**University of Wisconsin-Stevens Point**

**Department of Physics and Astronomy**

**General Physics (Physics 101)**

**FALL 2016**

**Course Information:**

* Instructor: Bill Jenkins, 715-340-1970 or x4355, bjenkins@uwsp.edu
* Office: Science building, B118
* Office hours: Wednesday, 0800-0900, 1000-1100
* Prerequisites: None. You should be able to do basic algebraic problem solving.
* Textbook: *The Physics of Everyday Phenomena*, Griffith and Brosing, 7th edition, McGraw-Hill
* Purpose of Course: This course is a broad introductory survey of classical physics. Topics include mechanics, energy and work, momentum, waves and oscillations, electricity and magnetism, and optics. Even though you may not pursue a career in physics, the lessons learned from studying physics will sharpen your reasoning skills and give you an in-depth understanding and appreciation of the physical world around you.
* Course objectives:
1. To understand the fundamental concepts of classical physics.
2. To apply these concepts in explaining everyday phenomena.
3. To make predictions about fundamental concepts and then test and verify them in a laboratory setting.
* Classroom times: All classes are held in the Science building.
	+ Lectures: Twice a week, T TH 1100-1150, A109
	+ Discussions: Once a week, A106

Section 1 W 0900-0950

Section 2 W 1100-1150

* + Laboratory: Twice a week, B112

Section 1 T TH 0800-0950

Section 2 T TH 1300-1450

**General course policies:**

* D2L is the mechanism for grading, lecture notes, and problem solving examples.
* No food or drinks in the laboratory.
* Please remove ball caps/knit caps/etc. in lab.
* Use of cell phones, including texting, is not permitted in the classrooms or laboratory, except in case of emergency.
* A scientific calculator is required. Cell phone calculators are not permitted.
* Late work is not accepted unless there are unusual circumstances, such as death in the family, illness supported by a note from a health care professional, or sanctioned UWSP event. You must inform your instructor in advance.
* You should plan to meet for all labs and exams. No lab grades will be dropped. Contact your instructor in advance if a special situation arises that makes it difficult for you to be present for a particular lab or an exam.
* The final exam schedule is established by the university. Early final exams will not be scheduled.
* Once you hand in your final exam, there is nothing more you can do to change your grade.

**UWSP Community Bill of Rights and Responsibilities:** UWSP values a safe, honest, respectful, and inviting learning environment. In order to ensure that each student has the opportunity to succeed, we have developed a set of expectations for all students and instructors. This set of expectations is known as the *Rights and Responsibilities* document, and it is intended to help establish a positive living and learning environment at UWSP. Ref: http://www.uwsp.edu/dos/Pages/Academic-Misconduct.aspx.

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**Homework and discussions:** A homework set of problems from the textbook will be assigned each week for use in the discussion class. To get maximum value out of the discussion class, you should attempt to work all assigned problems. Each week a turn-in problem will be assigned which will be graded. Extra credit problems are often made available, as well.

**Exams:** There will be 4 exams during the semester including the final exam. The first 3 exams will be taken during a lab period. Although the exams are not comprehensive, they may necessarily require you to call on knowledge gained from an earlier exam.

**Laboratories:** These are conducted twice a week. You will work in groups of 2 to 4, depending on the complexity of the lab and availability of equipment. At the end of each lab period your group should be able to turn in your lab report to the instructor. General format for the lab includes: cover page, procedure, data, analysis, and conclusion. Often, extra credit will be given for accuracy on labs, while deductions will be taken for poor data collection.

**Grading:** Your grade is based on total accumulated points. Your grade is simply your points divided by the total available points. The course is comprised of the following components; the percentage indicates the approximate value of the overall point total:

 Laboratories 50%

 Exams 35%

 Homework/discussion 15%

There is no so-called "curve"; each student receives a grade based on percentage according to the following scale:

 A 93% and up B- 80-82.99% D+ 67-69.99%

 A- 90-92.99% C+ 77-79.99% D 60-66.99%

 B+ 87-89.99% C 73-76.99% F Below 60%

 B 83-86.99% C- 70-72.99%

***PH101 Fall 2016 Semester Schedule***

WEEK CHAPTER & TOPIC LABORATORIES

1 -- Sep 6 Chapters 1-2: Intro, describing motion 1 -- Linear data analysis

2 -- Sep 12 Chapter 3.1-3.3: Falling objects 2 -- Constant velocity motion

 3 -- Air rocket

3 -- Sep 19 Chapter 3.4: Projectile motion 4 -- Free fall acceleration

 Chapter 4: Newton's Laws 5 -- Target

4 -- Sep 26 Chapter 4: Newton's Laws, mass vs. weight 6 -- Projectile motion

 Review 7 -- Factors of acceleration

5 – Oct 3 Chapter 5.1-5.2: Circular motion EXAM #1 (Tuesday)

 Chapter 5.4: Universal gravitation 8 -- Friction

6 -- Oct 10 Chapter 6.1-6.4: Energy & work 9 -- Circular motion

 Chapter 6.5: Simple harmonic motion 10 -- Energy, work, & power

7 -- Oct 17 Chapter 7: Momentum & impulse 11 -- Oscillation of a pendulum

 12 -- Simple harmonic oscillation

8 -- Oct 24 Review 13 -- Collisions in one dimension

 Chapter 15.1-15.4: Waves EXAM #2 (Thursday)

9 – Oct 31 Chapter 15.1-15.4: Waves 14 -- Waves

 Chapter 16.1, 16.2, 16.5: Light Waves 15 – Standing waves

10 – Nov 7 Chapter 17.1, 17.4: Reflection of light 16 – Speed of sound

 17 – Plane mirrors

11 – Nov 14 Chapter 17.2, 17.3, 17.5: Refraction of light 18 – Curved mirrors

 19 – Refraction of light

12 – Nov 21 Einstein 20 – Thin lenses

 Thanksgiving break

13 – Nov 28 Chapter 12.1-12.4: Electrostatic phenomena EXAM #3 (Tuesday)

 Chapter 13: Electric Circuits 21 -- Electrostatics

14 – Dec 5 Chapter 13: Electric circuits 22 -- DC circuits

 Chapter 14: Magnetism 23 -- Ohm's Law

15 – Dec 12 Chapter 14: Magnetism/Electromagnetism 24 -- Solar cells

 Review 25 -- Electric motor

**Final exam**: Monday Dec 19, 1445-1645, A109