AEROSPACE ENGINEERING (COURSE 16)

Department of Aeronautics and Astronautics (*https://catalog.mit.edu/schools/engineering/aeronautics-astronautics/#undergraduatetext*)

Bachelor of Science in Aerospace Engineering

General Institute Requirements (GIRs)

The General Institute Requirements include a Communication Requirement that is integrated into both the HASS Requirement and the requirements of each major; see details below.

Summary of Subject Requirements	Subjects
Science Requirement	6
Humanities, Arts, and Social Sciences (HASS) Requirement; at least two of these subjects must be designated as communication-intensive (CI-H) to fulfill the Communication Requirement.	8
Restricted Electives in Science and Technology (REST) Requirement [can be satisfied from among 6.100A/16.C20[J] or 6.100B, 6.3700, 16.001, and 18.03 in the Departmental Program]	2
Laboratory Requirement (12 units) [can be satisfied by 16.405[J], 16.821, or 16.831[J] in the Departmental Program]	1
Total GIR Subjects Required for SB Degree	**17**

Physical Education Requirement
Swimming requirement, plus four physical education courses for eight points.

Departmental Program

Choose at least two subjects in the major that are designated as communication-intensive (CI-M) to fulfill the Communication Requirement.

Departmental Core		Units
6.100A	Introduction to Computer Science Programming in Python	6
16.C20[J]	Introduction to Computational Science and Engineering	6
or 6.100B	Introduction to Computational Thinking and Data Science	
16.001	Unified Engineering: Materials and Structures	12
16.002	Unified Engineering: Signals and Systems	12
16.003	Unified Engineering: Fluid Dynamics	12
16.004	Unified Engineering: Thermodynamics and Propulsion	12
16.06	Principles of Automatic Control	12
16.07	Dynamics	12
16.09	Statistics and Probability	12
or 6.3700	Introduction to Probability	
18.03	Differential Equations [1]	12
Professional Area Subjects		
Select four subjects from at least three professional areas. [2]		48
Fluid Mechanics		
16.100	Aerodynamics	
Materials and Structures		
16.20	Structural Mechanics	
Propulsion		
16.50	Aerospace Propulsion	
Computational Tools		
16.90	Computational Modeling and Data Analysis in Aerospace Engineering	
Estimation and Control		
16.30	Feedback Control Systems	
Computer Systems		
6.2050	Digital Systems Laboratory	
16.35	Real-Time Systems and Software	
Communications Systems		
16.36	Communication Systems and Networks	
Humans and Automation		
16.400	Human Systems Engineering	
16.410[J]	Principles of Autonomy and Decision Making	
Laboratory and Capstone Subjects		
Select one of the following:		12
16.82	Flight Vehicle Engineering (CI-M)	
16.83[J]	Space Systems Engineering (CI-M)	
Select one of the following:		12-18
16.405[J]	Robotics: Science and Systems (CI-M)	
Flight Vehicle Development:		
16.821	Flight Vehicle Development (CI-M)	
Space Systems Development:		
16.831[J]	Space Systems Development (CI-M)	
Units in Major		**180-186**
Unrestricted Electives		**48**
Units in Major That Also Satisfy the GIRs		(36)
Total Units Beyond the GIRs Required for SB Degree		**192-198**

The units for any subject that counts as one of the 17 GIR subjects cannot also be counted as units required beyond the GIRs.

[1] *Combination of 6.100A Introduction to Computer Science Programming in Python and 16.C20 Introduction to Computational Science and Engineering or 6.100B Introduction to Computational Thinking and Data Science counts as a REST.*

[2] *18.032 Differential Equations is also an acceptable option.*

[3] *For students who wish to complete an option in aerospace information technology, 36 of the 48 units must come from subjects other than 16.100, 16.20, 16.50, or 16.90.*