**ANNAUNIVERSITY,CHENNAI**
**NON-AUTONOMOUSCOLLEGESAFFILIATEDTOANNAUNIVERSITY REGULATIONS 2021**
**CHOICEBASEDCREDITSYSTEM**

**B.E.AERONAUTICALENGINEERING**

**PROGRAMEDUCATIONALOBJECTIVES(PEOs):**

| | |
|---|---|
| **I.** | To employ comprehensive knowledge in Aeronautical Engineering and analytical skills to work towards solving complex problems to excel in the professional career. |
| **II.** | Todesign,analyzeandproducecuttingedgeengineeringsolutionsbyemploying modern techniques and adhering to moral values for sustainable development. |
| **III.** | To assume global careers and leadership responsibilities through consistent learning with idealistic managerial practices. |

**PROGRAM OUTCOMES(POs):**

| PO# | GraduateAttribute |
|---|---|
| 1 | **Engineeringknowledge**:Applytheknowledgeofmathematics,science,engineering fundamentals,andanengineeringspecializationtothesolutionofcomplexengineering problems. |
| 2 | **Problemanalysis**:Identify,formulate,reviewresearchliterature,andanalyzecomplex engineeringproblemsreachingsubstantiatedconclusionsusingfirstprinciplesof mathematics,naturalsciences, and engineering sciences. |
| 3 | **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the publichealthandsafety,andthecultural,societal,and environmentalconsiderations. |
| 4 | **Conductinvestigationsofcomplexproblems**:Useresearch-basedknowledge andresearchmethodsincludingdesignofexperiments,analysisandinterpretationofdata, and synthesis of the information to provide valid conclusions. |
| 5 | **Moderntoolusage**:Create,select,andapplyappropriatetechniques,resources, andmodern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. |
| 6 | **Theengineerandsociety**:Applyreasoninginformedbythecontextualknowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilitiesrelevanttothe professional engineering practice. |
| 7 | **Environmentandsustainability**:Understandtheimpactoftheprofessionalengineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. |
| 8 | **Ethics**:Applyethicalprinciplesandcommittoprofessionalethicsandresponsibilities andnormsoftheengineeringpractice. |
| 9 | **Individualandteamwork**:Functioneffectivelyasanindividual,andasamemberorleaderin diverse teams, and in multidisciplinary settings. |

| | |
|---|---|
| 10 | **Communication:** Communicateeffectivelyoncomplexengineeringactivitieswiththe engineeringcommunityandwithsocietyatlarge,suchas,beingabletocomprehendand write effective reports and design documentation, make effective presentations, and give and receive clear instructions. |
| 11 | **Projectmanagementandfinance:**Demonstrateknowledgeandunderstandingofthe engineering andmanagementprinciplesand applythesetoone'sownwork,asamember andleaderinateam,tomanageprojectsandinmultidisciplinaryenvironments. |
| 12 | **Life-longlearning**:Recognizetheneedfor,andhavethepreparationandability toengageinindependentandlife-longlearninginthebroadestcontextoftechnological change. |

**PROGRAMSPECIFICOUTCOMES(PSOs):**

| | |
|---|---|
| 1. | To gather data using modern tools and apply design techniques to develop solutions for challenges in the domain of Aerodynamics, Propulsion, Aircraft Structures and Aircraft Maintenance with professional ethics. |
| 2. | To function as engineering solution providers or entrepreneurs, who are able to manage, innovate, communicate, train and lead a team for continuous improvement. |
| 3. | Graduate will be able to work as a team member which will be a main requirement in industry or research organisation or in any business enterprise. This will pave the way for successful career for thegraduate and also play a role for the success of the organisation in which the graduate is employed |

**PEO's–PO's&PSO'sMAPPING:**

| **PEO** | **PO** | | | | | | | | | | | | **PSO** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **1** | **2** | **3** |
| **I.** | 3 | 3 | 3 | 3 | 2 | - | - | - | - | 1 | 1 | - | 3 | 2 | - |
| **II.** | 3 | 3 | 3 | 2 | 3 | 2 | 1 | 2 | - | 1 | 2 | 2 | 3 | 2 | - |
| **III.** | 1 | 2 | 3 | - | - | 3 | 3 | 3 | 3 | 3 | 2 | 3 | - | 2 | 3 |

