Introduction to Mechanics: General Physics without Calculus

PHYS 3200 R 1 Fall 2015

Professor: Tony Schultz, Dudley Lawrence C1, Phone: (646) 334-4730, tony.physics@gmail.com

Seminar: T&Th 6:30 - 8:30 PM, Science Building 301

Textbook: *College Physics: A Strategic Approach* 3rd edition, by Randall Knight

Course Outline:

I. **Week One - September 8th and 10th**

   A. **Introduction**
   Homework 1 assigned.

   B. **Introduction & 1-D Kinematics**

II. **Week Two - September 15th and 17th**

   A. **2-D Kinematics in Cartesian Coordinates**
   Homework 1 due. Homework 2 assigned.

   B. **2-D Kinematics in Polar Coordinates**

III. **Week Three - September 22nd and 24th**

   A. **LaTeX & Git**
   Homework 2 due. Practice exam given out.

   B. **Review**
   Practice exam covered.

IV. **Week Four - September 29th and October 1st**

   A. **Exam 1**
   Latex assignment given.

   B. **Inertia**
   Latex assignment due. Exam returned and reviewed

V. **Week Five - October 6th and 8th**

   A. **Static Forces**
   Homework 3 assigned.

   B. **Dynamic Forces**

VI. **Week Six - October 13th and 15th**

A. **Work & Kinetic Energy**
Homework 3 due. Homework 4 assigned.

B. **Potential Energy**

VII. **Week Seven - October 22nd**

A. **STUDY BREAK**
Fun

B. **Impulse & Momentum**
Homework 4 due. Homework 5 assigned.

VIII. **Week Eight - October 27th and 29th**

A. **Collision**
Homework 5 due. Practice exam given out.

B. **Review**
Practice exam covered

IX. **Week Nine - November 3rd and 5th**

A. **Exam 2**
Bibtex bibliography assigned.

B. **Torque Statics**
Exam covered.
Bibtex bibliography due.
Homework 6 assigned.

X. **Week Ten - November 10th and 12th**

A. **Dynamic Torque and Angular Momentum**

B. **Rotational Kinetic Energy & Orbital Motion**

XI. **Week Eleven - November 17th and 19th**

A. **Harmonic Oscillation**
Homework 6 due. Homework 7 assigned.

B. **Harmonic Oscillation & Review**
Exam review.

XII. **Week Twelve - November 24th**

A. **Exam 3**
Tikz assignment given.

B. **THANKSGIVING**

XIII. **Week Thirteen - December 1st and 3rd**

A. **Kinetic Theory**
Tikz assignment due.
Homework 7 due.
Homework 8 assigned.

B. **Thermodynamics**

XIV. **Week Fourteen**

A. **Fluids**
Homework 8 due.

B. **Final Review**
Conference work due.

XV. **Week Fifteen**

A. **Final Exam**

B. **Party Time**

Conference Projects: Students will complete conference work this course culminating in a paper and poster. The paper will be written in the scientific publishing language LaTeX. Ongoing work will be presented throughout the semester.

Homework & Assessments: There will be weekly homework assignments (eight total) and three exams given throughout the semester. In addition there will be three short LaTeX assignments and a final exam.

Lab: Scott Calvin will teach lab in two sections.

Attendance: Your attendance is mandatory and required for getting credit in the course. There are no unexcused absences at all. Absence due to illness or emergency requires a doctor's note to be excused.