

## Sample Academic Pathways for Students Entering Course 16-ENG Spring Term, 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. Please check the *MIT Course Catalogue* for additional lab/capstone options as well as the *Course 16 Calendar for Laboratory and Capstone Subjects*.

This roadmap assumes that most 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 can be taken in the spring of the sophomore year concurrently with Unified Thermodynamics. The Math and Physics GIRs are prerequisites for Unified Engineering, and must therefore be taken before starting the Course 16 program. A sophomore who has completed Calculus I-II, Physics I-II and 18.03 or 18.034 would be eligible to take Unified Fluid Dynamics and Unified Thermodynamics in their Spring term.

Students must discuss their individual course plan with their academic advisor as well as their 16-ENG concentration advisor. Each concentration has its list of prescribed subjects, which can be found in the document *16-ENG Program Description and Degree*. 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.

### Course 16-ENG — S.B. in Engineering

<u>Subject &amp; Units</u>	<u>Institute Requirement</u>	<u>Units Beyond GIRS</u>
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#### 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	
<b>Term Units = 48</b>		

##### Spring Term

8.02-Physics II (12)	PHYS	
18.02-Calculus II (12)	CALC	
Elective (12)		12
HASS (12), CI-H	HASS	
<b>Term Units = 48</b>		

#### 2. Sophomore Year

##### Fall Term

6.0001 Intro to Computer Programming in Python (6) ½		
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REST and		
6.0002 Intro to Computational Thinking & Data Sc. (6)		12
7.012-Introductory Biology (12)	BIO	
18.03 Differential Equations (12)	REST	
HASS-A (12)	HASS	
<b>Term Units = 48</b>		

<u>Independent Activities Period</u>		
A six-unit elective, i.e. UROP-for-credit		6

<u>Spring Term</u>		
Concentration Subject (12)		12
Concentration Subject (12)		12
Elective (12)		12
HASS-H (12), CI-H	HASS-D	
<b>Term Units = 48</b>		

### 3. Junior Year

<u>Fall Term</u>		
16.001-Unified Engineering Materials & Structures (12), REST		
16.002-Unified Engineering Signals & Sys (12)		12
Concentration Subject (12)		12
HASS-S (12)	HASS-D	
<b>Term Units = 48</b>		

<u>Independent Activities Period</u>		
A six-unit elective, i.e. UROP-for-credit		6

<u>Spring Term</u>		
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	
<b>Term Units = 48</b>		

### 4. Senior Year

<u>Fall Term</u>		
16.06-Principles of Automatic Control (12) or 16.07 Dynamics (12)		12
16.622 Experimental Projects II (12) CIM/Lab	LAB	
Concentration Subject (12)		12
HASS (12)	HASS	
<b>Term Units = 48</b>		

<u>Independent Activities Period</u>		
A six-unit elective, i.e. UROP-for-credit		6

<u>Spring Term</u>		
16.82 Flight Vehicle Engineering (12), CIM		



or	
16.83J Space Systems Engineering (12), CI-M Concentration Subject (12)	12
Concentration Subject (12) HASS (12)	12
<b>Term Units = 48</b>	<b>HASS</b>
<b>TOTAL UNITS BEYOND GIRS</b>	<b>198</b>

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Notes:

- a. The two Institute REST requirements (24 units) can be satisfied from among 6.0001-6.0002; 16.001; and 18.03. 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.
- b. 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.



