

AEROSPACE ENGINEERING

Four Year Plan, FA23 Catalog

Aerospace engineering is a four-year curriculum that begins with fundamental engineering courses in mechanics, thermodynamics, materials, solid mechanics, fluid mechanics, and heat transfer. Graduates of this program normally enter the aerospace industry to develop aircraft and spacecraft, but also find employment in other areas that use similar technologies, such as mechanical and energy-related fields. Examples include automobile, naval, and sporting equipment manufacturing. This program received ABET accreditation in 2002.

Recommended Sequence of Required Courses: Updated November 2024

Reviewed and Updated May 2025

<u>FALL QUARTER</u>	<u>WINTER QUARTER</u>	<u>SPRING QUARTER</u>
Year 1		
MATH-020A. Calculus for Science & Eng	MATH-020B. Calculus for Science & Eng	MATH-020C. Calculus & Analytic Geometry for Science & Eng
MAE-002. Intro to Aerospace Eng	PHYS-002A. Physics—Mechanics	PHYS-002B. Physics-Electricity & Magnetism
CHEM-006A. General Chemistry I	GE	GE
GE (<i>General Elective</i>)	GE	GE
Year 2		
MATH-018: Linear Algebra	MATH-020D. Intro to Differential Equations	MATH-020E. Vector Calculus
PHYS-002C. Physics—Fluids, Waves, Thermodynamics, & Optics & PHYS-002CL. Physics Lab - Electricity/Magnet	MAE-008. MATLAB Programming for Eng Analysis	MAE-030B. Dynamics & Vibrations
MAE-021* Aerospace Materials Sci	MAE-030A. Statics & Intro to Dynamics	MAE-131A. Solid Mechanics I
GE	GE	TE (<i>Technical Elective</i>)
Year 3		
MAE-011. Thermodynamics	MAE-101B* Advanced Fluid Mechanics	MAE-104* Aerodynamics
MAE-101A* Intro Fluid Mechanics	MAE-143A* Signals & Systems	MAE-143B* Linear Control
MAE-105 Intro to Mathematical Physics	TE	MAE-170. Experimental Techniques
MAE-107. Computational Methods in Eng	SE-160A* Aerospace Structural Mechanics I	GE
Year 4		
MAE-113* Fundamentals of Propulsion	MAE-155A* Aerospace Design I	MAE-155B* Aerospace Design II
MAE-142* Dynamics & Control of Aerospace Vehicles	MAE-175A* Aerospace Eng Lab I	GE
GE	GE	GE
TE	TE	TE

Courses offered in the recommended quarters will not overlap in day/times, midterms, finals, etc. with the other courses. However, if you move courses outside their recommended quarter, we cannot guarantee that they will not overlap with other courses. Deviation from this recommended academic plan could delay graduation. Please avoid moving courses

- All courses required for the major must be taken for a letter grade. The Pass/No Pass grading option is not allowed.
- Students may graduate with only one D in a course required for the major.
- Twelve GE courses are listed here; individual college requirements may be higher or lower. Please contact your college advisor for more information.
- The Technical Elective (TE) course must be an upper-division or graduate course in the engineering sciences, natural sciences or mathematics and must be selected with prior approval of the Department. Refer to the list of pre-approved TEs available at www.mae.ucsd.edu.

*** ASTERISK DENOTES A COURSE THAT MUST BE TAKEN AT LEAST BY THAT QUARTER TO GRADUATE IN FOUR YEARS.**

Aerospace Engineering Prerequisite Guide - FA23 Catalog

Subject	Course #	Title	Prerequisites	Course is prerequisite for MAE ____:	Quarter/s Usually Offered
MAE	002	Intro to Aerospace Eng.		155A	F
MAE	008	Matlab Programming for Eng. Analysis	Math-020A, Math-020B	107	F, W, S
MAE	011	Thermodynamics	Phys-002C, CHEM-006A	101B, 113	F, W
MAE	021	Aerospace Materials Science	Phys-002A, Chem-006A, Math-020B	SE-160A, MAE-155A	F
MAE	030A	Statics & Intro to Dynamics	Math-020C, Phys-002A	030B, 131A	F, W
MAE	030B	Dynamics & Vibrations	MAE-030A	MAE-155A, SE-160A	S
MAE	101A	Intro Fluid Mechanics	Phys-002A, Math-020D, Math-020E	101B, 104, 113	F, W
MAE	101B	Advanced Fluid Mechanics	MAE-011, MAE-101A	104, 113	W, S
MAE	104	Aerodynamics	MAE-101A, MAE-101B	142, 155A	S
MAE	105	Intro to Mathematical Physics	Phys-002A, Phys-002B, Math-020D		F, S
MAE	107	Computational Methods in Engineering	MAE-008, Math-018		F, S
MAE	113	Fundamentals of Propulsion	MAE-011, MAE-101A, MAE-101B	155B	F
MAE	131A	Solid Mechanics I	Math-020D, MAE-030A	SE-160A	F, S
MAE	142	Dynamics and Control of Aerospace Vehicles	MAE-104, MAE-143B	155B	F
MAE	143A	Signals and Systems	Math-020D, Math-020E, Math-018	143B	W
MAE	143B	Linear Control	MAE-143A	142, 175A	S
MAE	155A	Aerospace Eng. Design I	MAE-002, MAE-021, MAE-030B, MAE-104, SE-160A	155B	W
MAE	155B	Aerospace Eng. Design II	MAE-113, MAE-142, MAE-155A, MAE-170		S
MAE	170	Experimental Techniques	PHYS-002C & PHYS-002CL (or MAE-040/140)	155B, 175A	F, S
MAE	175A	Aerospace Eng. Lab I	MAE-143B, MAE-170		W
SE	160A	Aerospace Structural Mechanics I	MAE-021, MAE-030B, MAE-131A	155A	W

Reviewed and Updated May 2025

All courses must be taken for a letter grade (no P/NP) For more information, please contact an MAE undergraduate advisor: mae-ugradadm@ucsd.edu