

## Sample Academic Pathways for Students Entering Course 16-ENG Fall Term of the Junior Year

Course 16-ENG 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 Fall term of the junior year and later enroll in the 16.405J 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 concurrently with 16.004 Unified Thermodynamics. Calculus I-II and Physics I are prerequisites for Unified Engineering, and must therefore be taken before starting the Course 16 program.

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

### Course 16-ENG — S.B. in 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**

##### 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

##### Fall Term

6.0001 Intro to Computer Programming in Python (6)		
--	--	--

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

Independent Activities Period

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

Spring Term

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

Fall Term

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

Independent Activities Period

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

Spring Term

16.003-Unified Engineering Fluid Dynamics (12)		12
16.004-Unified Engineering Thermodynamics (12)		12
Concentration Subject (12)		12
HASS (12)	HASS	
<b>Term Units = 48</b>		

### 4. Senior Year

Fall Term

16.06-Principles of Automatic Control (12) or 16.07 Dynamics (12)		12
16.82 Flight Vehicle Engin or 16.83 Space Sys Engin (12), CI-M		12
Concentration Subject (12)		12
Elective (12)		12
<b>Term Units = 48</b>		

Spring Term

16.405J Robotics: Science & Sys (12) CIM/Lab	LAB	
Concentration Subject (12)		12

Elective (12)		12
HASS (12)	HASS	
<b>Term Units = 48</b>		
<b>TOTAL UNITS BEYOND GIRS</b>		<b>192</b>

---

**Notes:**

1. 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 16.405J. 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 concentration subjects before enrolling in either capstone.