## PROGRAMARTICULATIONMATRIX

| Year | Sem | Coursename | PO | | | | | | | | | | | | PSO | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| I | I | ProfessionalEnglish-I | 1.6 | 2.2 | 1.8 | 2.2 | 1.5 | 3 | 3 | 3 | 1.6 | 3 | 3 | 3 | | | |
| | | MatricesandCalculus | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 3 | - | - | - |
| | | EngineeringPhysics | 3 | 3 | 1.6 | 1.2 | 1.8 | 1 | - | - | - | - | - | 1 | - | - | - |
| | | EngineeringChemistry | 2.8 | 1.3 | 1.6 | 1 | - | 1.5 | 1.8 | - | | - | - | 1.5 | - | - | - |
| | | ProblemSolvingandPython Programming | 2 | 3 | 3 | 3 | 2 | - | - | - | - | - | 2 | 2 | 3 | 3 | - |
| | | ProblemSolvingandPython Programming Laboratory | 2 | 3 | 3 | 3 | 2 | - | - | - | - | - | 2 | 2 | 3 | 3 | - |
| | | PhysicsandChemistryLaboratory | 3 | 2.4 | 2.6 | 1 | 1 | | | | | | | | | | |
| | | | 2.6 | 1.3 | 1.6 | 1 | 1 | 1.4 | 1.8 | - | - | - | - | 1.3 | - | - | - |
| | | EnglishLaboratory[$] | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | - | - | - |
| | II | ProfessionalEnglish-II | 3 | 3 | 3 | 3 | 2.75 | 3 | 3 | 3 | 2.2 | 3 | 3 | 3 | - | - | - |
| | | StatisticsandNumericalMethods | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 3 | - | - | - |
| | | AppliedPhysics | | | | | | | | | | | | | | | |
| | | BasicElectricalandElectronics Engineering | 2 | 1.8 | 1 | | | | | 1 | | | | 2 | | | 1 |
| | | EngineeringGraphics | 3 | 1 | 2 | - | 2 | - | - | - | - | 3 | - | 2 | 2 | 2 | - |
| | | EngineeringPracticesLaboratory | 3 | 2 | | | 1 | 1 | 1 | | | | | 2 | 2 | 1 | 1 |
| | | BasicElectricalandElectronics Engineering Laboratory | 3 | 3 | 2 | 1 | 1 | | | 1.5 | 2 | | | | | | 1 |
| | | CommunicationLaboratory/Foreign Language[$] | 2.4 | 2.8 | 3 | 3 | 1.8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | - | - | - |
| II | III | TransformsandPartialDifferential Equations | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | - | - | - |
| | | AeroEngineeringThermodynamics | 3 | 2.2 | 2.2 | 1.2 | 1.2 | 1 | 1 | 1 | - | 1 | 1 | 1.8 | 3 | 1.2 | 1 |
| | | SolidMechanics | 3 | 2.6 | 2.1 | 2.7 | - | - | - | - | - | - | 1 | 3 | 3 | 1 | 1 |
| | | FluidMechanicsandMachines | 3 | 3 | 2.0 | 1.6 | 1.4 | - | - | - | - | - | 1.0 | - | 3 | 1 | 1 |
| | | ElementsofAeronauticalEngineering | 1 | 2 | 2 | 2 | 2 | - | - | - | - | - | 1 | | 2 | 1 | - |
| | | AircraftSystemsandInstruments | 3 | 2.8 | 2.4 | 2 | 2.2 | 1.8 | 2 | 1 | 1.8 | 3 | 1 | 1.2 | 3 | 1 | 1 |
| | | Thermodynamics andStrengthofMaterialsLaboratory | 3.00 | 2.00 | 2.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.33 | 2.00 | 2.00 | 1.33 | 1.33 | 2.67 | 1.33 | 1.33 |
| | | FluidMechanicsAndMachines Laboratory | 3.00 | 2.00 | 2.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 3.00 | 3.00 | 2.00 | 1.67 | 3.00 | 1.67 | 2.00 |
| | IV | VectorCalculusandComplex Functions | 3 | 3 | 3 | 2 | 1.2 | 0.6 | 0 | 0.2 | 0 | 0 | 1.2 | 1.2 | 1.6 | 1.2 | 1.6 |
| | | LowSpeed Aerodynamics | 3 | 2.3 | 1.3 | 1 | 2 | 1 | 1 | 2 | - | 1 | 1 | 1.5 | 2.6 | 1.8 | 2 |
| | | AirBreathingPropulsion | 3 | 2.4 | 2.2 | 2.4 | 2.8 | 1.4 | 1.8 | 1.2 | 2 | 2 | 1.2 | 1 | 3 | 1 | 1 |
| | | MechanicsofMachines | 3 | 2.7 | 2.9 | 2.7 | 2 | 0.8 | 1 | - | - | - | 0.8 | 3 | 3 | 1 | 1 |
| | | AircraftStructures-I | 2.8 | 2.2 | 1.8 | 1.6 | 2.5 | - | - | - | - | - | 2.0 | 2 | 2.8 | 1.4 | 1 |
| | | EnvironmentalScienceand Sustainability | 2.8 | 1.8 | 1 | 1 | - | 2.2 | 2.4 | - | - | - | - | 1.8 | - | - | - |
| | | AerodynamicsLaboratory | 3 | 1.667 | 1.667 | 1 | 2.667 | 1 | | 1.333 | 2.667 | 2.333 | 3 | 1.333 | 3 | 2 | 2 |
| | | PropulsionLaboratory | 3.00 | 2.33 | 2.67 | 1.67 | 1.33 | 1.50 | 1.50 | 1.00 | | 1.67 | | 1.33 | 3.00 | 2.00 | 2.33 |
| III | V | AircraftStructures-II | 3 | 2.9 | 2.1 | 2.6 | 2.1 | 0.4 | 1 | - | - | - | 0.8 | 3 | 3 | 1 | 1 |
| | | AerodynamicsII | 2 | 2.8 | 2.8 | 2.8 | 2.8 | - | - | - | - | - | - | - | 3 | 1 | 1 |
| | | ProfessionalElectiveI | | | | | | | | | | | | | | | |
| | | ProfessionalElectiveII | | | | | | | | | | | | | | | |
| | | ProfessionalElectiveIII | | | | | | | | | | | | | | | |
| | | AircraftStructuresLaboratory | 3 | 2.3 | 2.3 | 1 | 1 | 1 | 1 | 1.00 | | 1 | 1 | 1 | 2 | 1 | 1 |
| | | CADLaboratory | 2.3 | 2.3 | 2.3 | 1 | 1 | 1 | 1 | 1.00 | | 1 | | 1 | 2 | 1 | 1 |
| | VI | FlightDynamics | 3 | 2.6 | 1.6 | 1 | 1.6 | 1 | 1 | 2.4 | 1 | 1 | 1.6 | 1.6 | 2.4 | 1.6 | 1.6 |
| | | AircraftDesign | 1.6 | 3 | 1.8 | 1.8 | 2.0 | 0.0 | 2.0 | 1.0 | 0.0 | 2.0 | 0.0 | 1.0 | 2.6 | 1.5 | 2.5 |
| | | OpenElective–I* | | | | | | | | | | | | | | | |
| | | ProfessionalElectiveIV | | | | | | | | | | | | | | | |
| | | ProfessionalElectiveV | | | | | | | | | | | | | | | |
| | | ProfessionalElectiveVI | | | | | | | | | | | | | | | |
| | | AircraftDesignProject | 3.00 | 2.33 | 1.00 | 1.33 | 1.00 | 1.50 | 1.00 | 1.00 | | 1.67 | | 1.33 | 3.00 | 1.67 | 1.67 |
| | | FlightTraining/FlightSimulation Laboratory | 3 | 3 | 2.4 | 1.4 | 1.6 | 1.0 | 1.2 | 1.8 | 2.8 | 2.8 | 1.8 | 1.6 | 3 | 1.8 | 2 |
| IV | VII | WindTunnel Techniques | 1.0 | 2.2 | 1.0 | 1.5 | 2.3 | - | - | - | - | - | - | - | 2.6 | 1 | 1 |
| | | HumanValuesandEthics | | | | | | | | | | | | | | | |
| | | Elective–Management | | | | | | | | | | | | | | | |
| | | OpenElective–II* | | | | | | | | | | | | | | | |
| | | OpenElective–III** | | | | | | | | | | | | | | | |
| | | OpenElective– IV** | | | | | | | | | | | | | | | |
| | | AeroEngineandAirframeLaboratory | 2.67 | 3 | 1.33 | 1 | 1.33 | 1.0 | 2 | 2.00 | 2.33 | 2.33 | 1.33 | 1.67 | 2.33 | 1.33 | 2.33 |
| | | AircraftSystemsLab | 3.0 | 2.67 | 1.67 | 1 | 1.00 | 1.0 | 1.00 | 2.00 | 2.67 | 2.67 | 1.67 | 1.67 | 2.33 | 1.67 | 2 |
| | | ComputationalAnalysisLab | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | 1 | 2 | 1.67 | 1.67 |
| | VIII | ProjectWork/Internship | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

