

Mechanical Engineering

Technical Elective Categories

Courses in **bold** are AME courses

Aerospace	Manufacturing/Fabrication	Energy	Numerical methods
AME320 Aerodynamics AME321 Aircraft Performance AME323 Gas dynamics AME324C Aerospace Structures AME425 Aerospace propulsion AME426 Rocket propulsion AME427 Stab/Control Aero AME429 Interplanetary mission design AME457 Orbital Mechanics and space exploration SIE452 Space Systems Engineering SIE456 Fund. Of Guidance/ Aero. Systems	AME410 Additive manufacturing AME489A Fabrication Tech Micro- & Nanodevices MSE414 Solidification of Castings SIE383 Integrated manufacturing Systems SIE483 Computer Integrated Manufacturing	AME444 Applied thermodynamics AME430 Intermediate thermodynamics AME442A HVAC System Design AME442B Adv HVAC System Analysis & Design AME445 Renewable Energy AME446 Fuel cell design AME480 Intro to Nuclear Energy CE476 Dev Next Gen Li-ion Batteries MSE 424 Materials in Applied Solar Energy	AME431 Num Meth Fluid Mech. AME463 Finite Element Analysis w/ ANSYS MSE350 Numerical Methods in MSE (Python)
Management/Decision making/ Entrepreneurship	Biomedical Engineering	Environment	Earth sciences
AME 472 Reliability Engineering SIE367 Engineering Management II ENGR481 Innovation, Translation & Entrepreneurship SIE 482 Lean Engineering SIE 487 New Venture Dev & Industry Analysis SIE422 Engr Decision Making w/ Uncertainty SIE457 Project Management SIE464 Cost Estimation SIE474 Info Analytics & Decision Making in Engineering SIE484 Development of New Venture Plans	AME/BME 466 Biomechanical Eng AME 489B Bio Micro/Nano application AME483 Micro Biomechanics BE423 Biosystems Analysis and Design BME330 Biomedical Instrumentation BME416 Principles of Biomed Eng. BME417 Meas/ Data Analysis Biomed Eng BME480 Translational Biomedical Engineering OPTI/PHYS 440 Medical Physics	CE423 Hydrology BE452 Globalization, Sustainability & Innov CE476 Water Treatment System Design MNE/ENGR422 Engineering Sustainable Dev MSE450 Materials Selection for the Environ	GEN427 GeoMechanics GEN 402 Prob Stat Concepts Geolog Media GEN446 Earthquake engineering Geo/PHYS 419 Physics of the earth PHYS403 Physics of the Solar System
		Information	
The following tracks are provided as a suggestion in order to help students in selecting their electives courses. Completion of all courses in a specific track is <i>not</i> required			
Mechatronics/Electronics	Automotive		
AME 487 Guided Self- Studies Mechatronics ECE 320 Circuit theory ECE 351 Electronic Circuits	AME434 Internal Combustion Engines AME 451 Vehicle Dynamics AME 452 Planar multibody dynamics		
Materials and structures	Fluid Mechanics	Thermal sciences	Dynamics & Controls
AME460 Mechanical Vibrations AME462 Composite structures CE 333 Elemental Structural Analysis MSE 424 Physics Chem Ceramic Materials MSE 434 Electrical & Optical Prop of Mat MSE435 Corrosion/ Degradation MSE452 Material Aspects of Composite Materials MSE455 Physical Metal & Processing Alloys MSE460 Materials Science of Polymers	AME320 Aerodynamics AME323 Gas dynamics AME431 Numerical Methods in Fluid Mech. AME433 Prinples/ Applications of Fluid Mechanics	AME430 Intermediate thermodynamics AME434 Internal Combustion Engines AME442A HVAC System Design AME442B Adv HVAC System Analysis & Design AME444 Applied thermodynamics AME446 Fuel cell design AME480 Intro to nuclear energy MSE414 Solidification of Castings	AME457 Orbital Mechanics and space exploration AME 451 Vehicle Dynamics AME 452 Planar multibody dynamics AME427 Stability/Control Aerospace Vehicles BE/BME 447 Sensors and controls SIE456 Fund. Of Guidance/ Aero. Systems