

M.I.T.
Department of Aeronautics and Astronautics

**Sample Academic Pathways for Course 16 Students Entering the Major in
the Spring Term of the Sophomore Year**

Course 16 majors are required to complete 192-198 units beyond the GIRS. The following roadmap shows the paths typically taken by students who enter Course 16 in the Spring term of the sophomore year and later enroll in the 16.62x and 16.82 or 16.83 lab/capstone sequences. Students who wish to complete an option in aerospace information technology will follow the same paths, but they must take at least three (36 units) of the four (48 units) required professional subjects in subjects other than 16.100, 16.20, 16.50, or 16.90. Several other options are available in the Course 16 lab/capstone and professional area subjects. Please check the MIT Course Catalogue (<http://student.mit.edu/catalog/index.cgi>).

This roadmap assumes that all non-HASS GIRs are taken in the first year. That does not need to be the case; for example, the Biology GIR can be delayed to the junior or senior year and the Chemistry GIR - co-requisite for Unified Engineering Thermo - can be taken in the sophomore year. Also note that Physics II GIR (co-requisite for Unified Signals) and 18.03 Differential Equations (co-requisite for Unified Structures and Unified Signals) can be taken in the sophomore year. However, a student must complete Calculus I-II and Physics I before they can enroll in Unified Structures and Unified Signals.

Students must discuss their individual course plan with their academic advisor and consult the current *MIT Course Catalogue* (<http://student.mit.edu/catalog/index.cgi>) for up-to-date information on degree requirements, course prerequisites, and the terms in which courses are offered. Also check the *Course 16 Calendar for Experimental and Capstone Subjects*.

Program 16 - Aerospace Engineering

<u>Subject & Units</u>	<u>Institute Requirement</u>	<u>Units Beyond GIRS</u>
1. First Year		
<u>Fall Term</u>		
3.091 Intro to Solid-State Chemistry (12)	CHEM	
8.01-Physics I (12)	PHYS	
18.01-Calculus I (12)	CALC	
HASS (12)	HASS	
Term Units = 48		
<u>Spring Term</u>		
8.02-Physics II (12)	PHYS	
18.02-Calculus II (12)	CALC	
HASS (12)	HASS	
HASS (12), CI-H	HASS	
Term Units = 48		

2. Sophomore Year

Fall Term

6.0001 Intro to Computer Programming in Python (6) and 6.0002 Intro to Computational Thinking & Data Sc. (6) or 6.00 Intro to Computer Programming (12)		12
7.012-Introductory Biology (12)	BIO	
18.03 Differential Equations (12)	REST	
HASS-D (12)	HASS	
Term Units = 48		

Independent Activities Period

A six-unit elective, i.e. UROP-for-credit		6
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Spring Term

16.09 Statistics & Probability (12)		12
or 6.041A-6.041B Intro to Probability I-II (12)		12
Elective (12)		12
HASS (12)	HASS	
HASS-D (12), CI-H	HASS-D	
Term Units = 48		

3. Junior Year

Fall Term

16.001-Unified Engineering Materials & Structures (12), REST		
16.002-Unified Engineering Signals & Sys (12)		12
16.400 Human Sys Engineering (12)		12
HASS-D (12)	HASS-D	
Term Units = 48		

Independent Activities Period

A six-unit elective, i.e. UROP-for-credit		6
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Spring Term

16.003-Unified Engineering Fluid Dynamics (12)		12
16.004-Unified Engineering Thermodynamics (12)		12
16.621 Experimental Projects I (6)		6
Elective (6)		6
HASS (12)	HASS	
Term Units = 48		

4. Senior Year

Fall Term

16.06-Principles of Automatic Control (12)	12
16.07-Dynamics (12)	12
16.100 Aerodynamics (12)	12
16.622 Experimental Projects II (12)	LAB

Term Units = 48

Independent Activities Period

A six-unit elective, i.e. UROP-for-credit	6
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Spring Term

16.20 Structural Mechanics (12)	12
16.82 Flight Vehicle Engineering (12), CIM or	
16.83J Space Systems Engineering (12), CI-M	12
16.90-Computational Modeling & Data Analysis (12)	12
Elective (12)	12

TOTAL UNITS BEYOND GIRS 198

Notes:

1. The two Institute REST requirements (24 units) can be satisfied from among 6.0001-6.0002 or 6.00, 18.03 or 18.034, and 16.001. The Institute Lab requirement (12 units) for students choosing this roadmap is fulfilled through 16.622. Units from departmental subjects that fulfill the REST and Lab requirements do not count in units beyond GIRS. Students must fill the 36-unit gap in their departmental program by taking additional electives.
2. A student interested in taking capstone 16.82 or 16.83 must complete a minimum of two professional area subjects before enrolling in either capstone.
3. Students take a minimum of four professional subjects (48 units) in three different areas. As mentioned earlier, students interested in doing the option in aerospace information technology also take 48 units, 36 of which must come from subjects other than 16.100, 16.20, 16.50, 16.90. This IT option is not reflected on a student's transcript or diploma.

