ENG ME406 Dynamics of Space Vehicles **Fall 2010**

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Text: Howard D. Curtis, *Orbital Mechanics for Engineering Students*, Elsevier, 2009.

Week Beginning	Topics	Reading
8/30	Kinematics of moving reference frames	Ch. 1
9/6	Two-body problem	Secs. 2.1-2.11
9/13	"	"
9/20	Elliptical orbits	Secs. 3.1-3.4
9/27	Earth satellite orbits	Secs. 4.1-4.5
10/4	Orbital maneuvers	6.1-6.5
10/11	Relative motion and rendezvous	Secs. 7.1–7.6
10/18	Interplanetary orbits	Secs. 8.1-8.11
10/25	Rigid body dynamics	Secs. 7.1-7.6
11/1	Satellite attitude dynamics	Secs. 10.1-10.10
11/8	"	"
11/15	Rocket dynamics	11.1–11.6
11/22	"	"
11/29	Three-body problem	Sec. 2-12
12/6	"	"

Grading: Three examinations, each worth 25% of the final grade.
Homework assignments, together worth 25% of the final grade.
Optional course project.

References: W. E. Wiesel, *Spaceflight Dynamics*, McGraw-Hill, 1997.
R. H. Battin, *An Introduction to the Mathematics and Methods of Astrodynamics*, AIAA, 1987.