AEROSPACE ENGINEERING MINOR (B.ENG.) (21 CREDITS)

Offered by: Institute for Aerospace Eng. (Faculty of Engineering)
Degree: Bachelor of Engineering
Program credit weight: 21

Program Description

The B.Eng.; Minor in Aerospace Engineering provides a foundation in the field of aircraft and spacecraft design, with further specializations in aerodynamics and propulsion, structural analysis, materials and processes, spacecraft engineering and systems, and avionics by choosing an appropriate stream.
A maximum of 9 credits of double-counting is allowed with the Major.

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Required Courses (9 credits)

Expand allContract all

Course	Title	Credits
AERO 401	Introduction to Aerospace Engineering.	3
AERO 410	Aerospace Design and Certification Process.	3
AERO 420	Introduction to Aerospace Design.	3

Complementary Courses (12 credits)

Aerodynamics and Propulsion Stream

Expand allContract all

Course	Title	Credits
MECH 447	Combustion.	3
MECH 516	Computational Gasdynamics.	3
MECH 532	Aircraft Performance, Stability and Control.	3
MECH 533	Subsonic Aerodynamics.	3
MECH 535	Turbomachinery and Propulsion.	3
MECH 539	Computational Aerodynamics.	3
MECH 562	Advanced Fluid Mechanics.	3
MECH 566	Fluid-Structure Interactions.	3
MECH 579	Multidisciplinary Design Optimization.	3

Aircraft Structures Stream

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Course	Title	Credits
MECH 530	Mechanics of Composite Materials.	3
MECH 536	Aerospace Structures.	3
MECH 543	Design with Composite Materials.	3
MECH 544	Processing of Composite Materials.	3
MECH 560	Eco-design and Product Life Cycle Assessment .	3
MECH 567	Structural Dynamics of Turbomachines.	3
MIME 560	Joining Processes.	3
MIME 565	Aerospace Metallic-Materials and Manufacturing Processes.	3

Spacecraft and Systems Stream

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Course	Title	Credits
GEOG 308	Remote Sensing for Earth Observation.	3
MECH 513	Control Systems.	3
MECH 536	Aerospace Structures.	3
MECH 542	Spacecraft Dynamics.	3
MECH 550	Vibrations of Continuous Systems.	3
MECH 559	Engineering Systems Optimization.	3
MIME 565	Aerospace Metallic-Materials and Manufacturing Processes.	3
PHYS 320	Introductory Astrophysics.	3

Material and Processes Stream

Expand allContract all

Course	Title	Credits
CHEE 515	Interface Design: Biomimetic Approach.[1]	3
CHEE 541	Electrochemical Engineering.	3
CHEE 543	Plasma Engineering.	3
MECH 544	Processing of Composite Materials.	3
MIME 512	Corrosion and Degradation of Materials.	3
MIME 515	(Bio)material Surface Analysis and Modification.[1]	3
MIME 559	Aluminum Physical Metallurgy.	3
MIME 560	Joining Processes.	3
MIME 563	Hot Deformation of Metals.	3
MIME 565	Aerospace Metallic-Materials and Manufacturing Processes.	3
MIME 571	Surface Engineering.	3
MIME 580	Additive Manufacturing Using Metallic and Ceramic Materials.	3

[1] Students may choose only one of CHEE 515 Interface Design: Biomimetic Approach. or MIME 515 (Bio)material Surface Analysis and Modification..

Avionics Stream

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Course	Title	Credits
ECSE 403	Control.	4
ECSE 408	Communication Systems.	4
ECSE 412	Discrete Time Signal Processing.	3
ECSE 420	Parallel Computing.	3
ECSE 421	Embedded Systems.	3
ECSE 422	Fault Tolerant Computing.	3

ECSE 425	Computer Architecture.	3
ECSE 427	Operating Systems.	3
ECSE 429	Software Validation.	3
ECSE 444	Microprocessors.	4
ECSE 465	Power Electronic Systems.	3
ECSE 501	Linear Systems.	3
ECSE 507	Optimization and Optimal Control.	3
ECSE 508	Multi-Agent Systems.	3
ECSE 512	Digital Signal Processing 1.	3
ECSE 516	Nonlinear and Hybrid Control Systems.	3
ECSE 525	Satellite Navigation Systems .	4
ECSE 541	Design of Multiprocessor Systems-on-Chip.	3
ECSE 593	Antennas and Propagation.	3