

		<b>Department of Physics and Engineering</b> <b>EGR/PHY4082 Senior Project II</b> <b>Number of Units: 2</b>
Spring 2023		
<b>Meeting days: Wednesdays</b>	<b>Instructor: Professor Jon Viducich, P.E.</b>	
<b>Meeting times: 6:00 – 7:50 PM</b>	<b>Phone: (619) 849-2219</b>	
<b>Meeting location: RS 365</b>	<b>Email: jviducic@pointloma.edu</b>	
<b>Final Exam: May 2, 2023 8:00-10:00 AM</b>	<b>Office Hours: Via Zoom, by appointment (Please email the instructor to schedule.)</b>	

### 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.

#### Physics and Engineering 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

This course provides students (teams) with the opportunity to hone and finish building the project design initiated in EGR 4072 and to continue building professional engineering skills. The students will prepare a scientific report 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 4072 or consent of instructor.

### COURSE LEARNING OUTCOMES

As part of this course, students will:

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. 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.
3. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

4. Effectively manage time to complete project deliverables on schedule.
5. Communicate effectively with a range of audiences.
6. Gain experience with the peer-review process.

## REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

No textbook is required for this course.

## 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 two-unit class delivered over 15 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 minimum 75 total hours meeting the course learning outcomes.

## ASSESSMENT AND GRADING

This course seeks to prepare students for their engineering careers through self-directed project-based learning, with an emphasis on professionalism. By completing an engineering design project with minimal oversight, students will continue to develop the skills they will need to be successful in a professional setting. As such, assigned grades will reflect the approximate quality, completeness, and timeliness of deliverables expected of an entry-level, junior engineer.

Graded components of the course include the following:

- **Participation in Class Meetings:** Students are expected to arrive on time and prepared for each session's planned activities. Most weeks, this will include a brief, informal oral progress report by each project team to describe progress made and to solicit feedback from the instructor and peers. Some weeks, class time will be dedicated to peer review of draft documents (e.g., proposals, reports, etc.). Students are expected to support each other in the learning process by asking thoughtful questions and providing constructive and respectful written and oral feedback during class sessions. Note that class participation activities are designed to directly benefit students by supporting them in the on-time delivery of excellent projects. A single participation grade will be assigned to each student by the instructor at the end of the term to reflect the student's class participation throughout the course.
- **Project Proposal:** At the start of the term, each team will prepare a proposal for the second semester of the year-long design project, including a list of milestones and associated timeline. The draft proposal will be peer-reviewed during class time and feedback must be incorporated in the final version. By formally defining each project's scope of work and schedule, this document will help students set appropriate goals and evaluate their progress throughout the term. Grading for the assignment will be based on the completeness, quality, and on-time submittal of both the draft and final versions.
- **Progress Reports:** Each team will prepare two written progress reports, due on Weeks 7 and 11 of the term. Class time will be given for peer review of the draft of the first progress report, while no formal peer review time is planned for the second progress report. The progress reports will give students two opportunities to formally evaluate and present their progress, practice their technical writing skills, and become familiar with a

tool frequently used in industry. Grading for the assignment will be based on the completeness, quality, and on-time submittal of both the draft and final versions.

- **Final Report:** Each team will prepare a publication-quality final report, due on the last day of the regular term. The draft-final report will be peer-reviewed during class time and each team will prepare written comments for other teams using a prescribed format. The final version of the report will be submitted together with formal responses to the comments. Grading for the assignment will be based on the completeness, quality, and on-time submittal of both the draft and final versions and the comment responses.
- **Final Presentation:** Each team will deliver a final presentation during the final exam session. (Note: The date and time will be determined within the first two weeks of the term; once fixed, no requests for alternate scheduling will be approved.) Students will have an opportunity to practice their final presentation in class during the last week of the regular term and receive feedback, though only the final presentation will be graded. The presentations will be open to PLNU students and faculty to attend. Grading for the assignment will be based on formal evaluation of both the presentation visuals (e.g., slides) and oral delivery, including appropriate responses to audience questions.

