Department of Mechanical and Aerospace Engineering
Updated: Reviewed and Updated May 2025

AEROSPACE ENGINEERING
TECHNICAL ELECTIVES

(*This is a general TE list- refer to the mae.ucsd.edu website for the specific list of TEs for a specialization*)

Aerospace Engineering majors following the Fall 2023 catalog must complete five TE's.
Aerospace Engineering majors following the Fall 2019 catalog must complete two TE's.
Aerospace Engineering majors following a pre-Fall 2019 catalog must complete one TE

-Not all courses are offered each year/quarter.
-All prerequisites are enforced.

At least one of your electives must be an MAE course.

The following classes that are not already required for your major are approved as TEs:

MAE 101C	Heat Transfer (approved TE for FA23 plan only)
MAE 101D	Intermediate Heat Transfer
MAE 108	Probability and Statistical Methods for Engineering (Credit **not** offered for MAE 108 if ECE 109, ECON 120A, MATH 180A, MATH 183, MATH 186, or SE 125 were taken)
MAE 110	Thermodynamic Systems *(formerly 110B)*
MAE 114	Space Propulsion
MAE 118	Intro to Energy & Environment
MAE 119	Intro to Renewable Energy: Solar & Wind
MAE 120	Intro to Nuclear Energy
MAE 122	Flow & Transport in the Environment
MAE 130	Advanced Vibrations
MAE 131B	Solid Mechanics II
MAE 133	Finite Element Methods
MAE 144	Embedded Control and Robotics
MAE 145	Robotic Planning and Estimation
MAE 146	Intro to ML Algorithms
MAE 148	Intro to Autonomous Vehicles
MAE 150	Computational Methods for Design
MAE 153	Design of Machine Components
MAE 154	Product Design & Entrepreneurship
MAE 180	Orbital Mechanics
MAE 181	Space Mission Analysis and Design
MAE 182	Spacecraft Guidance and Navigation
MAE 184	Flight Simulation Techniques
MAE 185	Computational Fluid Mechanics
MAE 190	Topics: Marine Robotics (*Note: Must be this specific course topic)*
MAE 190	Topics: Radiation and Light Sources *(Note: Must be this specific course topic)*
MAE 199	Independent Study (*2 quarters of MAE 199 can be used for 1 TE under certain circumstances. See our website, mae.ucsd.edu, for details.)*

SE 120 Engineering Graphics and Computer-Aided Structural Design

SE 131 Finite Element Analysis
SE 142 Design of Composite Structures
SE 143A Aerospace Structural Design I
SE 143B Aerospace Structural Design II

Note: SE 143A/B are the SE senior design capstone courses so students will be expected to complete both A&B in consecutive quarters (credit will be given for 2 TEs)

SE 160B Aerospace Structural Mechanics II (approved TE for FA23 plan only)

SE 163 Nondestructive Evaluation
SE 171 Aerospace Structures Repair
ECE 120 Solar System Physics
ECE 172A Introduction to Intelligent Systems
MATH 102 Applied Linear Algebra
MATH 120A Elements of Complex Analysis
MATH 175 Numerical Methods for Partial Differential Equations
MATH 187A Intro to Cryptography

MAE 160 is not an approved TE due to overlapping material in SE 160A/B.

GRADUATE COURSES*

MAE 200 Controls
MAE 201 Mechanics of Fluids
MAE 202 Thermal Processes
MAE 203 Solid Mechanics and Materials
MAE 204 Robotics
MAE 206 Energy Systems
MAE 208 Mathematics for Engineers
MAE 211 Intro to Combustion
MAE 212 Introductory Compressible Flow
MAE 222 Human Space Exploration
MAE 240 Space Flight Mechanics
SE 201A Advanced Structural Analysis
SE 202 Structural Stability
SE 203 Structural Dynamics

Global TIES: One quarter of ENG 100D and two consecutive quarters of ENG 100L can be used for one TE. (*only for students following the FA19, FA23 catalog*)

* Enrollment in graduate courses requires approval by the instructor and course dept via an EASy request. *All TEs must be taken for a letter grade. No P/NP grades allowed except in MAE 199.* For information about receiving TE credit for courses not on this list, please contact a MAE undergraduate advisor through the VAC.