COURSE 16-ENG ENROLLMENT FORM/PROGRAM OF STUDY
S.B. in Engineering
MIT Department of Aeronautics and Astronautics – ABET Accredited

Students fill out this form to select a pre-defined or propose a self-designed concentration. The completed form must be submitted to the AeroAstro Undergraduate Office, Room 33-202B.

Student Name:_____ Student ID: _____

Class Year | Academic Advisor | Concentration Advisor

Ia. Select a pre-defined concentration:

Aerospace Software Engineering ( ) Autonomous Systems ( ) Communications, Embedded Systems and Networks ( ) Computational Engineering ( ) Computational Sustainability ( ) Energy ( ) Engineering Management ( ) Environment ( ) Space Exploration ( ) Transportation ( )

Please explain why this concentration interests you, how your proposed curriculum complements aerospace engineering, and how it will benefit your career.

OR

Ib. Propose a self-designed concentration Please name your concentration

Please write a paragraph describing the concentration theme.

Describe the relevance of that theme to aerospace.

II. Propose a *course plan* for your concentration. The following sections must be filled out whether a student is selecting a pre-defined or self-designed concentration.

Describe why the set of courses are collectively coherent.

For each course in the concentration, write a justification for why that course is relevant to the concentration theme.

Please explain how this concentration will benefit your career.

III. Guidelines for Concentrations

1. Concentrations must include at least 72 units.
2. All concentration subjects must be letter graded.

3. No concentration subject may also be counted as a GIR.
4. UROPs are not allowed as concentration subjects.
5. Freshman-level subjects may not be included.
6. Basic math and science subjects may be included only if they are prerequisites to a higher level engineering subject in the concentration or are specified within the guidelines of a pre-defined concentration; otherwise, such subjects should be taken as unrestricted electives.
7. The concentration must include at least 42 units of engineering subjects and one (higher level) math or science subject. The content must be reviewed and approved by a Concentration Advisor.
8. Each concentration subject must have a clear relationship to the overall theme of the concentration.

In addition to General Institute Requirements (GIRs), please list courses that you are planning to take (or have taken) and indicate for each course the completion term as well as the engineering (E) or math/science (M/S) designation. Also check the *MIT Online Catalogue* for the availability of subjects, their descriptions and prerequisites. Note that you need one CI-M in the junior year and one in the senior year. A total of 192-198 units beyond GIRs are required and units that satisfy a GIR (LAB and REST = 36) do not count in the units beyond GIRs.

A. General Institute Requirements (17 GIRS)

***Science* (6)**	***HASS* (total of 8)**	
	Distribution* (3)	***Concentration (3 -4)***
____**Chemistry (3.091 or 5.11)**	_____	____ _____
____**Biology (7.____)**	_____	____ _____
____**Physics I (8.01)**	_____	
	Other HASS	**Proposal Form** _____
____**Physics II (8.02)**	_____	**Completion Form**
____**Calculus I (18.01)**	_____	
____**Calculus II (18.02)**	____ _____	

*** HASS-Distribution: Students complete 3 HASS distribution subjects, one from each of the following categories: Arts, Humanities, and Social Sciences.**

Institute Lab (1)	**REST (2)**
_____**16.405J**	_____**6.0001-6.0002**
_____**16.622**	_____**16.001**
_____ **16.821**	_____**18.03 or 18.032**
_____ **16.831J**	

Communication (satisfied through 4 courses that can count elsewhere —1 CI-H each in freshman and sophomore years and 1 CI-M each in junior and senior years. Due to scheduling issues, some students will need to petition SORC to take 2 CI-Ms in their senior year.)

CI-H (2):_____CI-H_____(among subjects designated CI-H in the Course Catalogue)

CI-M (2):_____16.405J_____16.622_____16.82_____16.821_____16.83J_____16.831J

B. Departmental Requirements (192-198 Units Beyond GIRS)

1. Core Requirements (84 units, 24 of which fulfill Institute REST)
(Subject names are followed by credit units, and by prerequisites, if any (corequisites in italics)

Term

___ 16.001 Unified – Materials & Structures, 12, 8.01, 18.02, *16.002, 18.03,* REST _____

___ 16.002 Unified – Signals & Systems, 12, 18.02, *8.02, 16.001, 18.03* _____

___ 16.003 Unified – Fluid Dynamics, 12, 8.02, 18.02,18.03, *16.004* _____

___ 16.004 Unified -Thermodynamics, 12, 8.02, 18.02, 18.03, *3.091/5.11, 16.003* _____

___ 6.0001 Intro to Computer Sci Programming in Python, 6, ½ REST _____

___ 6.0002 Intro to Computational Thinking & Data Science, 6, ½ REST _____

___ 18.03 Differential Equations, 12, *18.02,* REST _____
or

___ 18.032 Differential Equations, 12, *18.02,* REST _____

___ 16.06 Principles of Automatic Control, 12, 16.002, 16.003 or 16.004 _____
or

___ 16.07 Dynamics, 12, 16.001 or 16.002, 16.003 or 16.004 _____

2. Concentration Subject Requirements (72 units)

(Please list subject #s and names, prereqs, units, term, and the engineering or math/science designation for each subject.)

Subject #	Units	Term	E or M/S

_____ _____ _____

_____ _____

_____ _____ _____

_____ _____ _____

Total Units _____

E Units _____

M/S Units _____

3. Laboratory and Capstone Subject Requirements (24-30 units, 12 of which fulfill the Institute Lab. Subject names are followed by credit units, and by prerequisites, if any (co-requisites are in italics.

Subject **Term**

One of the following two subjects:
___ 16.82 Flight Vehicle Engin, 12, 2 Conc Subjects, CIM _____

___ 16.83J/12.43J Space Sys Engin, 12, 2 Conc Subjects, CIM _____

Plus one of the following sequences:

Robotics

____ 16.405J/6.141J Robotics: Science & Systems, 12, 1.00 or 6.0001, 2.003, 6.006, 6.009, or 16.06, or permission of instructor _____

Experimental Projects

____16.621 Experimental Projects I, 6, *16.06* or *16.07* _____

____16.622 Experimental Projects II, 12, 16.621, CIM, LAB _____

Flight Vehicle Development

___ 16.821 Flight Vehicle Devel, 18, permission of instructor, CIM, LAB _____

Space Systems Development

____ 16.831J/12.431J Space Sys Devel, 18, permission of instructor, CIM, LAB _____

Note: Students are expected to complete a minimum of two concentration subjects before taking 16.82 or 16.83. Subjects 16.821 and 16.831J are offered alternate years; please see the "*Course 16 Planned Calendar for Laboratory and Capstone Subjects*".

4. Unrestricted Electives (48 units)
(Please list subject #s and names, prereqs, units, and term.)

Subject # / Name	Prereqs	Units	Term

TOTAL UNITS (from B1-B4) =
(A minimum of 192-198 required)

A. Signatures and Approvals

I agree to complete all elements of the program given above: _____
(Student's Signature and Date)

Approval of Concentration Advisor: _____
(Signature and Date)

Approval of the Course 16 Undergraduate Office: _____
(Signature and Date)

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