**PSC110: Physical Science** **Course Syllabus, Fall 2015**

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| Instructor: | Christopher T. Gabler | Tracey Schalnat |
| E-mail: | cgabler@pointloma.edu | traceyschalnat@pointloma.edu |
| Office: | Rohr Science 209 | Rohr Science 302 |
| Office hours: | MWF 1:00 – 2:30 | M 10:30-12:00 |
| | and by appointment | Th 1:30-3:00 |
| Phone: | 619.849.2356 | 619.849.2717 |
| | Class Meeting Time: | (T 106) 8:30-9:25 MWF |
| | Laboratory Meeting Time: | (RS213) 2:45-4:35 W – Section I |
| | | (RS213) 3:15-5:05 R – Section II |

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**PLNU Mission**

**To Teach ~ To Shape ~ To Send**

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

**Materials** – *Conceptual Physical Science*, 5th edition by Hewitt, Suchocki, *and* Hewitt.

**Course Description** – Physical Science is a one-semester course designed to introduce you to selected principles in physics and chemistry and how these relate to various societal and environmental issues. The main topics are covered in two parts: Part I (Physics): motion, energy, heat, waves, electricity, and light; Part II (Chemistry): the atom, chemical bonds, chemical reactions, water and solutions, organic chemistry and nuclear reactions. The study of these topics in physics and chemistry are an attempt to illuminate and reveal the properties of matter, and demonstrate the physical attributes of its motion through space to the student. This course will reveal the beauty, design, structure and behavior of the created universe and show the imaginative mind of the Creator Himself.

**Course Objectives** – An emphasis is placed on both conceptual understanding and the ability to solve problems dealing with the concepts studied. As part of the General Education at Point Loma this particular course places a particular emphasis on quantitative reasoning, particularly through the lens of the physical sciences.

**(Disclaimer: Content of this syllabus is subject to change according to the instructor)**

**Course Objectives (continued):** Specifically students should be able to:

1. Explain everyday observations of the natural world in terms of chemistry and physics.

2. Translate the description of problems into the equations required to solve them using relevant physical principles.

3. Find solutions to problems once appropriate equations or techniques are identified.

4. Create and interpret graphical representations of quantities (motion graphs, standing waves, etc.)

5. Gather and interpret data in a lab setting

**Class Meetings** – Learning physics and chemistry requires active learning and participation during class and lab. In preparation for each class meeting there is a reading assignment. To maximize your learning and participation during our meetings it is very important that you have read this material before class.

**Lab** – You will participate in a lab designed to give you hands-on experience with the concepts covered in the class meetings. Lab will also provide an opportunity for you to use instruments common to the physical sciences, perform measurements, and analyze data using the scientific method. Labs will be completed in small groups, with each member of the team completing his or her own worksheet. Labs comprise 20% of your final grade. You must pass the lab portion of the class to pass the course.

**Homework –** Homework is worth 20% of your final grade.

> *Submission:* Written homework solutions should be worked neatly in clear logical steps. (Solutions and explanations should be clear enough that one of your peers could easily follow what you did if they had not worked the problem before.)
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> *Collaboration*: We expect and encourage collaboration between you and your peers while working on your homework, but your work should be your own original solutions. Allow adequate time to work and think about problems by yourself first before you work together with your peers or ask questions of me. When you sit down to write up a problem, you should not use notes copied from someone else. The guideline is that you should have no trouble explaining or repeating work that you turn in.
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> *Late Submission:* Up to one late assignment per quad will be accepted late with a 10% reduction in grade for every day it is late. This begins with a 10% reduction for an assignment turned in later in the day after this homework has been collected at the beginning of class.

**Exams –** Examinations will be given in class, which count toward 40% of your final grade, two during each section. The final exam is comprehensive and counts for 15% of your grade. Exams will be closed book. Partial credit will be given for correct reasoning at any step of the problem, but only if it is communicated clearly enough for me to understand. For problems that call for a solution or explanation, no credit will be given for an answer alone; the method or reasoning must also be shown.

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**Exams (continued)**

**Final Grades –** The grade you earn in this course is roughly based on the following scale: 100%-88% A, 88%-85.5% A-, 85.5%-83% B+, 83%-78% B, 78%-75.5% B-, 75.5%-73% C+, 73%-68% C, 68%-65.5% C-, 65.5%-63% D+, 63%-58% D, 58%-55.5% D-.

The points you receive during the course are weighted accordingly: in-class quizzes: 5%, labs: 20%, homework: 20%, exams (4): 40%, final exam: 15%.

**Academic Integrity –** Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. As stated in the university catalog, "Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. Such acts include plagiarism, copying of class assignments, and copying or other fraudulent behavior on examinations." All students are expected to uphold the highest standards of honesty and integrity in their academic work. Cheating or plagiarism may result at a minimum in failure on the assignment and may result in an automatic failure in this course.

**Academic Accommodations –**While all students are expected to meet the minimum academic standards for completion of this course, students with disabilities may require academic accommodations. To request academic accommodations, you will need to file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Once documentation is filed, the DRC will contact your instructors and provide written recommendations for reasonable and appropriate accommodation to meet your needs. If you have questions or would like to discuss those or any learning problems, please feel free to contact me. See Academic Policies for full text.

In compliance with federal law, neither PLNU student ID nor social security number should be used in publicly posted grades or returned sets of assignments without student written permission. This class will meet the federal requirements by (Note: each faculty member should choose one strategy to use: distributing all grades and papers individually; requesting and filing written student permission; or assigning each student a unique class ID number not identifiable on the alphabetic roster.). Also in compliance with FERPA, you will be the only person given information about your progress in this class unless you have designated others to receive it in the "Information Release" section of the student portal. See Policy Statements in the (undergrad/ graduate as appropriate) academic catalog.

**FINAL EXAMINATION POLICY**

Successful completion of this class requires taking the final examination **on its scheduled day**. The final examination schedule is posted on the Class Schedules site. No requests for early examinations or alternative days will be approved.

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