

RECITATION (LABORATORY) SYLLABUS

PHYS 1401-03 – Physics Bootcamp Recitation An integrated “1-hour” element of the 4 hour course PHYS 1401 Fall 2017

**Farrington Building, Room 201
4:00 – 5:50 F**

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Office hours: Farrington, room 216 B 2pm-3pm MW, 1pm on Friday, or by appointment

Course Description: This integrated weekly problem recitation session covers material essential to students initiating study of the Pre-Engineering and Physics curricula, providing familiarity with the core problem solving tools required to manage the first two years in these majors.

The recitation portion of this course will fully embody the concept of a “Bootcamp”. Students will drill collaboratively on exercises designed both to supplement and to complement the main course lecture period. Team work and individual work will be interspersed, and group members should test their own understanding by helping each other when concepts are not clear. There is intended to be a social component to the drill time, and students may visit as they *actively* work.

Each drill session will typically include more exercises than most students can complete in the allotted in-class time, and residual content may be assigned as homework. Students will peer review and score each other’s completed work at the end of each session. The purpose of this activity is to provide valuable feedback regarding the level of comprehension and mastery of material demonstrated by the class. The peer review will not affect a student’s actual course grade for the recitation exercises, which will be instead assigned based upon participation. Tables that make an honest effort will receive full credit, while those that do not give appropriate attention to their work may be penalized accordingly.

Particularly at the beginning of the semester, the difficulty level of the assigned exercises will be rather low. Exercises are selected in order to help identify areas of potential weakness in a student’s skill set and to reinforce them before further difficulties result. Students who are

comfortable with each of the tested skills should treat it as a simple review. Students who remain uncomfortable with any of the tested skills *must* seek additional help or undertake additional study immediately. Recognize that the structure of knowledge, experience, and confidence that we are attempting to build is cumulative, and that additional bricks cannot be laid without a solid foundation underneath.

Topics for Coverage: Aspects of basic number sense and arithmetic manipulation, including common denominators, factoring, and simplification of compound expressions. The solution of linear, quadratic, and simultaneous equations (both graphically and numerically), including word problem examples. Usage of logarithms, powers, roots, the radian measure, exponential and trigonometric functions. Application of matrix and vector manipulation. Elements of calculus, including differentiation and integration, and application to word problems involving minimization and optimization.

Required Manual: None

Required Supplies: A calculator with trigonometric functions is essential for this course. Graphing calculators are allowed, 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.

Quizzes: Weekly quizzes may be conducted during the first ten minutes of each week's recitation, peer or electronically graded for credit. These will be similar in content to the prior week's lab and are to be completed strictly personally.

Grading Plan: The recitation grade will be computed based on drill participation and review quizzes. The recitation grade will contribute a weight of 20% to the overall grade assigned in PHYS 1401.

Standard University Policies

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