University of Virginia
Physics Department
Physics **3210**: Classical Mechanics

Professor Seung-Hun Lee
Physics Bldg 319, 924-7959
Lectures: M, W, F 10-10:50, Room 204

Office hours: Anytime

Texts:
John R. Taylor, "**Classical Mechanics**" (required)
Thomas S. Kuhn, "**The Copernican Revolution - Planetary Astronomy in the Development of Western Thought**" (required)

Some other useful books that can be found on reserve in our physics library:
 Analytical Mechanics, Fowles
  For advanced students: Mechnics, Landau and Lifshitz
       Classical Mechanics, Goldstein

Homework:
 (1) About 11 problem sets of physics problems. These will be due a week later at the **beginning** of the class. **No late homework will be accepted** unless permission is requested prior to the deadline. Working together in solving homework is encouraged, but everybody has to submit individual answers. If two answers are identical, then both will be given zero point.
 (2) Each week, read about 20 pages of the Khun's book, write a short paragraph of your thought, and submit at the beginning of every Monday class.

Evaluation:
Attendance: 10 %
Weekly homework assignments: 20 % (Taylor) + 5% (Kuhn)
Two tests: 20 % each
Final examination: 25 %

Concepts: We will be developing some formal mathematical techniques to describe the dynamics of objects in the macroscopic world.

Physics 3210 – Classical Mechanics   Fall 2014

Textbook: **Classical Mechanics**, Taylor
Instructor: S.-H. Lee (shlee@virginia.edu)

Weeks   Topic

8/26-28   **Taylor Chapter 1:** Newton's Laws of Motion
            Kuhn page 1-20
8/31-9/4   **Taylor Chapter 2:** Projectiles and Charged Particles, Momentum and
Angular Momentum
            Kuhn page 20-41
9/7-11   **Taylor Chapter 3,4:** Momentum and Angular momentum, Energy
            Kuhn page 41-59
9/14-18   **Taylor Chapter 4, 5:** Energy, Oscillations
            Kuhn page 59-77
9/21-23   **Taylor Chapter 5** (continued) Oscillations
            Kuhn page 78-99
9/28   ***1st Midterm (closed book)***
9/25-10/2   **Taylor Chapter 11**: Coupled Oscillators and Normal Modes
            Kuhn page 100-123
10/5   ***Reading day, No class***
10/7-9   **Taylor Chapter 6,7**: Calculus of Variations, Lagrange's Equations
            Kuhn page 123-144
10/12-16   **Taylor Chapter 7** (continued)**, 13**: Hamiltonian Mechanics
            Kuhn page 144-165
10/19-23   **Taylor Chapter 8, 14**: Two-Body Central-Force Problems, Collision Theory
            Kuhn page 165-184
10/26   ***2nd Midterm (closed book)***
10/28-11/6 **Taylor Chapter 8, 14** (continued)
            Kuhn page 185-225
11/9-11/23 **Taylor Chapter 10** Rotational Motion of Rigid Bodies
            Kuhn page 226-242
11/25-27   ***Thanksgiving Recess***
11/130-12/7 **Taylor Chapter 10, 9** Rotational Motion of Rigid Bodies and Mechanics in
Nonlinear Frames
            Kuhn page 243-265
Dec 14   ***Final (9am-noon)***