

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Classical Mechanics 6.946, 8.351, 12.620

Week 1:

1: Mechanics is more than equations of motion

Read: Notation Appendix and Scheme Appendix
Section 1 through section 1.4

2: Principle of stationary action

Assignment: Due 13 September 2001

Exercises: 1.2, 1.3, 1.4, 1.5

Begin the Double Pendulum Project, exercise 1.39,
which will be due on 4 October 2001.

Week 2:

Assignment: Due 20 September 2001

Exercises: 8.1, 8.2 (from notation section)

Read: Section 1.5

3: Lagrange Equations

Read: Section 1.6 up to 1.6.2

4: Hamilton's Principle

Read: Sections 1.6.2, 1.6.3

5: Coordinate transformations and rigid constraints

Further Assignment: Due 20 September 2001

Exercises: 1.8, 1.9 by hand, 1.11, 1.12, 1.20, 1.21

Week 3:

Read: Sections 1.6.4

6: Total-time derivatives and the Euler-Lagrange operator

Read: Section 1.7

7: State and evolution - Chaos

Assignment: Due 27 September 2001

Exercises: 1.25, 1.26, 1.27, 1.29, 1.30

Remember that the project on the double pendulum,
exercise 1.39, is due 4 October 2001.