

INTEGRATED DESIGN ENGINEERING *Aerospace Emphasis- Fall 2022*

1	APPM 1350 (4) Calculus 1 For Engineers	GEEN 1400 (3) Engineering Projects	PHYS 1110 (4) General Physics 1 (CR: APPM 1350)		Writing Requirement(3)	Example COURSE NUMBER (Cr.) Course Name (PR: Pre-Requisites) (CR: Co-Requisites) (Fall or Spring Only Course)
2	APPM 1360 (4) Calculus 2 For Engineers (PR: APPM 1350)	PHYS 1120 (4) General Physics 2 (PR: PHYS 1110)	PHYS 1140 (1) Experimental Physics (CR: PHYS 1120)	ASEN 1320 (4) Aerospace Computing & Engineering Applications (CR: APPM 1350)	ASEN 1022(3) Materials Science for Aerospace Engineers (CR: APPM 2350, ASEN 1320)	
3	APPM 2360 (4) Linear Algebra & Differential Equations (PR: APPM 1360)	GEEN 2400 (3) Engineering Projects for the Community (PR: GEEN 1400)	ASEN 2012 (2) Exp & Comp Methods (PR: PHYS 1110, APPM 1360, ASEN 1320) (CR: APPM 2360)	ASEN 2701 (3) Intro to Statics, Structures, & Materials (PR: PHYS 1110, APPM 1360)	ASEN 2702 (3) Intro to Thermo & Aerodynamics (PR: PHYS 1110, APPM 1360)	ASEN 2802 (1) Aerospace Sciences Lab 1 (PR: ASEN 1320)
4	APPM 2350 (4) Calculus 3 For Engineers (PR: APPM 1360)	ASEN 2703 (3) Intro to Dynamics & Systems (PR: ASEN 2701, APPM 2360) (CR: APPM 2350)	ASEN 2704 (3) Intro to Aero Vehicle Design & Performance (PR: ASEN 2702, APPM 2360) (CR: APPM 2350)	ASEN 2803 (1) Dynamics & Controls Lab (PR: ASEN 1320) (CR: ASEN 2012, ASEN 2703)	ASEN 2804 (2) Aero Vehicle Design Lab (PR: ASEN 1320) (CR: ASEN 2012, ASEN 2703)	Humanities & Social Science (3)
5	Concentration Course (3)	PHYS 2130 (3) General Physics 3 (PR: PHYS 1120) (CR: APPM 2350)	ASEN 3113 (4) Thermo & Heat Transfer (PR: ASEN 2002, APPM 2350, APPM 2360)	ASEN Elective (4) See Page 2 for Options	UD Tech Elective (3) See advisor for options	
6	Concentration Course (3)	GEEN 3400 (3) Invention & Innovation (PR: GEEN 2400)	ASEN 3300 (4) Aerospace Electronics & Communications (PR: ASEN 2002, APPM 2350, APPM 2360)	Free Elective (3)	Free Elective or Concentration Course (3)	Humanities & Social Science (3)
7	Concentration Course (3)		ASEN 4018 (4) Senior Projects 1 Design Synthesis (PR: ASEN 1022, ASEN 3111, ASEN 3112, ASEN 3113, ASEN 3128, ASEN 3200, ASEN 3300) Fall Only	Free Elective (3)	Humanities & Social Science (3)	Humanities & Social Science (3) Upper Division
8	Concentration Course (3)		ASEN 4028 (4) Senior Projects 2 Design Practicum (PR: ASEN 4018) Spring Only	Free Elective (3)	Free Elective or Concentration Course (3)	Humanities & Social Science (3) Upper Division

Integrated Design Engineering Curriculum

Aerospace Engineering Emphasis

Standard Course Substitutions

- **APPM 1350:** MATH 1300
- **APPM 1360:** MATH 2300
- **APPM 2350:** MATH 2400
- **APPM 2360:** MATH 2130 and MATH 3430
- **ASEN 1320:** CSCI 1300, CSCI 1320, CHEN 1310, ECEN 1310
- **GEEN 1017:** AREN 1027, CVEN 1027, MCEN 1025
- **GEEN 2851:** CVEN 2121, MCEN 2023
- **GEEN 3010:** ECEN 3010
- **GEEN 3024:** ASEN 1022, MCEN 2024
- **GEEN 3852:** ASEN 2110, ECEN 3012, CHEN 3320, MCEN 3012
- **GEEN 3853:** MCEN 3047
- **MCEN 1024:** CHEN 1201, CHEN 1211 (CHEM 1113 approved for transfer students)
- **MCEN 2043:** CVEN 3111
- **MCEN 2063:** CVEN 3161
- **MCEN 3021:** CVEN 3313, CHEN 3200
- **MCEN 4043:** ECEN 3300 and ECEN 4138

ASEN Electives

- **ASEN 3111:** Aerodynamics
 - PR: ASEN 2002, ASEN 2004, APPM 2350, APPM 2360
- **ASEN 3112:** Structures
 - PR: ASEN 2001, ASEN 2003, APPM 2350, APPM 2360
- **ASEN 3128:** Aircraft Dynamics
 - PR: ASEN 2003, ASEN 2004, APPM 2350, APPM 2360
- **ASEN 3200:** Orbital Mechanics/Attitude Dynamics and Control
 - PR: ASEN 2003, ASEN 2004, APPM 2350, APPM 2360

Humanities & Social Science Electives/Writing Requirements

Visit the college's [Humanities, Social Sciences, and Writing Requirements](#) webpage for options.

Grade Requirements

The minimum passing grade for a prerequisite or co-requisite course within the Aerospace Engineering Emphasis is a C. This requirement includes courses completed in another program or department (APPM, PHYS, etc.). The minimum passing grade for standalone classes is a **D-**. In addition, students need to have a cumulative and major GPA of at least 2.000 in order to graduate from the College of Engineering. **Pass/Fail** is only permitted for up to 16 Free Elective credits.

Updated: Fall 2022