The grading distribution will be as follows:

<b>Graded Component</b>	<b>Percentage of Grade</b>
Participation in Class Meetings	20
Project Proposal	15
Progress Reports	15
Final Report	25
Final Presentation	25
<b>Total</b>	<b>100</b>

Final grades will be assigned based on the number of points accumulated throughout the course as a percentage of the total points possible. The percentage ranges required to obtain a given grade are:

<b>Standard Grade Scale Based on Percentages</b>					
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>
+		87.5-90	77.5-80	67.5-70	
	92.5-100	82.5-87.5	72.5-77.5	62.5-67.5	0-60
-	90-92.5	80-82.5	70-72.5	60-62.5	

## **INCOMPLETES AND LATE ASSIGNMENTS**

All assignments are to be submitted by the due dates. Assignments will be considered late if submitted after the indicated due date and time. Late assignments will receive a grade of 0, except in extremely unusual circumstances and at the instructor's discretion. Note: If, due to extreme circumstances, students foresee that they will not be able to submit an assignment on time, they must inform the instructor and discuss options as early as possible. Extensions will not be considered when failure to meet a deadline is coupled with poor communication.

## **PLNU ATTENDANCE AND PARTICIPATION POLICY**

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If a 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.

## **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.

## **SPIRITUAL CARE**

PLNU strives to be a place where students grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith.

If you have questions, a desire to meet with the chaplain, or if you have prayer requests, you can contact the [Office of Student Life and Formation](#).

## **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.

## **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 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 [Academic Policies](#) 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](mailto: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.

## **SEXUAL MISCONDUCT AND DISCRIMINATION**

Point Loma Nazarene University faculty are committed to helping create a safe learning environment for all students. If you (or someone you know) have experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that help and support are available through the Title IX Office at [pointloma.edu/Title-IX](http://pointloma.edu/Title-IX). Please be aware that under Title IX of the Education Amendments of 1972, it is required to disclose information about such misconduct to the Title IX Office.

If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Counseling Services at [counselingservices@pointloma.edu](mailto:counselingservices@pointloma.edu) or find a list of campus pastors at [pointloma.edu/title-ix](http://pointloma.edu/title-ix).

## Schedule for EGR4082 – Spring 2023

### Tentative Calendar (Subject to Change)

Week	Class Date	Class Time Activity	Mini-lecture Topic	Items Due
1	01/11	Discuss Syllabus and Initial Assignments		Finals Schedule and Lecture Topics (1/13)
2	01/18	Peer Review Proposals	Reviewing Word Documents	Draft Proposal (Before Class)
3	01/25	Work on Project / Discuss with Professor and Peers		Final Proposal (Before Class)
4	02/01	Work on Project / Discuss with Professor and Peers	Data Analysis Techniques	
5	02/08	Work on Project / Discuss with Professor and Peers		
6	02/15	Peer Review Progress Report		Draft Progress Report 1 (Before Class)
7	02/22	Present Progress Report		Final Progress Report 1
8	03/01	Work on Project / Discuss with Professor and Peers	Professional Relationships (Client, Vendor, Manager, Teammate)	
9	03/08	Spring Break - No Class		
10	03/15	Work on Project / Discuss with Professor and Peers	Faith and Engineering	
11	03/22	Present Progress Report		Progress Report 2
12	03/29	Work on Project / Discuss with Professor and Peers		
13	04/05	Work on Project / Discuss with Professor and Peers	Report/Paper Review Process	
14	04/12	Peer Review Papers		Draft Final Paper (Before Class) and Comment Sheets (End of Class)
15	04/19	Senior Survey and Teamwork Evaluations		Senior Survey and Teamwork Evaluations (End of Class)
16	04/26	Practice Presentation with Peer Feedback		Final Paper and Comment Responses (4/28)
17	05/02	Final Presentation (Final Exam Session) - 8:00-10:00 AM in RS365		Presentation Slides (End of Final)