

[Sample academic pathways for Course 16 students entering major in spring of sophomore year](#)

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

Course 16 majors are required to complete a minimum of 192 units beyond the General Institute Requirements (GIRS). The following roadmap shows the paths typically taken by a student who enters Course 16 in the Spring 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.

In addition to the four PAS's listed in these paths, students will find a full listing of PAS's at <https://catalog.mit.edu/degree-charts/aerospace-engineering-course-16/>. As noted on the degree chart a minimum of four PAS's (48 units) is required in a minimum of three (3) professional areas. 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. Note: the IT option is not a degree in itself, nor does it appear on a student's MIT transcript or diploma.

Students are expected to 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 subject pre- and co-requisites and the terms in which courses are offered. For capstone and laboratory subject offerings, please also check the *Course 16 Calendar for Laboratory and Capstone Subjects* (*insert link to Oli's latest version FA25-SP29*).

Program: 16 - Aerospace Engineering

<u>Subject & 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

Term Units = 48

Independent Activities Period

A six-unit elective, e.g. a 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

Fall Term

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

16.09 Statistics & Probability (12)

or

6.3700 Intro to Probability I-II (12) REST 12

7.012-Introductory Biology (12)

BIO

HASS-A (12)

HASS

Term Units = 48

Independent Activities Period

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

Spring Term

18.03 Differential Equations (12) REST

Elective (12) 12

HASS (12) HASS

HASS-H (12), CI-H HASS

Term Units = 48

3. Junior Year

Fall Term

16.001-Unified Engineering Materials & Structures (12), REST 12

16.002-Unified Engineering Signals & Sys (12) 12

16.400 Human Sys Engineering (12), PAS 12

HASS-S (12) HASS

Term Units = 48

Independent Activities Period

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

Spring Term

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

16.07-Dynamics (12) 12

16.100 Aerodynamics (12), PAS 12

Laboratory (12), CIM LAB

HASS-H (12) HASS

Term Units = 48Independent Activities Period

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

Spring Term

16.20 Structural Mechanics (12), PAS 12

16.36 Communication Systems & Networks (12), PAS 12

Design Capstone (12), CIM 12

Elective (12) 12

Term Units = 48**TOTAL UNITS BEYOND GIRS (192)****(192)**

Notes:

1. 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.
2. A student interested in taking capstone 16.82 or 16.83 must complete a minimum of two professional area subjects (PAS) before enrolling in either of these subjects.

