

MECHANICAL ENGINEERING TECHNICAL ELECTIVES

Mechanical Engineering Majors are required to complete three (3) Technical Electives. At least one (1) of these electives must be a MAE course.

Note: not all courses are offered each year/quarter.

FLUIDS AND THERMAL ENGINEERING

MAE 104	Aerodynamics
MAE 110B	Thermodynamic Systems
MAE 113	Fundamentals of Propulsion
MAE 118A	Introduction to Energy Systems
MAE 118B	21 st Century Energy Technologies I
MAE 118C	21 st Century Energy Technologies II
MAE 135	Computational Mechanics
MAE 180A	Spacecraft Guidance
MAE 181	Space Mission Analysis and Design (formerly MAE 180B)
MAE 210A	Fluid Mechanics I
MAE 211	Introduction to Combustion
MAE 212	Introductory Compressible Flow
MAE 220A	Physics of Gases

ENVIRONMENTAL ENGINEERING

MAE 118A	Introduction to Energy Systems
MAE 124	Introduction to Environmental Engineering
MAE 125A	Flow and Transport in the Environment
MAE 125B	Fluid-Solid Interactions in Environmental Engineering
MAE 125C	Case Studies in Environmental Engineering
MAE 127	Statistical Methods for Environmental Sciences and Engineering
CHEM 149A,B	Environmental Chemistry

DESIGN

MAE 131B	Solid Mechanics II
MAE 131C	Solid Mechanics III
MAE 133	Finite Element Methods in Mechanical and Aerospace Engineering
MAE 135	Computational Mechanics
MAE 143C	Digital Control Systems
MAE 152	Computer Graphics for Engineers and Scientists
MAE 232A/B	Finite Element Methods in Solid Mechanics I & II
MAE 291	Design and Mechanics Problems in Computer Technology
MAE 292	Computer Aided Analysis and Design
MAE 293	Advanced Computer Graphics for Engineers and Scientists

DYNAMIC SYSTEMS AND CONTROL

MAE 143C	Digital Control Systems
MAE 142	Dynamics and Control of Aerospace Vehicles

Department of Mechanical and Aerospace Engineering

Updated: Spring 2008

MAE 149	Sensor Networks
MAE 180A	Spacecraft Guidance
MAE 181	Space Mission Analysis and Design (formerly MAE 180B)
ECE 172A	Robotics and Machine Intelligence
ECE 174	Optimization
ECE 186	Robotic Vision
MAE 280A	Linear Systems Theory
MAE 281A	Nonlinear Systems
MAE 283A	Parametric Identification: Theory and Methods

MECHANICS AND MATERIALS ENGINEERING

MAE 131B	Fundamentals of Solid Mechanics II
MAE 131C	Solid Mechanics III
MAE 133	Finite Element Methods in Mechanical and Aerospace Engineering
MAE 166	Nanomaterials
MAE 231A	Foundations of Solid Mechanics

STRUCTURAL ENGINEERING

SE 103	Conceptual Structural Design
SE 120	Engineering Graphics and Computer Aided Structural Design
SE 130A, B	Structural Analysis
SE 142	Design of Composite Structures
SE 144	Aerospace Structural Analysis
SE 181	Geotechnical Engineering

OTHER

COGS 152	Cognitive Foundations of Mathematics
ECE 120	Solar System Physics
ECE 173	Theory and Applications of Neural Networks and Fuzzy Logic
PSYC 161	Engineering Psychology
MATH 102	Applied Linear Algebra
MATH 109	Mathematical Reasoning
MATH 120A	Elements of Complex Analysis
MATH 172	Numerical Partial Differential Equations
MATH 183	Statistical Methods
MATH 187	Introduction to Cryptography

NOTE: Only students with an overall GPA of 3.50 and an A- or better in all prerequisite courses are encouraged to take graduate-level classes to fulfill their technical elective requirement. Students must obtain both the teaching faculty's consent and the consent of the MAE Student Affairs Office to take graduate level courses.

Any questions, please contact an MAE Undergraduate Adviser, Gerri Johnson, at gljohnson@ucsd.edu or Katie Kirchberg at kkirchberg@ucsd.edu.