

AEROSPACE ENGINEERING (AE) (AE)

AE 361 Fundamentals of Aerodynamics 3 cr

Conservation laws, potential flow, airfoil and wing analysis. Boundary layer theory and pressure gradients on plates and airfoils. Introduction to turbulent and vortex-dominated flows.

Prerequisite: (EG 360 Minimum Grade of C and MA 227 Minimum Grade of C and PH 202 Minimum Grade of C)

AE 464 Principles of Spacecraft Design 3 cr

Introduction to space launch vehicle and spacecraft design, including an understanding of the various subsystems and how the overall vehicle's optimization leads to good conceptual designs. Introduction to parameters in aerospace analysis and how they effect the design.

Prerequisite: (ME 328 Minimum Grade of C and EG 360 Minimum Grade of C)

AE 468 Principles of Aircraft Design 3 cr

Introduction to aircraft design, including an understanding of the various components leading to a good conceptual design. Introduction to parameters in aerospace analysis and how they may impact a design. Application of design concepts to an RFP (request for proposal) for design competition.

Prerequisite: (ME 328 (may be taken concurrently) Minimum Grade of C and EG 360 Minimum Grade of C)

Cross-Listed: ME 468

AE 470 Aircraft Structural Analysis 3 cr

Introduction to elasticity. Torsion, bending and shearing of thin-walled skin-stringer structures. Failure mechanisms. Buckling of beams and plates. Introduction to finite element analysis and composite structural analysis.

Prerequisite: EG 284 Minimum Grade of C and EG 315 Minimum Grade of C and ME 328 (may be taken concurrently) Minimum Grade of C

Cross-Listed: ME 470