

# ENGINEERING MECHANICS: ASTRONAUTICS

## FOUR-YEAR PLAN

### FOUR-YEAR PLAN ASTRONAUTICS OPTION IN ENGINEERING MECHANICS

#### Example Four-Year Plan

##### First Year

Fall	Credits Spring	Credits
CHEM 109 <sup>1</sup>	5 E M A 201 <sup>3</sup>	3
MATH 221	5 MATH 222	4
Communications A	3 M E 231	3
INTEREGR 170 <sup>2</sup>	3 Liberal Studies Elective or INTEREGR 170 <sup>2</sup>	3
or Liberal Studies Elective	LIBERAL STUDIES ELECTIVE	3
	16	16

##### Second Year

Fall	Credits Spring	Credits
MATH 234	4 MATH 320	3
PHYSICS 202	5 Technical Elective	3
E M A 202 <sup>4</sup>	3 M E 361	3
E P 271 or COMP SCI 310	3 E M A 303 <sup>4</sup>	3
E P D 275 or COM ARTS 105	2 E M A/M E 307 <sup>4</sup>	1
	LIBERAL STUDIES ELECTIVE	3
	17	16

##### Third Year

Fall	Credits Spring	Credits
E M A 506	3 E M A 545	3
E M A 405	3 INTEREGR 397	3
E M A 542	3 M E 364	3
M E 363 or CIV ENGR 310	3 STAT 324	3
MATH 321	3 Computing Elective Experimental Mechanics Course <sup>5</sup>	3
	15	18

##### Fourth Year

Fall	Credits Spring	Credits
E M A 469	3 E M A 569	3
E M A 521 <sup>6</sup>	3 E M A 523 or 524 <sup>7</sup>	3
E C E 376 or PHYSICS 321	3 E M A/ASTRON 550, 610, or 642	3
E C E 332 or M E 446	3 Tech Elective	2

Liberal Studies Elective	4 Liberal Studies Elective	3
	16	14

#### Total Credits 128

- <sup>1</sup> It is recommended that students take CHEM 109 Advanced General Chemistry for 5 credits. However, depending on their high school chemistry experience, students may substitute CHEM 103 General Chemistry I and CHEM 104 General Chemistry II for a total of 9 credits.
- <sup>2</sup> Students who were not able to take INTEREGR 170 (<https://guide.wisc.edu/search/?P=INTEREGR%20170>) Design Practicum as freshmen may, with the approval of their advisor, substitute a course offered in the College of Engineering or in the departments of Chemistry, Computer Sciences, Mathematics, and Physics.
- <sup>3</sup> Students may substitute PHYSICS 201 General Physics , 5 credits, for E M A 201 Statics, 3 credits, with the approval of their advisor.
- <sup>4</sup> After completing E M A 201 Statics, students may take E M A 202 Dynamics and E M A 303 Mechanics of Materials/E M A/M E 307 Mechanics of Materials Lab in either order or concurrently.
- <sup>5</sup> E M A 611 Advanced Mechanical Testing of Materials or E M A/M E 540 Experimental Vibration and Dynamic System Analysis or E M A/M E 570 Experimental Mechanics or E M A 522 Aerodynamics Lab. Note that E M A/M E 540 and E M A/M E 570 are typically offered in the fall. E M A 611 and E M A 522 are typically offered in the spring.
- <sup>6</sup> M E 563 Intermediate Fluid Dynamics may be substituted for E M A 521 Aerodynamics. Note that M E 563 is offered in the spring semester only.
- <sup>7</sup> Before Fall 2020, E M A 524 Rocket Propulsion was offered as E M A 601 Special Topics in Engineering Mechanics with the topic of Rocket Propulsion. It is offered in the fall semester only. E M A 523 Flight Dynamics and Control is offered in the Spring semester only.