AEROSPACE ENGINEERING MAJOR – Focus on Astronautical Engineering
Program Tracking Sheet
Effective for students entering AY 2020-2021

Name:	Class Year:
Advisor:	2nd 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

Humanities Elective

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

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

SPACE ENVIRONMENTS (1/3 unit)

25	PH 2550 Atmospheric and Space Env			1/3

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

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

Aerodynamics (1/3 unit)

40	AE 3711 Aerodynamics			1/3

Flight Mechanics, and Stability and Control (1/3 unit)

41	AE 4723 Aircraft Dynamics and Control.			1/3

Experimentation (1/3 unit)

42	ME 3901 or ME 3902 Engineering Experimentation			1/3

Aerospace Design – Major Qualifying Project (1 unit)

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

COURSE SCHEDULE FOR HELP IN ACADEMIC PLANNING
Note: For the most up to date information, please consult the Undergraduate Catalog and: https://courselistings.wpi.edu/

AY 2023 - 2024

CURRICULAR AREAS
Fluid Dynamics
Propulsion and Energy
Flight Dynamics and Controls
Materials and Structures
Aerospace Design
General Engineering

[X, Y]: terms for a course with multiple offerings; (X, Y):Time, and Day for In-Person course;

(OL): course is offered OnLine asynchronously; (NO): course is Not Offered this year (alternates)

COURSE SCHEDULE					
	A Term	B Term	C Term	D Term	Summer Term
First Year	MA 1021 [A, B, C]	MA 1022 [A, B, C, D]	MA 1023 [A, B, C, D]	ES 2001 [A, B, C, D]	AE 2110 [E1] (OL)
	PH 1111 [A, C]	PH 1121 [B, D]	CH 1010 [A, C]	PH 2550 [D] (3)	AE 3110 [E1] (OL)
			Free Elect (CS 1004)	MA 1024 [A, B, C, D]	AE 3310 [E2] (OL)
Soph	AE 2410 (9)	AE 2110 (9)	AE 2320 (9)	AE 2310 (10)	
			AE 2320 L (2, 3, 4, R)	ES 3003 [A, B, D]	
	MA 2051 [A, B, C, D]	ME 3902 [A, B]	ES 3001 [A, B, C, D]	ME 3901 [C, D]	
	ES 2503 [A, B, C, D]	MA 2071 [A, B, C, D]			
Junior	AE 3110 (1)	AE 3420 (10)	AE 4310 (11)	AE 4410 (9)	
	AE 3310 (11)	AE 3120 (8)	AE 4320 (10)		
			Free Elect (ECE 2010)		
Senior	AE MQP	AE MQP	AE MQP		
	AE 4210 (9)	AE 4510 (11)	AE 3430 (9)		
	AE 4220 (10)	AE 4520 (9)			
Grad		AE 5134 Plasma Dyn (3, M, R) (OL)	AE 5131 Incomp Fluids (1, T, R) (OL)	AE 5132 Comp Fluids (1, T, R) (OL)	
		AE 5133 Kinetic Theory (NO)			
	AE 5234 Sustainable (1, T, R) (OL)		AE 5231 AirBreatProp (3, T, R)	AE 5232 Spacecraft Prop (3, M, R)	AE 5234 [E1] (OL)
			AE 5233 Combustion (NO)		
	AE 5333 Optimal Control (1, M, W) (OL)	AE 5335 Autonomous Control (NO)	AE 5331 Linear Contr (3, M, W) (OL)	AE 5332 Non-Linear Control (1, T, F)	AE 6098 (OL)
	AE 5334 Spacecraft Dynamics (NO)				
	AE 5434 Comp Sol Mech (3, M, W) (OL)	AE 5435 Frac Mech (1, M, W) (OL)	AE 5431 Solid Mech (12, M, W) (OL)	AE 5432 Composite (NO)	
		AE 5031 Comp Meth (1, T, R) (OL)			
	AE 5032 Seminar (3, F) (OL)	AE 5032 Seminar [NK] (3, F)(OL)	AE 5032 Seminar (3, F)(OL)	AE 5032 Seminar (3, F) (OL)	