INTERMEDIATE MECHANICS TUTORIALS:
EXAMPLE SYLLABUS (VECTOR CALCULUS FIRST)

Tentative schedule of class topics, assigned readings, and exams

Note: Chapters 1 – 6 of the text present the material to be covered in the course, but we will not always follow those chapters in sequential order. Not to worry, the order we will follow will make sense!

Dates are from Fall, 2007:

Week of Mon.:	**Class topics**	**Required readings**
Aug. 28	Fundamental concepts, vector algebra, review of kinematics and Newton's laws	Chap. 1; Sect. 2.1 – 2.3
Sept. 4	Review of work-energy theorem; conservative forces *** Labor Day holiday: Mon. 9/4 – Tues. 9/5*	Sect. 4.1
Sept. 11	Conservative forces and potential energy; del, gradient, curl; constrained motion	Sect. 4.2 – 4.3, 4.6
Sept. 18	Separable forces; velocity-dependent forces	Sect. 2.4
Sept. 25	More with velocity-dependent forces and air resistance ***Exam #1 (in-class portion): Thurs., Sept. 28***	Sect. 2.4 – 2.5
Oct. 2	Simple harmonic oscillations in 1-D and 2-D	Sect. 3.1 – 3.3; 4.4
Oct. 9	Damped oscillations	Sect. 3.4
Oct. 16	Forced oscillations, resonance	Sect. 3.6
Oct. 23	Non-sinusoidal driving forces ***Exam #2 (in-class portion): Thurs., Oct. 27***	Sect. 3.9
Oct. 30	Accelerating reference frames; fictitious "forces"	Sect. 5.1 – 5.3
Nov. 6	Effect of Earth's rotation, Foucault pendulum	Sect. 5.4, 5.6
Nov. 13	Gravitation, angular momentum, Kepler's laws	Sect. 6.1 – 6.4
Nov. 20	Potential energy, gravitational potential *** Thanksgiving holiday: Wed. 11/22 – Fri. 11/24*	Sect. 6.7 – 6.9
Nov. 27	More on Kepler's laws, orbital mechanics ***Exam #3 (in-class portion): Thurs., Nov. 30***	Sect. 6.5 – 6.6
Dec. 4	Orbital energies, "effective" potential of orbital motion, Rutherford scattering	Sect. 6.10 – 6.12