only) |
| 91 | | EEC | SH6713 | 19EY713 | Placement Readiness Assessment | 19EY704 / 19EY711/SH 6711 | 1 | 0 | 1 | CGPA | Theory (Int Only) |
| 92 | | EEC | SH6707 | 19EY707 | Paper Publication | - | 0 | 0 | 1 | NON-CGPA | Experiential Learning (Int Only) |
| 93 | | MC | SH8801 | NA | Constitutionalism and Artificial Intelligence Policies in India | - | 1 | 0 | 1 | NON-CGPA | Theory (Int Only) |
| 94 | Any 1 | MC | SH8802 | NA | Internship | - | 0 | 0 | 2 | NON-CGPA | Experiential Learning (Int Only) |
| 95 | Any 1 | MC | SH8803 | NA | Entrepreneurship | - | 0 | 0 | 2 | NON-CGPA | Experiential Learning (Int Only) |
| 96 | Any 1 | MC | SH6803 | 19MC807 | National Service Scheme | - | 0 | 0 | 0 | NON-CGPA | Experiential Learning (Int Only) |
| 97 | Any 1 | MC | SH8807 | 19MC808 | National Sports Organization | - | 0 | 0 | 0 | NON-CGPA | Experiential Learning (Int Only) |
| 98 | Any 1 | MC | SH8808 | 19MC809 | Youth Red Cross | - | 0 | 0 | 0 | NON-CGPA | Experiential Learning (Int Only) |

| BATCH: 2024- 2028 Onwards | | |
|-----------------------------------|--------------------------------|--------------------------------------|
| Category | Credits to be Earned (Regular) | Credits to be Earned (Lateral Entry) |
| Humanities and Science | 10 | 4 |
| Basic Science | 25 | 6 |
| Engineering Science | 29 | 17 |
| Professional Core | 55 | 55 |
| Professional Electives | 18 | 18 |
| Open Electives | 12 | 12 |
| Employability Enhancement Courses | 16 | 16 |
| Mandatory Courses | 3 | 3 |
| TOTAL | 168 | 131 |