**ANNAUNIVERSITY,CHENNAI**
**NON-AUTONOMOUSCOLLEGESAFFILIATEDTOANNAUNIVERSITY**
**B.E.AERONAUTICALENGINEERING**
**REGULATIONS 2021**
**CHOICE BASED CREDIT SYSTEM**
**CURRICULUMANDSYLLABIFORITOVIIISEMESTERS**

**SEMESTER I**

| SL. NO. | COURSE CODE | COURSETITLE | CATE-GORY | PERIODSPER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| 1. | IP3151 | InductionProgramme | - | - | - | - | - | 0 |
| **THEORY** | | | | | | | | |
| 2. | HS3152 | ProfessionalEnglish-I | HSMC | 3 | 0 | 0 | 3 | 3 |
| 3. | MA3151 | MatricesandCalculus | BSC | 3 | 1 | 0 | 4 | 4 |
| 4. | PH3151 | EngineeringPhysics | BSC | 3 | 0 | 0 | 3 | 3 |
| 5. | CY3151 | EngineeringChemistry | BSC | 3 | 0 | 0 | 3 | 3 |
| 6. | GE3151 | ProblemSolvingandPython Programming | ESC | 3 | 0 | 0 | 3 | 3 |
| 7. | GE3152 | தமிழர்மரபு/Heritageof Tamils | HSMC | 1 | 0 | 0 | 1 | 1 |
| **PRACTICAL** | | | | | | | | |
| 7. | GE3171 | ProblemSolvingandPython Programming Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| 8. | BS3171 | PhysicsandChemistry Laboratory | BSC | 0 | 0 | 4 | 4 | 2 |
| 9. | GE3172 | EnglishLaboratory[$] | HSMC | 0 | 0 | 2 | 2 | 1 |
| | | | **TOTAL** | **16** | **1** | **10** | **27** | **22** |

**[$]SkillBasedCourse**

**SEMESTER II**

| SL. NO. | COURSE CODE | COURSETITLE | CATE-GORY | PERIODS PERWEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | HS3252 | ProfessionalEnglish-II | HSMC | 2 | 0 | 0 | 2 | 2 |
| 2. | MA3251 | StatisticsandNumericalMethods | BSC | 3 | 1 | 0 | 4 | 4 |
| 3. | PH3205 | AppliedPhysics | BSC | 3 | 0 | 0 | 3 | 3 |
| 4. | BE3251 | BasicElectricalandElectronics Engineering | ESC | 3 | 0 | 0 | 3 | 3 |
| 5. | GE3251 | EngineeringGraphics | ESC | 2 | 0 | 4 | 6 | 4 |
| 6. | | NCCCreditCourseLevel1[#] | - | 2 | 0 | 0 | 2 | 2 |
| 7. | GE3252 | தமிழரும்தகதொழில்நுட்பமும்/ Tamils and Technology | HSMC | 1 | 0 | 0 | 1 | 1 |
| **PRACTICAL** | | | | | | | | |
| 8. | GE3271 | EngineeringPracticesLaboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| 9. | BE3271 | BasicElectricalandElectronics Engineering Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| 10. | GE3272 | CommunicationLaboratory/ Foreign Language [$] | EEC | 0 | 0 | 4 | 4 | 2 |
| | | | **TOTAL** | **14** | **1** | **16** | **31** | **23** |

**[#]NCCCreditCourselevel 1isoffered for NCCstudentsonly. Thegradesearnedbythestudentswillberecordedin theMark Sheet, however the same shall not be considered for the computation of CGPA.**

**[$]SkillBasedCourse**

## SEMESTER III

| S. NO. | COURSE CODE | COURSETITLE | CATE GORY | PERIODSPER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | MA3351 | TransformsandPartialDifferential Equations | BSC | 3 | 1 | 0 | 4 | 4 |
| 2. | AE3351 | AeroEngineeringThermodynamics | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | AE3352 | Solid Mechanics | ESC | 4 | 0 | 0 | 4 | 4 |
| 4. | CE3391 | FluidMechanicsandMachinery | ESC | 3 | 1 | 0 | 4 | 4 |
| 5. | AE3301 | ElementsofAeronautical Engineering | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | AE3302 | AircraftSystemsandInstruments | PCC | 3 | 0 | 0 | 3 | 3 |
| **PRACTICALS** | | | | | | | | |
| 7. | AS3361 | Thermo dynamics and Strength of Materials Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 8. | CE3362 | Fluid Mechanics and Machinery Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 9. | GE3361 | Professional Development[$] | EEC | 0 | 0 | 2 | 2 | 1 |
| | | | **TOTAL** | **19** | **2** | **10** | **31** | **26** |

**[$]SkillBased Course**

## SEMESTER IV

| S. NO. | COURSE CODE | COURSETITLE | CATE GORY | PERIODSPER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | MA3452 | Vector Calculus and Complex Functions | BSC | 3 | 1 | 0 | 4 | 4 |
| 2. | AE3401 | Aerodynamics I | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | AE3402 | Air Breathing Propulsion | PCC | 3 | 1 | 0 | 4 | 4 |
| 4. | AE3491 | Mechanics of Machines | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | AE3403 | Aircraft Structures -I | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | GE3451 | Environmental Sciences and Sustainability | BSC | 2 | 0 | 0 | 2 | 2 |
| 7. | | NCCCreditCourseLevel2[#] | | 3 | 0 | 0 | 3 | 3 |
| **PRACTICALS** | | | | | | | | |
| 8. | AE3411 | Aero dynamics Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 9. | AE3412 | Propulsion Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| | | | **TOTAL** | **17** | **2** | **8** | **27** | **23** |

