POINT LOMA NAZARENE UNIVERSITY	**Department/School Name: Physics and Engineering** **Course Number and Name:** **EGR3053 Analog Electronics** **EGR3053L Analog Electronics Lab** **Number of Units: 3**
Fall 2021	

Meeting days: Tuesdays / Thursdays	**Instructor: Prof. Jon Viducich, PE**
Meeting times: 4:00-5:45 PM	**Phone: 619.849.2219**
Meeting location: Rohr Science 265	**Email: jviducic@pointloma.edu**
Final Exam: 12/14/21 4:30-7:00	**Office Hours: Tues/Thurs 12:30 PM - 2:00 PM via Zoom, by appointment (see below).**
To reserve a 30-minute appointment slot during office hours, please click here. Additional office hours may be made available at the instructor's discretion, by request.	

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 that 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 3053 - Analog Electronics (2)

AC/DC circuit analysis, transients, characteristics of equivalent circuits for diodes, transistors, power supplies, transistor/operational amplifiers, and feedback applications.

Prerequisite(s): EGR 2024 with a grade of C- or higher.
Corequisite(s): EGR 3053L

EGR 3053L - Analog Electronics Lab (1)

A lab course designed for a hands-on exploration of Analog Electronics. Meets two hours per week.

Prerequisite(s): EGR 2024 with a grade of C- or higher.
Corequisite(s): EGR 3053

COURSE LEARNING OUTCOMES

ABET Outcomes:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to 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
3. An ability to communicate effectively with a range of audiences
4. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Specific Goals for this Course:

1. Analyze and construct analog diode and transistor circuits
2. Analyze and construct operational amplifier circuits
3. Work with filters

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

Floyd, Thomas L. & David M. Buchla. *Analog fundamentals: A systems approach. Pearson, 2013.*

David M. Buchla. *Experiments in Analog fundamentals: A systems approach. Pearson, 2013.*

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 three-unit class taught over 15 weeks (based on 37.5 hours of student engagement per credit hour). Specific details about how the class meets the credit hour requirement can be provided upon request.

ASSESSMENT AND GRADING

Graded Components

- **Homework**: Homework will be assigned at the end of each class session and will be due in class, at the start of class, one week later. (For example, a problem set assigned in class on a Thursday will be due the following Thursday at the start of class.) To receive credit, students must show all work and work must be presented clearly (organized, legible, etc.).
- **Labs:** Labs will be assigned during class sessions and lab work will be completed collaboratively, but lab write-ups will include evaluation and review problems to be completed individually by students outside of class. As with homework problem sets, completed lab write-ups are due in class, at the start of class, one week after they are assigned. To receive credit, students must show all work and work must be presented clearly (organized, legible, etc.).
- **Mid-Term Examination and Final Examination:** The Mid-Term Examination and the Final Examination will include problems and questions covering material assigned in the text (readings and homework problem sets), material presented in class, and material presented in labs. Personal notes of any length or format, in each student's own handwriting, may be used for the exams, along with a dedicated calculator. (No cell phones or computers may be used.) A score of zero will be assigned for an examination that is missed without prior (written) consent or a well-documented emergency outside of the student's control. 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. The only situation in which an instructor is authorized to consider changing the final exam date and time for a student is when that student is required to take three exams on the same day during finals week.

Please note that while you are not graded on attendance per se, based on the “Late Assignments” policy (below), you *must* attend classes to submit and receive credit for assignments. Because of the small size of our class, your presence and participation are critical and appreciated!

Grading Distribution	
Category	**Percentage of Course Grade**

Mid-Term Exam	20
Final Exam	25
Homework	30
Labs	25
Total	100

Grading Scale

Final grades are based on the number of points accumulated throughout the course with the following exception: A student must pass at least one of the two exams to pass the class. That is, a minimum score of 60% must be achieved on at least one of the exams or the final grade will be an F, regardless of all other point totals. Approximate minimal percentages required to obtain a given grade are:

Standard Grade Scale Based on Percentages					
	A	**B**	**C**	**D**	**F**
+		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	

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 submitted after the due date and time using Pacific Standard Time. Late assignments will receive a grade of 0. To allow for unexpected personal issues, the lowest scores for one homework assignment and one lab assignment will be excluded from the calculation of each student's final grade for the course.

PLNU COPYRIGHT POLICY

As a non-profit educational institution, Point Loma Nazarene University 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 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 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 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 classes is considered essential to optimum academic achievement. If the student is absent from more than 10% of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20% of class meetings, the student may be de-enrolled without notice until the university drop date or, after that date, may receive the appropriate grade for their work and participation. See the Catalog for further information about class attendance.

