

COURSE SYLLABUS

PHYS 1401 – Physics Bootcamp

Credit Hours: 4

Fall 2017

Farrington Building, Room 101

11:00 – 11:50 MWF

Instructor: Dr. James B. Dent
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Office hours: Farrington, room 216 B 2-3 MW, 1pm on F, or by appointment

Catalog Description: This course reviews the essential survival-level skills of problem analysis required for the first two years of the pre-engineering and physics curricula. It provides familiarity with the core problem solving tools required for the first two years of work in these majors. A weekly problem recitation session is integrated. Credits: 4

Required Textbook: None (Take very careful class notes, and retain an organized collection of all supplemental materials handed out or delivered electronically.)

Required Supplies: A calculator with trigonometric functions is essential for this course. Graphing calculators are allowed and preferred, but not required. In all testing situations, your calculator may be utilized for standard arithmetic and trigonometric computation only. The use of internal memory for storage of notes is strictly and expressly prohibited.

Assignments: Homework assignments will be given for each section covered in the course. Regular, personal application of the concepts encountered is essential to mastery of the required material. Furthermore, these problems will be a valuable insight into what material is considered important by your instructor. Careful completion of all assignments is in itself an effective way to boost your course average. Moreover, failure to participate will almost certainly damage your test and quiz performance.

Exams: Four major examinations will be given during the semester, in addition to a comprehensive final. If a special situation exists which would cause you to miss an exam, this **MUST** be made known to me prior to the date of the test if possible. Otherwise, a makeup will be allowed in only the **MOST EXCEPTIONAL** situations, evaluated case-to-case.

Grading Plan: The Laboratory and homework are each worth 20% (for a combined 40%). The four semester exams together will comprise 40% of your grade. It is intended that your confidence and ability will grow tremendously during the course of the semester. The comprehensive final is your chance to show how far you have come, and makes up 20% of the full semester average.

Attendance Policy: Regular punctual attendance is expected of all class members. Three absences are allowed to cover necessary excusable schedule conflicts, in accordance with University policy. Absences above this threshold will trigger a two-point reduction of the final grade per instance. Students who falsely sign in for an absent classmate are subject to dismissal from the course.

Class Rules: All class members are expected to respect the proceedings of this course, and the learning environment of their fellow students. This principle has several practical implications, some of which are enumerated below.

- 1) Do not cheat. Violators are subject to dismissal on a 1st offence.
- 2) Regular punctual attendance is expected of all class members.
- 3) There is to be no use of Cellular phones or other internet connected devices in the classroom, for either voice or text communication. Please discreetly excuse yourself if it becomes necessary to take a call.

Tips for Success:

1) **Attend class regularly and take effective notes.** It is certainly the case that I will focus class time on the concepts and materials which I deem most valuable, beneficial and instructive. It stands to reason that the same material will form the core of what will subsequently be tested.

2) **Focus on Ideas and Concepts, not Memory.** Retention of facts alone will not suffice. Success will come instead from the skillful application of the tools and logical thought processes developed. We will employ only a short list of equations. Your job will be to correctly understand how, when, and why each equation applies in context.

3) **Complete all required homework, and attempt problems on your own first.** Regular, personal application of the concepts encountered is the only way to go beyond understanding someone else's solution, and develop confidence in your own problem solving skills. There is simply no substitute here for the experience gained by dedicated practice. Assignments will be given regularly throughout the semester. These will be collected and assigned a grade. Failure to participate will also certainly damage your test and quiz performance. Additionally, these problems can give valuable insight into the material favored by your instructor.

4) **Seek out help.** It is certainly important to persevere through, and even focus your attention especially toward the problems which you have greatest difficulty in solving. However, repeated application of misunderstood tools and indefinite lockdown on a single issue are also damaging and discouraging. Study partners who are also enrolled in PHYS 1401 can be very beneficial for comparing and correctly completing homework. It is good strategy for each member to first attempt all problems alone prior to such meetings, or to intersperse private and group work during the meeting. Office hours are also available for your benefit, and groups are especially welcome. Additionally, the Academic Success Center offers help with physics <http://www.shsu.edu/centers/academic-success-center/index.html>.

5) **Don't give up.** Don't fall into a destructive cycle where frustration blocks participation in the class and related activities. At exams, focus first on the things you know - then fight for each remaining point, never dismissing entire problems at a glance. It may take some time to learn the required way of thinking. However, it can sometimes finally "click" like a light switch, and a struggling student can rapidly shift from doing almost nothing correctly, to almost everything.

6) **Worry less about your grade, and more about developing understanding.** If you are dedicated to absorbing and taking ownership of the material, your grade will take care of itself.

Standard University Policies

The following are university-wide official policies which apply to this course. Additional details are available at the web address: <http://www.shsu.edu/syllabus/>

Academic Dishonesty: Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom.

Classroom Rules of Conduct: Students are expected to assist in maintaining a classroom environment that is conducive to learning. Students are to treat faculty and students with respect. Students are to turn off all cell phones while in the classroom. Under no circumstances are cell phones or any electronic devices to be used or seen during times of examination. Students may tape record lectures provided they do not disturb other students in the process.

Student Absences on Religious Holy Days: Students are allowed to miss class and other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Students remain responsible for all work.

STUDENTS WITH DISABILITIES POLICY: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: <http://www.shsu.edu/dotAsset/7ff819c3-39f3-491d-b688-db5a330ced92.pdf>

Visitors in the Classroom: Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.

USE OF TELEPHONES AND TEXT MESSAGERS IN ACADEMIC CLASSROOMS AND FACILITIES: The use by students of electronic devices that perform the function of a telephone or text messenger during class-time may be prohibited if deemed disruptive by the instructor to the conduct of the class. Arrangements for handling potential emergency situations may be granted at the discretion of the instructor. Failure to comply with the instructor's policy could result in expulsion from the classroom or with multiple offenses, failure of the course. Any use of a telephone or text messenger or any device that performs these functions during a test period is prohibited. These devices should not be present during a test or should be stored securely in such a way that they cannot be seen or used by the student. Even the visible presence of such a device during the test period will result in a zero for that test. Use of these

devices during a test is considered de facto evidence of cheating and could result in a charge of academic dishonesty. See: <http://www.shsu.edu/students/guide/StudentGuidelines2013-2016.pdf>