

**ENG ME406 Dynamics of Space Vehicles****Fall 2008**

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Text: W. T. Thomson, *Introduction to Space Dynamics*, Dover, 1986.

<u>Week Beginning</u>	<u>Topics</u>	<u>Reading</u>
9/1	Kinematics of particle motion	Ch. 1, 2
9/8	Rotation matrices, angular velocity	Secs. 3.1-3.3
9/15	Particle dynamics, energy principles	Secs. 4.1-4.4
9/22	Two-body problem	Secs. 4.5-4.9
9/29	"	"
10/6	Orbital dynamics	Secs. 4.11-4.18
10/13	"	"
10/20	Momentum and energy principles for rigid bodies	Secs. 5.1-5.7
10/27	Torque-free motion	Secs. 5.8-5.12
11/3	Attitude dynamics	Secs. 7.1-7.6
11/10	"	"
11/17	Gyroscopic instruments	Secs. 6.1-6.2, 6.6
11/24	Rocket dynamics	Secs. 7.7-7.8, 8.1-8.2
12/1	Three-body problem	Class notes
12/8	"	"

Grading: Three examinations, each worth 33% of 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 Astrody-  
namics*, AIAA, 1987.