**[#]NCCCreditCourselevel2isofferedforNCCstudentsonly.Thegradesearnedbythestudentswillbe recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.**

**SEMESTER V**

| S. NO. | COURSE CODE | COURSETITLE | CATE GORY | PERIODS PERWEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | AE3501 | Aircraft Structures-II | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | AE3502 | Aero dynamicsII | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | CAE347 | Avionics | PEC | - | - | - | - | 3 |
| 4. | AE3002 | Aircraft General Engineering and Maintenance Practices | PEC | - | - | - | - | 3 |
| 5. | CMF338 | Non destructive Testing and Evaluation | PEC | - | - | - | - | 3 |
| 6. | MX3081 | Introduction To Women and Gender Studies | MC | 3 | 0 | 0 | 3 | Non-Credit Course |
| **PRACTICALS** | | | | | | | | |
| 7. | AE3511 | Air craft Structures Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 8. | AE3581 | CAD Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| | | | **TOTAL** | - | - | - | - | **19** |

**SEMESTERVI**

| S. NO. | COURSE CODE | COURSETITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | AE3691 | Flight Dynamics | PCC | 3 | 1 | 0 | 4 | 4 |
| 2. | AE3601 | Aircraft Design | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | OCS351 | Artificial Intelligent And Machine Leaning Fundamentals | OEC | 3 | 0 | 0 | 3 | 3 |
| 4. | ME3393 | Manufacturing Processes | PEC | 3 | 0 | 0 | - | 3 |
| 5. | CAE340 | Rocket Propulsion | PEC | 3 | 0 | 0 | - | 3 |
| 6. | CAE346 | Aerospace Materials | PEC | 3 | 0 | 0 | - | 3 |
| 7. | MX3089 | Industrial Safety | MC | 3 | 0 | 0 | 3 | Non-Credit Course |
| 8. | | NCCCreditCourseLevel3[#] | | 3 | 0 | 0 | 3 | 3 |
| **PRACTICALS** | | | | | | | | |
| 9. | AE3611 | Aircraft Design Project | PCC | 0 | 0 | 4 | 4 | 2 |
| 10. | AE3612 | Flight Training/Flight Simulation Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| | | | **TOTAL** | - | - | - | - | **23** |

**SEMESTERVII**

| SL. NO. | COURSE CODE | COURSETITLE | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|
| **THEORY** | | | | | | | | |
| 1. | GE8077 | Total Quality Management | HS | 3 | 3 | 0 | 0 | 3 |
| 2. | AE8751 | Avionics | PC | 3 | 3 | 0 | 0 | 3 |
| 3. | ME8093 | Computational Fluid Dynamics | PC | 3 | 3 | 0 | 0 | 3 |
| 4. | OIE751 | Robotics | OE | 3 | 3 | 0 | 0 | 3 |
| 5. | ME8097 | Non Destructive Testing and Evaluation | PE | 3 | 3 | 0 | 0 | 3 |
| 6. | Nan muthalvan course | | | 3 | 3 | 0 | 0 | 3 |
| **PRACTICAL** | | | | | | | | |
| 7. | AE8711 | Aircraft Sys tems Laboratory | PC | 4 | 0 | 0 | 4 | 2 |
| 8. | AE8712 | Flight Integration Systems and Control Laboratory | PC | 4 | 0 | 0 | 4 | 2 |
| 9. | AE8713 | Aircraft Design Project- II | EEC | 2 | 0 | 0 | 2 | 1 |
| | | | **TOTAL** | **28** | **18** | **0** | **10** | **23** |

**SEMESTERVIII**

| SL. NO. | COURSE CODE | COURSETITLE | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|
| **THEORY** | | | | | | | | |
| 1. | AE8012 | Wind Tunnel Technologies | PE | 3 | 3 | 0 | 0 | 3 |
| 2. | MG8591 | Principles Of Management | PE | 3 | 3 | 0 | 0 | 3 |
| **PRACTICAL** | | | | | | | | |
| 3. | AE8811 | ProjectWork | EEC | 20 | 0 | 0 | 20 | 10 |
| | | | **TOTAL** | **26** | **6** | **0** | **20** | **16** |


**PARISUTHAM**
**INSTITUTE OF TECHNOLOGY & SCIENCE**
**(AUTONOMOUS)**
AICTE Approved / Affiliated to Anna University | NAAC 'A' Grade Accredited
Thanjavur - 613 006. TN. INDIA

**ANNA UNIVERSITY CURRICULAM AND ELECTIVES - REGULATION 2021**

**DEPARTMENT OF CSE AY : 2023-24 (ODD)**

**SEMESTER III**

| S.NO. | COURSE CODE | COURSE TITLE |
|---|---|---|
| 1 | CS3391 | Object Oriented Programming |
| 2 | MA3354 | Discrete Mathematics |
| 3 | CS3351 | Digital Principles and Computer Organization |
| 4 | CS3352 | Foundations of Data Science |
| 5 | CS3301 | Data Structures |
| 6 | CS3311 | Data Structures Laboratory |
| 7 | CS3381 | Object Oriented Programming Laboratory |
| 8 | CS3361 | Data Science Laboratory |
| 9 | GE3361 | Professional Development |

**SEMESTER V**

| S.NO. | COURSE CODE | COURSE TITLE |
|---|---|---|
| 1 | CS3591 | Computer Networks |
| 2 | CS3501 | Compiler Design |
| 3 | CB3491 | Cryptography and Cyber Security |
| 4 | CS3551 | Distributed Computing |
| 5 | CCS335 | Cloud Computing |
| 6 | CCS358 | Principles of Programming Language |
| 7 | MX3081 | Introduction to Women and Gender Studies |

