

You must take 12 Technical Elective credits from the following three groups/categories:

A.) Aerospace – 3 credits

- a. AER E 412 Propulsion
- b. AER E 417 Experimental Mechanics
- c. AER E 422 Structures
- d. AER E 423 Composites
- e. AER E 426 Design/Structures
- f. AER E 432 Controls
- g. AER E 433X Spacecraft Dynamics/Control
- h. AER E 442 V/STOL
- i. AER E 446 Comp. Fluid Dynamics
- j. AER E 448 Fluid Dyn. Of Turbo Mach.
- k. AER E 451 Astrodynamics
- l. AER E 463 Intro to Multi-disciplinary Design Optimization
- m. AER E 464 Spacecraft Systems
- n. AER E 468 Large Scale Complex Eng. Syst.
- o. AER E 471X Aviation Safety & Piloting
- p. AER E 481 Wind Energy

B.) Technical/Engineering – 3 credits

- a. any course from Group A listed above
- b. AER E 381 Intro to Wind Energy
- c. AER E 490 Aerospace Engineering Independent Study/Research**
- d. AER E 494X Make:2:Innovate**
- e. ASTRO 342 Intro to Solar System Astronomy
- f. ASTRO 346 Intro to Astrophysics
- g. IE 305 Engineering Economic Analysis
- h. IND D 341 Computer Aided Industrial Design (SolidWorks)
- i. MATH 317 Theory of Linear Algebra
- j. MATH 365 Complex Variables
- k. MATH 385 Intro to Partial Differential Equations
- l. MATH 414 Analysis I
- m. MATH 481 Numerical Methods for Differential Equations
- n. PHYS 306 Physics of Wave Motion
- o. PHYS 321 Intro to Modern Physics I
- p. PHYS 361 Classical Mechanics
- q. PHYS 364 Electricity & Magnetism I
- r. STAT 305 Engineering Statistics
- s. STAT 341 Intro to Theory of Probability & Statistics
- t. any 300-level or above course in the College of Engineering (must first be approved by AER E Curriculum Committee – EE 351 & AER E/ME 318X will not count as a Tech Elective)

C.) Career – 6 credits

- a. any course from Group A or Group B listed above
- b. any course 300-level or above from the Iowa State University catalog that is relevant to a student's statement of career goals and objectives. Students will need to type up a document that includes their statement of career goals and how the course ties into those goals and/or will help them achieve those goals. That document will need to be submitted to their assigned academic adviser and possibly the AER E Curriculum Chair for review.

****Please note:** a maximum of six credit hours of 490/494X credit can be applied to a student's degree audit for graduation