Tentative Schedule

This calendar represents my best guess, in advance, of the order of topics and the length that we will spend on each topic in this course. Keep in mind that this is only a guess and that I will adjust timing to reflect what I see arising in the course as we proceed.

As we make our way through the material I will fill in the roman numeral subject headings with more specific headings so that you can look back on this calendar as a summary of the course.

Calendar

Monday	Wednesday	Friday
Aug 22nd **1**	24th **2**	26th **3** First Class: SHO, standard guess, complex exponentials
29th **4** Damped oscillations	31st **5** Three types of damping & damped driven oscillations	Sep 2nd **6** Damped driven oscillations and resonance
5th Labor Day Holiday	7th **7** Begin Calculus of Variations: Euler's method	9th **8** Calculus of Variations: Lagrange's method
12th **9** Lagrangian formulation of mechanics	14th **10** Detailed example Lagrangian mechanics	16th **11** Constraints in the Lagranian formulation
19th **12** Guest lecture, Dr. Charman: Noether's theorem I	21st **13** Guest lecture, Dr. Charman: Noether's theorem II	23rd **14** First Midterm
26th **15** Wrap up constraints, Central Forces: Reduction	28th **16** Radial E.O.M. for the Kepler problem, qualitative analysis of motion	30th **17** Solving the radial E.O.M., bounded Kepler orbits

Monday	Wednesday	Friday
Oct 3rd **18** Energy & eccentricity, unbound orbits, orbital transfer	5th **19** Finish orbit transfer, Noninertial frames: acceleration without rotation, start example of tides	7th **20** Tides in detail
10th **21** Rotational motion and rotating frames	12th **22** Centrifugal and coriolis forces	14th **23** Free fall with coriolis force and Foucault's pendulum
17th **24** Rigid Bodies: properties of collections of particles	19th **25** Distinguishing angula velocity and angular momentum — the inertia tensor	21st **26** Principle Axes
24th **27** Cube as an example, precession due to a weak torque	26th **28** Euler's equations, intermediate axis theorem	28th **29** Second Midterm
31st **30** Intro to coupled oscillations, normal frequencies	Nov 2nd **31** Normal modes, normal coordinates and weak coupling example	4th **32** Lagrangian approach to normal modes, double pendulum example
7th **33** Lagrangian approach to coupled oscillations: the general case	9th **34** Chaos and Nonlinear Mechanics I	11th Veteran's Day Holiday
14th **35** Chaos and Nonlinear Mechanics II	16th **36** Chaos and Nonlinear Mechanics III	18th **37** Hamiltonian Theory I
21st **38** Hamiltonian Theory II	23rd **39** Hamiltonian Theory III	25th Thanksgiving Break

Monday	Wednesday	Friday
28th **40** Intro to Continuum Theory I	30th **41** Intro to Continuum Theory II	Dec 2nd **42** Last Class: Intro to Continuum Theory III, Classical Mechanics as a foundation for Quantum Mechanics, Quantum Field Theory, General Relativity and Quantum Gravity
5th **43** RRR Week	7th **44** RRR Week	9th **45** RRR Week
12th **46** **Final Exam**	14th **47**	16th **48**