- Sample academic pathways for students entering Course 16-ENG in **spring of sophomore** year (pdf)

M.I.T.
Department of Aeronautics and Astronautics

Sample Academic Pathways for Students Entering AeroAstro
Spring Term of Sophomore Year and Selecting the 16-ENG Program

Course 16-ENG majors are required to complete 192-198 units beyond the General Institute Requirements (GIRS). The following roadmap shows the paths typically taken by a student who enters the program in the Fall term of their sophomore year.

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 Thermodynamics - can be taken in the sophomore year. Also note that Physics II GIR (co-requisite for Unified Signals and Systems) and 18.03 Differential Equations (co-requisite for Unified Materials and Structures and Unified Signals and Systems) can be taken in the sophomore year. However, a student must complete Calculus I-II and Physics I before they can enroll in Unified Materials and Structures and Unified Signals and Systems.

Students must discuss their individual course plan with their academic advisor as well as their 16-ENG concentration advisor. Each concentration has a list of prescribed subjects, which can be found in the document *16-ENG Program Description and Degree Requirements*. Also 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. Please also refer to the *Course 16 Calendar for Laboratory and Capstone Subjects* (insert link to Oli's latest version FA25-SP29).

Program: 16 - Aerospace Engineering

Subject & Units	Institute Requirement	Units Beyond GIRS
1. First Year		
Fall Term		
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		
Independent Activities Period		
A six-unit elective, e.g. UROP-for-credit		6
Spring Term		
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**

<u>Fall Term</u>		
7.012-Introductory Biology (12)	BIO	
6.1000 Intro to Programming & Computer Sc (12) REST	REST	
or		
6.100A Intro to Computer Programming in Python (6) ½ REST		
and		
6.100B Intro to Computational Thinking & Data Sc. (6) ½ REST		
or		
16.C20J Intro to Computational Science & Engin (6) ½ REST		
Elective (12)		12
HASS-A (12)	HASS	
Term Units = 48		
<u>Independent Activities Period</u>		
A six-unit elective, e.g. a UROP-for-credit		6
<u>Spring Term</u>		
Concentration Subject (12)		12
Concentration Subject (12)		12
HASS (12)	HASS	
HASS-H (12), CI-H	HASS	
Term Units = 48		

3. Junior Year

<u>Fall Term</u>		
16.001-Unified Engineering Materials & Structures (12) REST		12
16.002-Unified Engineering Signals & Sys (12)		12
18.03 Differential Equations (12)	REST	
HASS-S (12)	HASS	
Term Units = 48		
<u>Independent Activities Period</u>		
A six-unit elective, e.g. a UROP-for-credit		6
<u>Spring Term</u>		
16.003-Unified Engineering Fluid Dynamics (12)		12
16.004-Unified Engineering Thermodynamics & Propulsion (12)		12
16.06 Prin of Automatic Control (12)		12
HASS (12)	HASS	
Term Units = 48		

4. Senior Year

Fall Term		
Concentration Subject 12)		12
Concentration Subject (12)		12
Design Capstone (12), CIM		12
HASS-H (12)		
Term Units = 48		
Independent Activities Period		
A six-unit elective, e.g. a UROP-for-credit		6
Spring Term		
Concentration Subject (12)		12
Concentration Subject (12)		12
Laboratory (12), CIM	LAB	
Elective (12)		12
Term Units = 48		
TOTAL UNITS BEYOND GIRS (192)		**(192)**

Notes:

1. For the 16-ENG program, students take either 16.06 Principles of Automatic Control or 16.07 Dynamics. Probability & Stats (16.09 or 6.3700) is not required for the 16-ENG program; however, students have the option of taking 16.09 or 6.3700 to satisfy the 16-ENG math/science requirement.
2. The two Institute REST requirements (24 units) can be satisfied from among 6.100A-6.100B or 6.100A-16.C20J; 6.1000; 6.3700; 16.001; and 18.03. The Institute lab requirement can be fulfilled through 16.405J, 16.811, 16.821 or 16.831J. Either of these subjects plus one of the design capstones (16.82, 16.83J, 16.85) also satisfy the CIM requirement. Units from departmental subjects that fulfill the REST and Institute Lab requirements do not count in units beyond GIRS. Students must fill the 36-unit gap in their departmental program by taking additional electives to reach the 192 minimum unit requirement.
3. A student interested in taking capstone 16.82 or 16.83 must complete a minimum of two concentration subjects before enrolling in either of these subjects.

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