

# General Physics Syllabus

## Instructor: Mr. Schmit

I graduated from Case Western Reserve University with my Bachelors of Science and Masters of Science in computer engineering. I earned my Masters in Teaching from National-Louis University. I have worked for 11 years as a software engineer. This is my fourth year teaching full-time.

## Purpose

The purpose of this course is to contribute to the achievement of the District's Mission, which is to educate students to be self-directed learners, collaborative workers, complex thinkers, quality producers and community contributors; and to master the learning targets that comprise this physics course. To achieve this, you will develop a conceptual understanding of our physical world. You will learn how to think critically, solve challenging problems, and reflect on your understandings. You will become prepared for a number of careers that require the study of physics.

## Learning Activities and Summative Assessments

You develop understanding of the learning targets for this physics course by completing a variety of learning activities such as homework reading, questions, and problems; whiteboarding in groups; and activities. While these activities don't directly affect your grade, they are essential in that they are your opportunity to explore, discover, take risks, fail, ask questions, help each other, practice, and get feedback before having to demonstrate your understanding. You demonstrate your understanding through homework packets, weekly targets quizzes, lab practicums, lab reports, and unit exams. Your grade directly reflects your demonstration of your understanding. You will track your learning progress on a target calendar for each unit.

- I. **Homework Packet.** The target calendar lists the learning targets for each day and reading and problems to be completed as homework that night to reinforce or practice those targets. Homework is both a learning activity and a summative assessment as another medium through which to demonstrate your understanding. Your first attempt at a homework problem and whiteboarding those problems in groups are learning activities. At the end of a unit, you will submit the homework packet with the final attempt completed (including sketch, diagram, or graph; list of givens; fundamental equation; equation with values substituted; and equation solved) as a demonstration of your understanding.
- II. **Whiteboarding.** Whiteboarding consists of small groups preparing on a whiteboard their solution to a previously assigned homework problem or lab activity. One member of the group, often chosen at random, then presents their group's solution to the rest of the class and leads the class in a discussion of that solution. The questions that are asked, debated, and answered during the discussion are critical to the learning of the class. There is not time in class to figure out how to solve your group's problem; so, it is essential that you have at least made a valid attempt at solving these problems before class.
- III. **Lecture, Demonstrations, and In-Class Worksheets:** At times, I will introduce new concepts by presenting the new material with a lecture or demonstration. There are in-class worksheets for most units. Sometimes, I will model how to solve problems by leading the class through problems on the in-class worksheet. Other times, you will work in your group to solve in-class worksheet problems.
- IV. **Lab Activities.** At times, you will explore new concepts in a lab activity and we will discuss and whiteboard our observations and results after the activity. You will develop understanding of many learning targets through these activities and associated activity reports. This is an excellent opportunity to practice and receive feedback on your understanding. Usually, activity reports are due the day after the activity. If you submit the activity report late, you may not receive feedback.

- V. **Lab Practicums and Lab Reports.** You will demonstrate understanding of some learning targets through the completion of lab practicums and lab reports. The targets calendar will specify which learning targets are being assessed for that lab practicum or report. In general, you will complete one lab practicum and report for each unit. Usually, formal reports are due two days after the lab.
- VI. **Targets Quizzes.** There will be weekly Targets Quizzes (usually on Tuesday). Each quiz will provide an opportunity for you to demonstrate your understanding of multiple targets. Each target will appear on three consecutive quizzes. Your best two out of three scores will count towards your final grade. In subsequent quizzes, a given target can either be presented from a different perspective or with a more complex application. You are allowed to use a calculator and an equation sheet. You must show all your work to earn credit. Your work, rather than the final answer demonstrates your understanding. That is, you can demonstrate understanding of a learning target even though you obtained the wrong answer if you have the correct process. Similarly, you cannot demonstrate understanding if your process is incorrect even though your final answer is correct.
- VII. **Unit Exam.** You will demonstrate cumulative understanding of the entire unit through unit exams. Unit exams consist of a series of multiple choice questions. You are allowed to use a calculator and an equation sheet.

## Grading

Grading is done on an individual basis, you are not competing with your classmates, and there is not a curve. Most summative assessments (Homework Packets, Lab Practicums and Reports, Targets Quizzes) are graded on a 0-4 scale:

**4:** Clear demonstration of understanding (with minor mistakes being allowed).

**3:** Significant understanding is demonstrated, but a key aspect of the solution is not.

**2:** Partial understanding is demonstrated (you are in the right ballpark, but misapplied some key information or concepts).

**1:** No demonstration of understanding.

**0:** You did not attempt to demonstrate your understanding.

This scale is converted to percentages as reported in iParent. A 4 corresponds to a 95%; a 3, 85%; a 2, 75%; a 1, 65%; and a 0, 50%.

The unit exams are scored as a traditional percentage of questions answered correctly.

The summative assessments are weighted to comprise the overall semester grade:

Homework Packet (10%), Experiment Reports (20%), Targets Quizzes (40%), Unit Exam (30%).

The semester grade and the final exam grade is determined by percentage:

A: 100% - 90%      B: < 90% - 80%      C: < 80% - 70%      D: < 70% - 60%      F: < 60% - 0%

The cumulative grade is determined by a combination of the semester grade (80%) and the final exam (20%). Any questions about grades will be address outside of class. Please keep all graded materials until the end of semester. The most current grade that I have for you is available via iParent.

## Materials

- Textbook (covered with name inside)
- Organizer for handouts (3-ring binder recommended)
- Flash drive
- Scientific calculator
- Writing instruments
- Paper

# Communication

Homework, lab activities, experiment reports, targets quizzes, and unit exams are enumerated on the calendar for each unit; assignments are listed on the date that they are assigned and, unless otherwise noted, are due to the next day. Class information is posted to the web site. The web site also hosts a forum in which only we (i.e., students and physics teachers) can ask and provide answers to questions. To fully access the web site, you need to login with your school login user name and password. You can subscribe to RSS feeds on the web site. Please feel free to visit me in my office at any time. If you let me know in advance that you are coming, I will ensure that I'm there. If you can't arrange to talk with me in person and you don't wish to post your question on the web forum, e-mail is an excellent way to reach me. I will respond the same night to all messages that are received by 9 p.m.

# Class Expectations

- We are responsible for our own learning.
- We help each other learn.
- We respect each other's learning. For example:
  - We have our materials and are learning from the bell until I dismiss the class.
  - We handle lab equipment and text books with care.
  - We accept and respect each other's differences.
  - We help create a safe environment in which we all feel comfortable asking questions.
- We have misconceptions about science that we wish to overcome.
- While you are encouraged to collaborate on assignments, all assignments must be your original work. Assignments that are identical, either in whole or in part, result in no credit. This affects everyone who has identical assignments regardless of who may have done the original work. Referrals may also be written.
- Cheating or plagiarizing will result in no credit and a referral to your Dean.
- If you are absent, you are responsible for first checking with your group to obtain handouts and notes and then also checking with me to make arrangements for extra help or to make-up quizzes, exams, experiments, or activities.

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We have received, read, and understand this General Physics syllabus for Mr. Schmit's class.

Student Printed Name: \_\_\_\_\_

Student Signature: \_\_\_\_\_

Parent Signature: \_\_\_\_\_