

**AEROSPACE ENGINEERING MAJOR – Focus on Aeronautical Engineering**  
**Program Tracking Sheet Based on AY 2018-2019 Degree Requirements and Course Offerings**

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 REQUIREMENT (2 units)**  
 All 5 HUA courses must be completed before beginning the Inquiry Seminar or Practicum.

<b>Depth Component</b>				
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
<b>Breadth Component</b>				
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
<b>Humanities Elective</b>				
6				1/3

**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

(Note 1)  
**MATHEMATICS AND BASIC SCIENCES (4 units)**  
 Must include 1/3 units in thermodynamics  
**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 (3/3 unit) Courses with prefix: PH**

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

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

25	CH 1010 (Chem 1) or 1020 (Chem 2)			1/3
----	-----------------------------------	--	--	-----

**SPACE ENVIRONMENTS (1/3 unit)**

26	PH 2550 Atmospheric and Space Env			1/3
----	-----------------------------------	--	--	-----

**THERMODYNAMICS (1/3 unit) (Note 2)**

27	PH 2101, CH 3510, or ES3001			1/3
----	-----------------------------	--	--	-----

**ENGINEERING SCIENCE AND DESIGN REQUIREMENT (6 units)**  
 (Note 3 and Note 4)  
**AERONAUTICAL ENGINEERING (4 units)**  
**Aerodynamics (2/3 unit)**

28	AE/ME 3410 Compressible Fluid Dyn.			1/3
29	AE 3711 Aerodynamics			1/3

**Aerospace Materials (2/3 unit)**

30	ES 2001 Intro to Materials			1/3
31	AE 4717 Fund. of Comp. Mat.			1/3

**Structures (1 unit)**

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

**Propulsion (2/3 unit)**

35	AE/ME 3602 Incompressible Fluids			1/3
36	AE/ME 4710 Gas Turbines Prop. & Power			1/3

**Flight Mechanics, and Stability and Control (2/3 unit)**

37	AE 3703 Intro to Control Dynam Sys			1/3
38	AE 4723 Aircraft Dyn. & Controls			1/3

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

39	AE 4770 Aircraft Design			1/3
----	-------------------------	--	--	-----

**ASTRONAUTICAL ENGINEERING (2/3 unit)**  
**Orbital Mechanics and Space Environments (1/3 unit)**

40	AE 2713 Astronautics			1/3
----	----------------------	--	--	-----

**Telecommunications (1/3 unit)**

41	AE 4733 Guidance, Navig., and Comm.			1/3
----	-------------------------------------	--	--	-----

**AERONAUTICAL AND ASTRONAUTICAL ENGINEERING (4/3 unit)**  
**Experimentation (1/3 unit)**

42	ME 3901 Engineering Experimentation			1/3
----	-------------------------------------	--	--	-----

**Aerospace Design – Major Qualifying Project (1 unit)**

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

- Notes:**
1. First year Great Problems Seminar (GPS) courses can only be used to fulfill the HUA, SSPS, or the Free Elective requirement.
  2. If ES 3001 is used to satisfy the Thermodynamics requirement then it counts as a Free Elective and a Math and Basic Science course must be taken to complete the 12/3 Unit requirement.
  3. The courses in the above chart can be replaced by other equivalent courses, with the approval of the AE Program Committee.
  4. 1/3 unit of an activity must be in Capstone Design (can be satisfied with MQP, AE 4770, or AE 4771).