

Syllabus for Physics 610, Classical Mechanics, Fall 2010

The plan is to cover the following material.

Referring to the text, Goldstein, ed.3, we would like to cover the following:

Survey, chapter 1

Variational principles, chapter 2, sections 1-3

The central force problem, chapt. 3, sec. 1-11

Kinematics of rigid body motion, chap. 4

Rigid Body Dynamics, chap. 5 sec. 1,4,6,7.

Small Oscillations chap. 6, sec. 1-5

Special Relativity, chap. 7

Hamilton's equations, chap. 8, sec. 4-6

Canonical Transformations, chap. 9, sec. 1-2, 5-6.

Hamilton-Jacobi theory, chap. 10, sec. 1-2

Classical Field Theory, chap. 13, sec. 1-3

There will be a number of problem sets, about 5-6 problems per week.

Two exams, a mid-term and a final.