**ANNA UNIVERSITY CURRICULAM AND ELECTIVES - REGULATION 2017**

**SEMESTER VII**

| S.NO. | COURSE CODE | COURSE TITLE |
|---|---|---|
| 1 | MG8591 | Principles of Management |
| 2 | CS8792 | Cryptography and Network Security |
| 3 | CS8791 | Cloud Computing |
| 4 | SB8051 | Full Stack Development (NaanMudhalvan) |
| 5 | GE8071 | Disaster Management |
| 6 | GE8077 | Total Quality Management |
| 7 | CS8711 | Cloud Computing Laboratory |
| 8 | IT8761 | Security Laboratory |


**PARISUTHAM**
**INSTITUTE OF TECHNOLOGY & SCIENCE**
**(AUTONOMOUS)**
AICTE Approved / Affiliated to Anna University | NAAC 'A' Grade Accredited
Thanjavur - 613 006. TN. INDIA

**ANNA UNIVERSITY CURRICULAM AND ELECTIVES - REGULATION 2021 & 2017**

**DEPARTMENT OF CSE AY : 2023-24 (EVEN)**

**SEMESTER IV**

| S.NO. | COURSE CODE | COURSE TITLE |
|---|---|---|
| 1 | CS3452 | Theory of Computation |
| 2 | CS3491 | Artificial Intelligence and Machine Learning |
| 3 | CS3492 | Database Management Systems |
| 4 | CS3401 | Algorithms |
| 5 | CS3451 | Introduction to Operating Systems |
| 6 | GE3451 | Environmental Sciences and Sustainability |
| 7 | | NCC Credit Course Level 2# |
| 8 | CS3461 | Operating Systems Laboratory |
| 9 | CS3481 | Database Management Systems Laboratory |

**SEMESTER VI**

| S.NO. | COURSE CODE | COURSE TITLE |
|---|---|---|
| 1 | CCS356 | Object Oriented Software Engineering |
| 2 | CS3691 | Embedded Systems and IoT |
| 3 | OIE351 | Introduction to Industrial Engineering |
| 4 | CCS364 | Soft Computing |
| 5 | CCS375 | Web Technologies |
| 6 | CCS341 | Data Warehousing |
| 7 | CCS367 | Storage Technologies |
| 8 | MX3089 | Industrial Safety |
| 9 | | NCC Credit Course Level 3# |

**ANNA UNIVERSITY CURRICULAM AND ELECTIVES - REGULATION 2017**

**SEMESTER VIII**

| S.NO. | COURSE CODE | COURSE TITLE |
|---|---|---|
| 1 | CS8080 | Information Retrieval Techniques |
| 2 | GE8076 | Professional Ethics in Engineering |
| 3 | CS8811 | Project Work |

ECE - Curriculum - 2023 - 2024

| | |
|---|---|
| Random Processes and Linear Algebra | MA3355 |
| C Programming and Data Structures | CS3353 |
| Signals and Systems | EC3354 |
| Electronic Devices and Circuits | EC3353 |
| Control Systems | EC3351 |
| Digital Systems Design | EC3352 |
| Electronic Devices and Circuits Laboratory | EC3361 |
| C Programming and Data Structures Laboratory | CS3362 |
| Professional Development | GE3361 |
| Electromagnetic Fields | EC3452 |
| Networks and Security | EC3401 |
| Linear Integrated Circuits | EC3451 |
| Digital Signal Processing | EC3492 |
| Communication Systems | EC3491 |
| Environmental Sciences and Sustainability | GE3451 |
| Communication Systems Laboratory | EC3461 |
| Linear Integrated Circuits Laboratory | EC3462 |
| Wireless Communication | EC3501 |
| VLSI and Chip Design | EC3552 |
| Transmission lines and RF Systems | EC3551 |
| Satellite Communication | CEC352 |
| Image Processing | CEC366 |
| Wireless Sensor Network Design | CEC365 |
| Introduction to Women and Gender Studies | MX3081 |
| Embedded Systems and IOT Design | ET3491 |
| Artificial Intelligence and Machine Learning | CS3491 |
| Introduction to Industrial Engineering | OIE351 |
| Advanced Wireless Communication Techniques | CEC333 |
| Optical Communication & Networks | CEC345 |
| Brain Computer Interface and Applications | CBM342 |
| Antennas and Microwave Engineering | EC8701 |
| Optical Communication | EC8751 |
| Embedded and Real Time Systems | EC8791 |
| Ad hoc and Wireless Sensor Networks | EC8702 |
| Disaster Management | GE8071 |
| Embedded Laboratory | EC8711 |
| Advanced Communication Laboratory | EC8761 |
| Professional Ethics in Engineering | GE8076 |
| Satellite Communication | EC8094 |
| Project Work | EC8811 |

**IV semester**

| S.NO | SUBJECT CODE | SUBJECT NAME |
|---|---|---|
| 1 | GE3451 | Environmental Sciences and Sustainability |
| 2 | EE3401 | Transmission and Distribution |
| 3 | EE3402 | Linear Integrated Circuits |
| 4 | EE3403 | Measurements and Instrumentation |
| 5 | EE3404 | Microprocessor and Microcontroller |
| 6 | EE3405 | Electrical Machines - II |
| 7 | EE3411 | Electrical Machines Laboratory - II |
| 8 | EE3412 | Linear and Digital Circuits Laboratory |
| 9 | EE3413 | Microprocessor and Microcontroller laboratory |

**V semester**

| S.NO | SUBJECT CODE | SUBJECT NAME |
|---|---|---|
| 1 | EE3501 | Power System Analysis |
| 2 | EE3591 | Power Electronics |
| 3 | EE3503 | Control Systems |
| 4 | EE3012 | Electrical Drives |
| 5 | EE3014 | Power Electronics For Renewable Energy Systems |
| 6 | EE3009 | Special Electrical Machines |
| 7 | MX3081 | Introduction To Women And Gender Studies |

**VI Semester**

| S.NO | SUBJECT CODE | SUBJECT NAME |
|---|---|---|
| 1 | EE3601 | Protection and Switchgear |
| 2 | EE3602 | Power system operation and control |
| 3 | EE3012 | Electrical drives |
| 4 | EE3016 | Embedded system design |
| 5 | EE3033 | Hybrid energy technology |
| 6 | OCS351 | Artificial Intelligence and Machine Learning Fundamentals |
| 7 | MX3089 | Industrial safety |
| 8 | EE3611 | Power system laboratory |