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

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, they can contact the Office of Spiritual Development.

USE OF TECHNOLOGY

As we have seen in recent semesters, our ability to meet regularly in person may change due to the ongoing pandemic, and this could affect the way class meetings are conducted and assignments are submitted. Additionally, individual students may receive temporary remote learning accommodations in accordance with university policy. In order to be successful in the online or hybrid environment, students must meet the minimum *Technology and System Requirements*. Additionally, students must have headphone speakers, a microphone, and a webcam compatible with their computer and available to use. Please note that any course with online proctored exams will require a computer with a camera. (Tablets are not compatible.)

Problems with technology do not relieve students of their responsibilities to participate in class sessions and submit assigned work.

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	29-Aug	30-Aug Business day	31-Aug	1-Sep	2-Sep Intro and course guidelines Lecture Sec 1.1 - 1.5 Homework 1 assigned	3-Sep	4-Sep
2	5-Sep	6-Sep	7-Sep Lecture Sec 2.1-2.4 Lab 2 - 2.1 to 2.4 Homework 2 assigned	8-Sep	9-Sep Homework 1 due Lecture Sec 2.5-2.10 Lab 2 (cont'd) Homework 3 assigned	10-Sep	11-Sep
3	12-Sep	13-Sep	14-Sep Homework 2 due Lecture Sec 3.1-3.2 Lab 6 - 3.1 Homework 4 assigned	15-Sep	16-Sep Homework 3 and Lab 2 due Lecture Sec 3.3 Lab 6 (cont'd) Homework 5 assigned	17-Sep	18-Sep
4	19-Sep	20-Sep	21-Sep Homework 4 due Lab 6 (cont'd)	22-Sep	23-Sep Homework 5 due Lecture Sec 3.4-3.6 Homework 6 assigned	24-Sep	25-Sep
5	26-Sep	27-Sep	28-Sep Lab 6 due Lab 9 - 3.5	29-Sep	30-Sep Homework 6 due Lecture Sec. 3.7-3.9 Homework 7 assigned	1-Oct	2-Oct
6	3-Oct	4-Oct	5-Oct Lab 10 - 3.7	6-Oct	7-Oct Lab 9 due Homework 7 due Lecture Sec. 4.1-4.3 Homework 8 assigned	8-Oct	9-Oct
7	10-Oct	11-Oct	12-Oct Lab 10 due Lab 11 - 4.1-4.2	13-Oct	14-Oct Homework 8 due Lecture Sec. 4.4-4.7 Homework 9 assigned	15-Oct	16-Oct
8	17-Oct	18-Oct	19-Oct Exam Review	20-Oct	21-Oct Exam	22-Oct	23-Oct
9	24-Oct	25-Oct	26-Oct Lab 11 due Lab 13 - 4.6	27-Oct	28-Oct Homework 9 due Lecture Sec. 6.1-6.4 Homework 10 assigned	29-Oct	30-Oct
10	31-Oct	1-Nov	2-Nov Lab 13 due Lab 19 - 6.3	3-Nov	4-Nov Homework 10 due Lecture Sec. 6.5-6.7 Homework 11 assigned	5-Nov	6-Nov
11	7-Nov	8-Nov	9-Nov Lab 19 due Lab 20 - 6.4-6.6	10-Nov	11-Nov Homework 11 due Lecture Sec. 7.1-7.5 Homework 12 assigned	12-Nov	13-Nov
12	14-Nov	15-Nov	16-Nov Lab 20 due Lab 21 - 7.1-7.3	17-Nov	18-Nov Homework 12 due Lecture Sec. 8.1-8.3 Homework 13 assigned	19-Nov	20-Nov
13	21-Nov	22-Nov	23-Nov Lab 21 due Lecture Sec. 8.4-8.5	24-Nov Thanksgiving	25-Nov Thanksgiving	26-Nov Thanksgiving	27-Nov
14	28-Nov	29-Nov	30-Nov Lab 22	1-Dec	2-Dec Homework 13 due Lecture Sec. 9.1-9.4 Homework 14 assigned	3-Dec	4-Dec
15	5-Dec	6-Dec	7-Dec Lab 22 due Lecture Sec. 9.5-9.7	8-Dec	9-Dec Homework 14 due Review Session	10-Dec	11-Dec
16	12-Dec	13-Dec	14-Dec Final Exam	15-Dec	16-Dec	17-Dec	18-Dec