



**Department/School Name:
Physics and Engineering**

Course Number and Name:

**PHY/EGR 4082 – Senior
Project II**

Number of Units: 2

Spring 2022

| | |
|--|---|
| Meeting Days: (Lecture) TR | Professor: Dr. Anthony Cortez |
| Meeting Times: 2:55 pm – 3:50 pm | Phone: (619) 849-2439 |
| Meeting Location: Latter Hall 2 | Email: AnthonyCortez@pointloma.edu |
| Final Exam: Thu. 5-May 4:30pm | Office hours: By Appointment |
| | Location: Rohr Science 282 |

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 is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Department Mission

The Physics and Engineering Department at PLNU provides strong programs of study in the fields of Physics and Engineering. Our students are well prepared for graduate studies and careers in scientific and engineering fields. We emphasize a collaborative learning environment which allows students to thrive academically, build personal confidence, and develop interpersonal skills. We provide a Christian environment for students to learn values and judgment, and pursue integration of modern scientific knowledge and Christian faith.

COURSE DESCRIPTION

EGR/PHY 4082 – Senior Project II (2)

This course provides students (teams with) the opportunity to hone and finish building the project design initiated in EGR/PHY 4072. The students will prepare a scientific paper about their research/project and give an oral presentation of their findings. This course will normally be completed in a student's senior year.

Prerequisite(s): EGR/PHY 4072 or consent of instructor.

COURSE LEARNING OUTCOMES

1. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
2. Communicate effectively with a range of audiences.
3. Explore ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and social contexts.
4. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
5. Effectively manage time to meet project deliverables.
6. Gain experience with the peer-review process involved with publication.

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

No textbook required.

COURSE CREDIT HOUR INFORMATION

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 2 unit class delivered over fifteen weeks. It is anticipated that students will spend a minimum of 37.5 participation hours per credit hour on their coursework. For this course, students will spend an estimated 75 total hours meeting the course learning outcomes.

Class Enrollment

It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

ASSESSMENT AND GRADING

Graded Components

- **Progress: In-Class and Take-Home Tasks:** There will be assigned tasks in CANVAS throughout the semester. These tasks are designed to keep you on track for your project.
- **Final Paper:** You will write a publication quality paper on your project.
- **Final Presentation:** Each student/group will present the results of your final project in the form of an oral session and poster session. The poster session will be scheduled the week before finals and will be open for PLNU students and faculty to attend. The oral session is will be during the scheduled final exam time. The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. This schedule can be found on the university website and in the course calendar. No requests for early examinations will be approved. Only in the case that a student is required to take three exams during the same day of finals week, is an instructor authorized to consider changing the exam date and time for that particular student.

| Grading Distribution | Percent |
|--|----------------|
| Progress: In-Class and Take-Home Tasks | 25 |
| Final Paper | 25 |
| Final Presentation (Oral Session) | 25 |
| Final Presentation (Poster Session) | 25 |
| Total | 100 |

Grading Scale

Grades are based on the number of points accumulated throughout the course with the following exception. Approximate minimal percentages required to obtain a given grade are:

| Standard Grade Scale Based on Percentages | | | | | |
|--|----------|----------|----------|----------|----------|
| | A | B | C | D | F |
| + | | 87- 89 | 77-79 | 67-69 | |
| | 93 -100 | 83-86 | 73-76 | 63-66 | 0-59 |
| - | 90-92 | 80-82 | 70-72 | 60-62 | |

STATE AUTHORIZATION

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization](#) to view which states allow online (distance education) outside of California.

LATE ASSIGNMENTS

All assignments are to be submitted by the due dates. Assignments will be considered late if posted after the due date and time using Pacific Standard Time. Late assignments will receive a grade of 0.

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. 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. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [ADC Academic and General Policies](#) [Links to an external site.](#) for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities. Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will issue an academic accommodation plan ("AP") to all faculty who teach courses in which the student is enrolled each semester.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course and/or if they do not wish to utilize some or all of the elements of their AP in that course.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC.

PLNU SPIRITUAL CARE

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith. If students have questions, a desire to meet with the chaplain or have prayer requests you can contact the [Office of Spiritual Development Links to an external site.](#)

PLNU ATTENDANCE AND PARTICIPATION POLICY

Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day. Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation.

PLNU USE OF TECHNOLOGY

In order to be successful in the online environment, students need to meet the minimum technology and system requirements; please refer to the [Technology and System Requirements Links to an external site.](#) information. If a student is in need of technological resources please contact student-tech-request@pointloma.edu

Problems with technology do not relieve students of the responsibility of participating, turning in assignments, or completing class work.

Schedule (Subject to Updates)

| Date | In Class | Items Due | Project |
|--------------------------|--|--|---|
| Week 01 1/11 – 1/14 | Introductions (Zoom) | | Discuss Project with Team |
| Week 02 1/17 – 1/21 | Create Proposal and Timeline | Documented Material of Progress from Fall | Discuss Project with Professor |
| Week 03 1/24 – 1/28 | Peer Review Proposals | Proposal and Timeline | Materials Checklist |
| Week 04 1/31 – 2/4 | Work on Project / Discuss with Prof. | | Work on Project |
| Week 05 2/7 – 2/11 | Work on Project / Discuss with Prof. | | Work on Project |
| Week 06 2/14 – 2/18 | Work on Project / Discuss with Prof. | List of Challenges/Concerns for project deadline | Work on Project |
| Week 07 2/21 – 2/25 | Work on Project / Discuss with Prof. | Report Paper of Progress | Work on Project |
| Week 08 2/28 – 3/4 | Discuss Progress with Prof. | | Work on Project |
| Week 09 3/14 – 3/18 | Work on Project / Discuss with Prof. | | Work on Project |
| Week 10 3/21 – 3/25 | Work on Project / Discuss with Prof. | Data Collected | Work on Project |
| Week 11 3/28 – 4/1 | Work on Project / Discuss with Prof. | | Work on Project |
| Week 12 4/4 – 4/8 | Peer Review Papers | Submit Final Paper Draft | Finalize Project and Paper |
| Week 13 4/11 – 4/13 | Work on Project / Discuss with Prof. | Submit Poster Draft | Finalize Project and Paper |
| Week 14 4/19 – 4/22 | Work on Project / Discuss with Prof. | Revised Poster Due | Print Posters Finalize Project and Paper |
| Week 15 4/25 – 4/29 | Poster Session (Open Session) | Final Paper Due with Revisions Letter | Prepare Presentation |
| Finals Week 5/2 – 5/6 | Final Presentation/Talk (Closed Session) | | |