**VII Semester**

| S.NO | SUBJECT CODE | SUBJECT NAME |
|---|---|---|
| 1 | **EE3701** | **HIGH VOLTAGE ENGINEERING** |
| 2 | **GE3791** | **HUMAN VALUES AND ETHICS** |
| 3 | **GE3792** | **INDUSTRIAL MANAGEMNET** |
| 4 | **OCS353** | **DATA SCIENCE FUNDAMENTALS** |
| 5 | **OFD352** | **TRADITIONAL INDIAN FOODS** |
| 6 | **OPE353** | **INDUSTRIAL SAFETY** |
| 7 | **EE3037** | **POWER SYSTEM TRANSIENTS** |

**ANNA UNIVERSITY, CHENNAI**
**NON-AUTONOMOUS AFFILIATED COLLEGES**
**REGULATIONS 2021**
**CHOICE BASED CREDIT SYSTEM**

**B. E. MECHANICAL ENGINEERING**

## PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

| | |
|---|---|
| **I.** | Effectuating success in careers by exploring with the design, digital and computational analysis of engineering systems, experimentation and teCsting, smart manufacturing, technical services, and research. |
| **II.** | Amalgamating effectively with stakeholders to update and improve their core competencies and abilities to ethically compete in the ever-changing multicultural global enterprise. |
| **III.** | To encourage multi-disciplinary research and development to foster advanced technology, and to nurture innovation and entrepreneurship in order to compete successfully in the global economy. |
| **IV.** | To globally share and apply technical knowledge to create new opportunities that proactively advances our society through team efforts and to solve various challenging technical, environmental and societal problems. |
| **V.** | To create world class mechanical engineers capable of practice engineering ethically with a solid vision to become great leaders in academia, industries and society. |

## PROGRAM OUTCOMES (POs)

| PO | GRADUATE ATTRIBUTE |
|---|---|
| 1 | **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. |
| 2 | **Problem analysis**: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. |
| 3 | **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. |
| 4 | **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. |
| 5 | **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. |
| 6 | **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. |

7 **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8 **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9 **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10 **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11 **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12 **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**PROGRAM SPECIFIC OUTCOMES (PSOs)**

On successful completion of the Mechanical Engineering Degree programme, the Graduates shall exhibit the following:

1. Apply the knowledge gained in Mechanical Engineering for design and development and manufacture of engineering systems.
2. Apply the knowledge acquired to investigate research-oriented problems in mechanical engineering with due consideration for environmental and social impacts.
3. Use the engineering analysis and data management tools for effective management of multidisciplinary projects.

**PEO / PO MAPPING:**

| | POs | | | | | | | | | | | | PSOs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PEOs** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **1** | **2** | **3** |
| **I.** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **II.** | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | | 2 | 1 | 2 | 3 | 3 |
| **III.** | 3 | 1 | 2 | 1 | 2 | 2 | 1 | | 1 | 2 | | 3 | 3 | 2 | 2 |
| **IV.** | 2 | 2 | 2 | 2 | 2 | | 2 | | | | 1 | 2 | 2 | 3 | 3 |
| **V.** | 3 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 1 | 1 | 3 | 3 | 2 | 2 |

## Mapping of Course Outcome and Programme Outcome

| Year | Semester | Course name | PO | | | | | | | | | | | | PSO | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| I | I | Professional English- I | 1.6 | 2.2 | 1.8 | 2.2 | 1.5 | 3 | 3 | 3 | 1.6 | 3 | 3 | 3 | | | |
| | | Matrices and Calculus | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 3 | - | - | - |
| | | Engineering Physics | 3 | 3 | 1.6 | 1.2 | 1.8 | 1 | - | - | - | - | - | 1 | - | - | - |
| | | Engineering Chemistry | 2.8 | 1.3 | 1.6 | 1 | - | 1.5 | 1.8 | - | | - | - | 1.5 | - | - | - |
| | | Problem Solving and Python Programming | 2 | 3 | 3 | 3 | 2 | - | - | - | - | - | 2 | 2 | 3 | 3 | - |
| | | தமிழர் மரபு /Heritage of Tamils | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Problem Solving and Python Programming Laboratory | 2 | 3 | 3 | 3 | 2 | - | - | - | - | - | 2 | 2 | 3 | 3 | - |
| | | Physics and Chemistry Laboratory | 3 | 2.4 | 2.6 | 1 | 1 | - | - | - | - | - | - | - | - | - | - |
| | | | 2.6 | 1.3 | 1.6 | 1 | 1 | 1.4 | 1.8 | - | - | - | - | 1.3 | - | - | - |
| | | English Laboratory[$] | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | - | - | - |
| | II | Professional English- II | 3 | 3 | 3 | 3 | 2.75 | 3 | 3 | 3 | 2.2 | 3 | 3 | 3 | - | - | - |
| | | Statistics and Numerical Methods | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 3 | - | - | - |
| | | Materials Science | 3 | 2 | 1.6 | 1.4 | 1.8 | 1.2 | 1 | - | - | - | - | 1 | - | - | - |
| | | Basic Electrical and Electronics Engineering | 2 | 1.8 | 1 | | | | | 1 | | | | 2 | | | 1 |
| | | Engineering Graphics | 3 | 1 | 2 | - | 2 | - | - | - | - | 3 | - | 2 | 2 | 2 | - |
| | | தமிழரும் தத்துழில் நுட்பமும் / Tamils and Technology | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Engineering Practices Laboratory | 3 | 2 | - | | 1 | 1 | 1 | - | - | - | - | 2 | 2 | 1 | 1 |
| | | Basic Electrical and Electronics Engineering Laboratory | 3 | 3 | 2 | 1 | 1 | - | - | 1.5 | 2 | - | - | - | - | - | 1 |
| | | Communication Laboratory / Foreign Language [$] | 2.4 | 2.8 | 3 | 3 | 1.8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | - | - | - |
| II | III | Transforms and Partial Differential Equations | 3 | 3 | 2 | 2 | 1 | - | - | - | 1 | - | - | 1 | 3 | 3 | 1 |
| | | Engineering Mechanics | 3 | 2 | 3 | 1 | 2 | - | - | - | - | - | - | 2 | 3 | 1 | 2 |
| | | Engineering Thermodynamics | 3 | 3 | 2 | | | 1 | | | 1 | | 1 | 2 | 3 | 2 | 3 |
| | | Fluid Mechanics and Machinery | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | - | - | - | 2 | 2 | 2 | 2 |
| | | Engineering Materials and Metallurgy | 3 | 1 | 3 | 2 | 2 | 2 | 2 | 1 | - | - | - | 2 | 2 | 1 | 2 |
| | | Manufacturing Processes | 3 | | 2 | | 2 | 2 | 2 | 1 | 1 | - | - | 1 | 3 | 1 | 2 |
| | | Professional Development | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | IV | Theory of Machines | 3 | 2 | 2 | | 2 | - | - | 1 | | - | - | 1 | 3 | | 1 |
| | | Thermal Engineering | 3 | 2 | 1 | 1 | - | - | - | - | - | - | - | 1 | 2 | 1 | 1 |
| | | Hydraulics and Pneumatics | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - | 1 | 2 | 1 | 1 |
| | | Manufacturing Technology | 3 | 3 | 3 | 1 | 1 | 1 | 3 | - | - | 3 | - | - | 3 | 2 | 2 |
| | | Strength of Materials | 3 | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 2 | 3 | 1 | 3 | 2 | 1 | 1 |
| | | Environmental Sciences and Sustainability | 1 | 1 | 1 | - | - | 3 | - | 1 | - | 2 | 1 | 2 | 2 | 1 | - |
| III | V | Design of Machine Elements | 2 | 2 | 3 | - | - | - | - | 1 | 1 | - | - | 2 | 3 | 2 | 2 |
| | | Metrology and Measurements | 3 | 2 | 2 | 2 | - | - | - | - | 1 | - | - | 1 | 3 | 2 | 1 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **VI** | Heat and Mass Transfer | 3 | 3 | 3 | 2 | - | - | - | - | 1 | - | - | 1 | 3 | 2 | 1 |
| **IV** | **VII** | Mechatronics and IoT | 3 | 2 | 2 | 2 | 2. | | 1 | | 1 | - | - | 2 | 1 | 2 | 3 |
| | | Computer Integrated Manufacturing | 3 | 2 | 2 | 1 | 2 | - | - | - | 1 | - | - | 1 | 2 | 1 | 3 |
| | | Human Values and Ethics | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Industrial Management | - | - | 1 | 1 | - | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 1 | 1 | 1 |

