

PHYSICS 037 – Physics For Scientists and Engineers - Section 1718 (Sp 2015)
(M/W 11:10 am – 1:15 am, Tu 11:10 am – 2:25 pm)

Instructor: Elizabeth Bell

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Office: MSB 224

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Hours: M/W- 10:30am-11am, 1:30pm-2pm, 6:15pm-6:45pm, T- 2:30pm-3:30pm,
Th- 5:45pm-6:45pm (an by appointment)

Prerequisite: Math 261 (Calculus I)

Recommended: High School Physics, or Introduction to College Physics

Required:

- **Textbook:** Physics for Scientists and Engineers with Modern Physics and Mastering Physics (4th Edition), by Douglas C. Giancoli
(If you purchase a used text or rent, you will have to purchase Mastering Physics Separately ~ \$67 @ masteringphysics.com) – Course ID: EBELLPhys037SP15
- **Scientific Calculator, Pencils, Graph Paper, Loose Leaf Paper**

Course Description

The first semester of a three semester calculus-level sequence in introductory college Physics designed for Physics, Astronomy, Chemistry, Engineering & Mathematics majors. This course introduces the use of modeling of physical systems and the use of calculus and vectors to solve problems involving Classical Mechanics, gravity, the conservation of energy and momentum (linear & angular), statics & dynamics/kinematics, characteristics of solids, oscillations, and sound. Students will develop skills in modeling, formulating and solving physics problems and will enhance their ability to analyze different situations in terms of fundamental physics principles. The analytical and theoretical work will be reinforced and blended with laboratory experiments that will permit students to verify, illustrate, and deduce various laws of physics.

Student Learning Outcomes

INSTITUTIONAL OUTCOMES (SLOs):

A. CRITICAL THINKING: Analyze problems by differentiating fact from opinion, using evidence and sound reasoning to specify multiple solutions and their consequences.

C. QUANTITATIVE REASONING: Identify, analyze, and solve problems that are quantitative in nature.

F. TECHNICAL COMPETENCY: Utilize the appropriate technology effectively for informational, academic, personal, and professional needs.

PHYSICS DIVISION PROGRAM OUTCOMES (SLOs):

1. Develop critical thinking skills and move toward autonomous learning.
2. Comprehend, describe, and apply the procedures of physics and understand their limitations.
3. Demonstrate competence in applying the methods of scientific inquiry.
4. Apply the basic physics principles to a wide/diverse range of problems.

Grading:

- **Lecture Exams (3) → 20% of grade each (lowest score will be dropped)**
- **Final Exam (1) → 30% of grade**
- **Homework → 15% of grade**
- **Labs → 15% of class grade**
- **Extra Credit → up to 5% of course grade**

Grading Scale:

A 88% and higher **B** 76-87% **C** 64-75% **D** 51-63% **F** 50% and below

Extra Credit (you may earn up to 5% extra credit for the entire course).

Attendance: 3% (perfect attendance), 2% (1 absence), 1% (2A),
0% (more than 2 A); **Tardy counts as absence for extra credit count.**

Other forms of extra credit TBA

Student Responsibilities: Physics is a challenging subject. Expect to spend an average of 6 hours per week (in addition to in-class time) on homework and review for this class. If you are having difficulty, you may work with a fellow classmate, utilize the tutoring center, or e-mail or see me in my office for additional help. I highly recommend forming study groups (early) as I have observed great success with students working together.

Homework: To be assigned by homework sets in [mastering physics](#). Your instructor will demonstrate how to set up an account and navigate the page on the first day of class. All homework assignments will be done on this site.

Exams: There are NO makeup exams in this class. Your lowest lecture exam will be dropped. You **MUST** take the final exam in order to receive a grade for the class.

