

# AEROSPACE ENGINEERING MAJOR – Focus on Astronautical Engineering

## Program Tracking Sheet

Effective for students entering AY 2020-2021

Name:	Class Year:
Advisor:	2 <sup>nd</sup> Major:

NOTES: Minimum total academic credit = 15 units

Residency Req.: Min. of 8 units must be completed at WPI

### HUMANITIES AND ARTS (6/3 unit)

All 5 HUA courses must be completed before beginning the Inquiry Seminar or Practicum.

#### Depth Component

Students must complete at least three thematically-related courses prior to the culminating Inquiry Seminar or Practicum in the same thematic area. At least one of the three courses should be at the 2000-level or above.

	Course	Term	Grade	Units
1				1/3
2				1/3
3				1/3
4	HU 3900 or HU 3910			1/3

#### Breadth Component

Students must take at least one course outside the grouping in which they complete their depth component. To identify breadth, courses are grouped in the following manner.

- i. art/art history, drama/theatre, and music (AR, EN/TH, MU);
- ii. foreign languages (AB, CN, EN, GN, SP);
- iii. literature and writing rhetoric (EN, WR, RH);
- iv. history and international studies (HI, HU, INTL);
- v. philosophy and religion (PY, RE).

Exception: May take all six courses in a foreign language

5				1/3
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#### Humanities Elective

6				1/3
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#### PHYSICAL EDUCATION (4 PE classes = 1/3 unit)

7				1/12
				1/12
				1/12
				1/12

**SOCIAL SCIENCE (2/3 unit)** ECON, ENV, GOV, PSY, SD, SOC, SS, STS, DEV and ID2050

8				1/3
9				1/3

#### THE INTERACTIVE QUALIFYING PROJECT (1 unit)

10				1/3
11				1/3
12				1/3

#### FREE ELECTIVES (1 unit)

13				1/3
14				1/3
15				1/3

#### MATHEMATICS AND BASIC SCIENCES (10/3 units)

**MATHEMATICS (6/3 unit)** Courses with prefix: MA

16	MA 1021 (Calc 1)			1/3
17	MA 1022 (Calc 2)			1/3
18	MA 1023 (Calc 3)			1/3
19	MA 1024 (Calc 4)			1/3
20	MA 2051 (Diff Eqs)			1/3
21	MA 2071 Matrices and Linear Algebra			1/3

**PHYSICS (2/3 unit)** Courses with prefix: PH

22	PH 1110/1111/2201 (Mechanics)			1/3
23	PH 1120/1121 (E&M)			1/3

**CHEMISTRY (1/3 unit)** Course with prefix: CH

24	CH 1010 (Chem 1) or 1020 (Chem 2)			1/3
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**SPACE ENVIRONMENTS (1/3 unit)**

25	PH 2550 Atmospheric and Space Env			1/3
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#### ENGINEERING SCIENCE AND DESIGN (20/3 units)

**Orbital Mechanics and Space Environments (2/3 unit)**

26	AE 2713 Astronautics			1/3
27	ES 2503 Intro to Dynamic Systems			1/3

**Attitude Determination and Control (2/3 unit)**

28	AE 3713 Intro. to Control Dyn. Sys.			1/3
29	AE 4713 Spacecraft Dyn. & Control			1/3

**Telecommunications (1/3 unit)**

30	AE 4733 Guidance, Navig., and Comm.			1/3
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**Space Structures (4/3 unit)**

31	ES 2001 Intro to Materials			1/3
32	AE 2712 Intro to Aerospace Structures			1/3
33	AE 3712 Aerospace Structures			1/3
34	AE 4712 Structural Dynamics			1/3

**Rocket Propulsion (3/3 unit)**

35	AE 3602 Incompressible Fluids			1/3
36	AE 3410 Compressible Fluids Dyn.			1/3
37	AE 4719 Rocket Propulsion			1/3
38	ES 3001 Intro to Thermodynamics			1/3

**Major Design Experience (1/3 unit)**

39	AE 4771 Spacecraft and Mission Design			1/3
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**Aerodynamics (1/3 unit)**

40	AE 3711 Aerodynamics			1/3
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**Flight Mechanics, and Stability and Control (1/3 unit)**

41	AE 4723 Aircraft Dynamics and Control.			1/3
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**Experimentation (1/3 unit)**

42	ME 3901 or ME 3902 Engineering Experimentation			1/3
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**Aerospace Design – Major Qualifying Project (1 unit)**

43				1/3
44				1/3
45				1/3