**ANNA UNIVERSITY, CHENNAI**
**NON-AUTONOMOUS AFFILIATED COLLEGES**
**REGULATIONS 2021**
**CHOICE BASED CREDIT SYSTEM**
**B. E. MECHANICAL ENGINEERING**
**CURRICULUM AND SYLLABI FOR I TO VIII SEMESTERS**

**SEMESTER I**

| SL. NO. | COURSE CODE | COURSE TITLE | CATE - GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| 1. | IP3151 | Induction Programme | - | - | - | - | - | 0 |
| **THEORY** | | | | | | | | |
| 2. | HS3152 | Professional English - I | HSMC | 3 | 0 | 0 | 3 | 3 |
| 3. | MA3151 | Matrices and Calculus | BSC | 3 | 1 | 0 | 4 | 4 |
| 4. | PH3151 | Engineering Physics | BSC | 3 | 0 | 0 | 3 | 3 |
| 5. | CY3151 | Engineering Chemistry | BSC | 3 | 0 | 0 | 3 | 3 |
| 6. | GE3151 | Problem Solving and Python Programming | ESC | 3 | 0 | 0 | 3 | 3 |
| 7. | GE3152 | தமிழர் மரபு/Heritage of Tamils | HSMC | 1 | 0 | 0 | 1 | 1 |
| **PRACTICAL** | | | | | | | | |
| 7 | GE3171 | Problem Solving and Python Programming Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| 8 | BS3171 | Physics and Chemistry Laboratory | BSC | 0 | 0 | 4 | 4 | 2 |
| 9 | GE3172 | English Laboratory $ | EEC | 0 | 0 | 2 | 2 | 1 |
| | | | **TOTAL** | **16** | **1** | **10** | **27** | **22** |

**$ Skill Based Course**

**SEMESTER II**

| SL. NO. | COURSE CODE | COURSE TITLE | CATE - GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | HS3252 | Professional English - II | HSMC | 2 | 0 | 0 | 2 | 2 |
| 2. | MA3251 | Statistics and Numerical Methods | BSC | 3 | 1 | 0 | 4 | 4 |
| 3. | PH3251 | Materials Science | BSC | 3 | 0 | 0 | 3 | 3 |
| 4. | BE3251 | Basic Electrical and Electronics Engineering | ESC | 3 | 0 | 0 | 3 | 3 |
| 5. | GE3251 | Engineering Graphics | ESC | 2 | 0 | 4 | 6 | 4 |
| 6. | GE3252 | தமிழரும் தொழில் நுட்பமும் / Tamils and Technology | HSMC | 1 | 0 | 0 | 1 | 1 |
| 7. | | NCC Credit Course Level 1# | - | 2 | 0 | 0 | 2 | 2 |
| **PRACTICAL** | | | | | | | | |
| 8. | GE3271 | Engineering Practices Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| 9. | BE3271 | Basic Electrical and Electronics Engineering Laboratory | ESC | 0 | 0 | 4 | 4 | 2 |
| 10. | GE3272 | Communication Laboratory / Foreign Language $ | EEC | 0 | 0 | 4 | 4 | 2 |
| | | | **TOTAL** | **14** | **1** | **16** | **31** | **23** |

**# NCC Credit Course level 1 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.**

**$ Skill Based Course**

## SEMESTER III

| SL. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | MA3351 | Transforms and Partial Differential Equations | BSC | 3 | 1 | 0 | 4 | 4 |
| 2. | ME3351 | Engineering Mechanics | ESC | 3 | 0 | 0 | 3 | 3 |
| 3. | ME3391 | Engineering Thermodynamics | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | CE3391 | Fluid Mechanics and Machinery | ESC | 3 | 1 | 0 | 4 | 4 |
| 5. | ME3392 | Engineering Materials and Metallurgy | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | ME3393 | Manufacturing Processes | PCC | 3 | 0 | 0 | 3 | 3 |
| **PRACTICALS** | | | | | | | | |
| 7. | ME3381 | Computer Aided Machine Drawing | ESC | 0 | 0 | 4 | 4 | 2 |
| 8. | ME3382 | Manufacturing Technology Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 9. | GE3361 | Professional Development[$] | EEC | 0 | 0 | 2 | 2 | 1 |
| | | | **TOTAL** | **18** | **2** | **10** | **30** | **25** |

