- Course Number and Title:
  A E 362. Orbital Mechanics

- Catalog Description:
  Dynamics of exoatmospheric flight of orbiting and non-orbiting bodies; 2-body orbital dynamics and Kepler's laws; orbits in 3 dimensions; orbit determination; orbit design and orbital maneuvers; lunar and interplanetary trajectories.

- Credit Hours:
  3 Credits (3)

- Prerequisite(s) / Corequisite(s)
  Prerequisite(s): (M E 228 or MATH 392), ENGR 234, and M E 261
  Corequisite(s): None

- Required:
  Required for BSAE Degree

- Course Availability:
  Fall Semester Only

- Instructor (Usual):
  N/A

- Textbook:
  Curtis, H., *Orbital Mechanics for Engineering Students*, 4th Ed., Butterworth-Heinemann, 2019 (ISBN-10: 008102133X or ISBE-13: 978-0081021330)

- Course Learning Objectives:
  After completing this course, a student should be able to:
  1) Understand dynamics of exo-atmospheric flight of orbiting and non-orbiting bodies; 2-body orbital dynamics and Kepler's laws; orbits in 3 dimensions; orbit determination; orbit design and orbital maneuvers; lunar and interplanetary trajectories.
  2) 2) Identify, formulate, and solve engineering problems on orbital mechanics.
  3) Use the techniques, skills, and modern tools for orbital mechanics and engineering practice.

- Topics Covered:
  - Exo-atmospheric flight of orbiting and non-orbiting bodies
  - 2-body orbital dynamics and Kepler's laws
  - Orbits in 3 dimensions
  - Orbit determination
  - Orbit design and orbital maneuvers