TENTATIVE SCHEDULE

WEEK	LECTURE (M/W)	LAB (Typically Tues.)
2/9	Introduction 1.1-1.7; 2.1-2.4	Catch-up lecture Introduction / Review: Writing Lab Reports <u>Lab 1</u>
2/16	*No class Monday* 2.5-2.8, 3.1-3.2	Catch-up lecture <u>Lecture/ Short Lab2</u>
2/23	3.3-3.9	Catch-up lecture <u>Lab 3</u>
3/2	4.1-4.8	Catch-up lecture **TEST 1 (Ch. 1,2,3)** Tuesday, 3/3 No Lab
3/9	5.1-5.4, 6.1-6.2	Catch-up lecture <u>Lab 4</u>
3/16	6.3-6.8	Catch-up lecture <u>Lab 5</u>
3/23	7.1-7.4, 8.1-8.3	Catch-up lecture <u>Lab 6</u>
3/30	No Class Tuesday 8.4-8.9	Catch-up lecture **TEST 2 (Ch. 4,5,6)** Wednesday 4/1 No Lab
4/6	No Class This week – Spring Break	<u>No Lab</u>
4/13	9.1-9.9	Catch-up lecture <u>Lab 7</u>
4/20	10.1-10.9	Catch-up lecture <u>Lab 8</u>
4/27	11.1-11.6	Catch-up lecture Lab 9
5/4	12.1-12.5	Catch-up lecture **TEST 3 (Ch. 7, 8, 9,10)** <u>No Lab</u>
5/11	13.1-13.7	<u>Lab 10</u>
5/18	13.8-13.10, 14.1-14.5	<u>Lab 11</u>
5/25	No Class Monday 14.6-14.8 Review for final	Catch-up lecture <u>Short Lab 12</u>

FINAL EXAM: JUNE 1, (MONDAY) 11:30 AM – 1:30 PM
Chapters 11,12,13) Ch. 14 HW only

Additional Notes:

- Most exams will be given on Tuesdays (there is one exception – see schedule)
- Your lowest lab score will be dropped (Note: exam questions may come from in-class laboratory material). Formal lab scores will not be dropped and must be made up (I will explain this on the first lab day)
- All labs are worth 12 points
- (late homework will take a 10% reduction for each day late)

TO SUCCEED AND OBTAIN A GOOD GRADE IN THIS CLASS – YOU MUST:

- 1. Attend class regularly, attending all class sessions. Get to class on time, every time, and stay the whole time. You are responsible for information, test announcements, date changes, etc. – whether or not you are present.**
- 2. Complete assignments on time. You have may have one to one and a half weeks to complete one unit. I will not extend a due date if you wait until the last day to begin the assignments.**
- 3. Take at least 2 of the in-class tests and the Final Exam (I highly recommend planning to take all tests in case of unforeseen emergencies, or just to try to pull your grade up) on the days listed above - No make ups!**
- 4. You are responsible for credit and enrollment status. You are responsible to drop the class – if you choose not to continue. (Note: you may be excluded if you are consistently absent or tardy). Last day to drop the class without a “W” is Feb 20, (with a ‘W’, May 8). Students failing to follow the correct procedure for withdrawal will receive a grade “F” for the course which will affect your GPA. Also note the new policy of only three repeats per class.**
- 5. Each student is expected to do his/her own work on all tests. Academic dishonesty, or cheating, will result in a zero grade on that test (which will not be dropped), plus (in cases of continued academic dishonesty) a filing of a report with the Science Chairperson or Dean of Students giving your name and describing the incident.**
- 6. Expect to work hard. You will need to spend at least 6-8 hours per week to complete the required reading and review of material taught in class. Do not wait until the last minute to start assignments. This will result in incomplete assignments and you will not have sufficient time to absorb the material.**
- 7. Please turn off your cell phone before entering the class, and do not eat inside the NEW classroom. You may bring water bottles. You may use your cell phones during breaks.**
- 8. In taking this class, you are agreeing to abide by all the rules and regulations stated above – including dates of tests and final. This means that you do not schedule anything else on test days.**
- 9. Welcome to Physics 037!!**

** If you are a DSPS student requiring special accommodation for this class, please contact me after class during office hours during the first week.