**$ Skill Based Course**

## SEMESTER IV

| SL. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | ME3491 | Theory of Machines | PCC | 3 | 0 | 0 | 3 | 3 |
| 2. | ME3451 | Thermal Engineering | PCC | 4 | 0 | 0 | 4 | 4 |
| 3. | ME3492 | Hydraulics and Pneumatics | PCC | 3 | 0 | 0 | 3 | 3 |
| 4. | ME3493 | Manufacturing Technology | PCC | 3 | 0 | 0 | 3 | 3 |
| 5. | CE3491 | Strength of Materials | PCC | 3 | 0 | 0 | 3 | 3 |
| 6. | GE3451 | Environmental Sciences and Sustainability | BSC | 2 | 0 | 0 | 2 | 2 |
| 7. | | NCC Credit Course Level 2[#] | | 3 | 0 | 0 | 3 | 3# |
| **PRACTICALS** | | | | | | | | |
| 8. | CE3481 | Strength of Materials and Fluid Machinery Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 9. | ME3461 | Thermal Engineering Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| | | | **TOTAL** | **18** | **0** | **8** | **26** | **22** |

**# NCC Credit Course level 2 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.**

**SEMESTER V**

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | ME3591 | Design of Machine Elements | PCC | 4 | 0 | 0 | 4 | 4 |
| 2. | ME3592 | Metrology and Measurements | PCC | 3 | 0 | 0 | 3 | 3 |
| 3. | CME396 | Process Planning and Cost Estimation | PEC | - | - | - | - | 3 |
| 4. | CME387 | Non-traditional Machining Processes | PEC | - | - | - | - | 3 |
| 5. | CME384 | Power Plant Engineering | PEC | - | - | - | - | 3 |
| 6. | MX3081 | Introduction to Women and Gender Studies | MC | 3 | 0 | 0 | 3 | Non-Credit Course |
| **PRACTICALS** | | | | | | | | |
| 7. | ME3511 | Summer Internship* | EEC | 0 | 0 | 0 | 0 | 1 |
| 8. | ME3581 | Metrology and Dynamics Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| | | | **TOTAL** | - | - | - | - | **19** |

***Two weeks Summer Internship carries one credit and it will be done during IV semester summer vacation and same will be evaluated in V semester.**

**[&] Mandatory Course-I is a Non-credit Course (Student shall select one course from the list given under MC- I)**

**SEMESTER VI**

| S. NO. | COURSE CODE | COURSE TITLE | CATE GORY | PERIODS PER WEEK | | | TOTAL CONTACT PERIODS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | | | | L | T | P | | |
| **THEORY** | | | | | | | | |
| 1. | ME3691 | Heat and Mass Transfer | PCC | 3 | 1 | 0 | 4 | 4 |
| 2. | CME380 | Automobile Engineering | PEC | - | - | - | - | 3 |
| 3. | CME386 | Gas Dynamics and Jet Propulsion | PEC | - | - | - | - | 3 |
| 4. | CME350 | Environment Sustainability and Impact Assessment | PEC | - | - | - | - | 3 |
| 5. | CME340 | CAD/CAM | PEC | - | - | - | - | 3 |
| 6. | OCS351 | Artificial Intelligent and Machine Learning Fundamentals | OEC | 3 | 0 | 0 | 3 | 3 |
| 7. | MX3089 | Industrial Safety | MC | 3 | 0 | 0 | 3 | Non-Credit Course |
| 8. | | NCC Credit Couse Level 3[#] | | 3 | 0 | 0 | 3 | 3# |
| **PRACTICALS** | | | | | | | | |
| 9. | ME3681 | CAD/CAM Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| 10. | ME3682 | Heat Transfer Laboratory | PCC | 0 | 0 | 4 | 4 | 2 |
| | | | **TOTAL** | - | - | - | - | **23** |

***Open Elective – I shall be chosen from the emerging technologies.**

**[&] Mandatory Course-II is a Non-credit Course (Student shall select one course from the list given under MC- II)**

**[#] NCC Credit Course level 3 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA**

## SEMESTER VII

| SL. NO. | COURSE CODE | COURSE TITLE | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|
| **THEORY** | | | | | | | | |
| 1. | ME8792 | Power Plant Engineering | PC | 3 | 3 | 0 | 0 | 3 |
| 2. | ME8793 | Process Planning and Cost Estimation | PC | 3 | 3 | 0 | 0 | 3 |
| 3. | ME8791 | Mechatronics | PC | 3 | 3 | 0 | 0 | 3 |
| 4. | OIE751 | Robotics | OE | 3 | 3 | 0 | 0 | 3 |
| 5. | ME8097 | Non Destructive Testing and Evaluation | PE | 3 | 3 | 0 | 0 | 3 |
| 6. | | Nan Muthlvan course | | 3 | 3 | 0 | 0 | 3 |
| **PRACTICAL** | | | | | | | | |
| 7. | ME8711 | Simulation and Analysis Laboratory | PC | 4 | 0 | 0 | 4 | 2 |
| 8. | ME8781 | Mechatronics Laboratory | PC | 4 | 0 | 0 | 4 | 2 |
| 9. | ME8712 | Technical Seminar | EEC | 2 | 0 | 0 | 2 | 1 |
| | | | **TOTAL** | **28** | **18** | **0** | **10** | **23** |

## SEMESTER VIII

| SL. NO. | COURSE CODE | COURSE TITLE | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---|---|---|---|---|---|---|---|---|
| **THEORY** | | | | | | | | |
| 1. | MG8591 | Principles of Management | HS | 3 | 3 | 0 | 0 | 3 |
| 2. | IE8693 | Production Planning and Control | PE | 3 | 3 | 0 | 0 | 3 |
| **PRACTICAL** | | | | | | | | |
| 3. | ME8811 | Project Work | EEC | 20 | 0 | 0 | 20 | 10 |
| | | | **TOTAL** | **29** | **9** | **0** | **20** | **16** |