

PHYSICS 151: Mechanics for Scientist and Engineers
Section 1 , MWF 10-10:50am, HSCI-100
Office Hours: MWF: 9-10, HSCI-260

- **Instructor** Galen T. Pickett, gpickett@csulb.edu, 562-985-4934, HSCI-260.
- **Course Webpage** <http://www.csulb.edu/~gpickett/phys151/phys151.html>
- **Textbook and supplemental materials**
 1. *Matter and Interactions, 3rd edition* by Chabay and Sherwood.
 2. I₂Click radio-frequency clicker device. **YOU MUST BRING YOUR CLICKER TO EACH CLASS MEETING.** You can register your clicker in class on the first two days we meet, or you can register your clicker online at
 - <http://www.iclicker.com>Homework in the course will require you to access the world-wide through WebAssign. Registered students in this section will be contacted by email with instructions on how to access the homework. **The first homework is due this Saturday, Jan. 28.**
 3. Physics 151 laboratory manual.
- **Grading** There will be no curve in this course. Semester averages will determine your grades as follows: 100-A-90, 89-B-80, 79-C-70, 69-D-60, 59-F-0. Your semester average comes from:
 1. **Graded problem solving** 20 (homework) + (clicker response in class) 5.
 2. **Laboratory** 25.
 3. **Hour Exam I, Friday, Feb. 24** 20.
 4. **Hour Exam II, Friday, April 6** 20.
 5. **Final Exam, Wednesday, May 16, 10:15-12:15 HSCI-100** 10.
- **Graded problem solving** You will be working assigned sets of problems approximately every week in the course. You must submit your answers to the assigned problems via the world-wide web by 9 AM on the Saturday in the week the problems are due. These problems will be machine-graded, with results reported to me, and will determine 20% of your semester grade.

The “in-class” portion of your grade is worth 5% of your overall grade, and is determined by your performance on in-class exercises throughout the semester. You can only prepare yourself for these exercises by **READING THE ASSIGNED CHAPTERS BEFORE CLASS.** Portions of these exercises will involve cooperative work between you and your classmates, so *your classmates will be depending on you.* **If you miss a class meeting, you will only get credit for these exercises by seeing me individually as soon as possible after the absence.** University-approved absences with appropriate documentation entitle you to a make-up assignment. Your make-up will typically involve working a similar problem individually, to be turned in and graded by me.
- **Exam I, and II** You will need **TWO BLUE BOOKS** for each of these exams. These exams will consist of 1-2 problems for you to work out. During the first 30 minutes of the exam, you will be required to work individually, without communicating electronically or otherwise, with closed books, closed notes the assigned problems. Your papers will be turned in at that time. In the last 20 minutes of the exam period, you will be given the opportunity to collaborate *at will* as you complete the same set of problems. Your exam grade will be the numerical average of the scores you achieve in both parts of the exam.
- **Final Exam** The final exam will be a traditional, 2-hour comprehensive exam. You will not be allowed to collaborate in any way during the final. **The final may involve the use of the clicker device.**

- **Laboratory** Without a grade from your laboratory instructor, you will earn an F. If you fail to turn in two laboratory reports, the instructor will **not assign a grade, and you will get an F for the overall course grade.**
- **Absences** I will abide by the University policy on absences. Any university-approved absence with appropriate documentation entitles you to a reasonable make-up assignment.
- **Accommodation** If you require accommodation through the DSSC, please see me.
- **Enrollment and Dropping** No instructor or office staff can add or change a class for you. Only YOU, THE STUDENT, can add or change classes in YOUR schedule. You may either add classes on-line through your MyCSULB account or in person at Enrollment Services during the registration period. Each student is responsible to check their MyCSULB account weekly to be certain that the Class Schedule listed accurately reflects the courses s/he is enrolled in for the current semester. Students should also check for any notices the University has sent to them.

Schedule

1. **Jan. 23-27** Position, Vectors, Geometry, Momentum. Chapter 1.
2. **Jan. 30-Feb. 3** First Law. Momentum Principle. Constant Net Forces. Conservation and Collisions. Chapter 2 (start).
3. **Feb. 6-10** Chapter 2 (end). Non-constant forces, gravitation, electric forces. Chapter 3. **Feb. 5, last day to drop without a “W” grade.**
4. **Feb. 13-17** Contact forces and the momentum principle. Tension, stress, forces and rate of change of momentum. Chapter 4 (start).
5. **Feb. 20-24** Chapter 4 (end) **EXAM I, Friday Feb. 24.**
6. **Feb. 27-Mar. 2** Energy Principle, conservation of energy, kinetic and potential. Work, work-energy theorem. Chapter 5.
7. **Mar. 5-9** Energy principle and Energy principle in macroscopic systems. Sliding friction. Chapter 6 (start).
8. **Mar. 12-16** Energy principle, Chapter 6 (end).
9. **Mar. 19-23** Internal energy, potential. Chapter 7.
10. **April 2-6** The quantum energy principle, multi-particle systems. Center of mass, internal energy, simple vs. extended systems. Chapter 8/9. **EXAM II Friday, April 6**
11. **April 9-13** Multi-particle systems. Chapter 9.
12. **April 16-20** Collisions. Chapter 10.
13. **April 23-27** Angular momentum, Chapter 11.
14. **April 30-May 4** Entropy, gasses, engines. Chapter 12/13.
15. **May 7-11** Continued.

FINAL EXAMINATION Wednesday, May. 16, 10:15-12:15 HSCI-100.