

**Course Title: INTRODUCTION TO ELECTRICAL ENGINEERING LAB**

**Course Prefix: ELEG Course No.: 1021 Section No.: 01**

**Department of Electrical and Computer Engineering College of Engineering**

**Instructor Name:** *John O. Attia*  
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**Office Hours:** **M 1:00 pm – 6:00 pm; T 1:00 pm – 3:00 pm; R 1:00 pm. – 3:00 pm and other times by appointment**

**Virtual Office Hours:** None

**Course Location:** *NENR BLDG Room 126*

**Class Meeting Days & Times:** **Thursday 3: 00 p.m. – 5:20 p.m.**

**Catalog Description:** ELEG 1021. Introduction to Electrical and Computer Engineering Lab. (0-2) Credit 1 semester hours. An introduction to the practice of electrical and computer engineering including identifying electronic components, operating electronic test and measurement instruments. Laboratory exercises include signal generators, passive components, and electronic circuits involving diodes, operational amplifiers and sensors.

**Prerequisites:** None

**Co-requisites:** ELEG 1011 or equivalent course

**Required Text:** Prof. Robert Bowman, “Electrical Engineering Practicum: Exploring the World of Electronics”, Online edition. Please purchase the electronic version of book at <http://www.trunity.net/ELEG-1021-fall-2015/>

**Recommended Text/Readings:** Textbook, handouts and electric circuit books available in the library.

**Access to Learning Resources:** PVAMU Library:  
phone: (936) 261-1500;  
web: <http://www.tamu.edu/pvamu/library/>  
University Bookstore:  
phone: (936) 261-1990;  
web: <https://www.bkstr.com/Home/10001-10734-1?demoKey=d>

**Course Goals or Overview:**

The goal of this course is to motivate students to learn about the fundamental concepts and principles of mathematics, science, and engineering through the hands on experimentation with electrical elements, electronic devices and systems.

**Course Outcomes/Objectives**

**At the end of this course, the student will**

- 1 Be able to use the Personal Test Lab instruments;
- 2 Be able to understand power supplies and electrical power;
- 3 Be able to recognize and generate different types of dc and time varying waveforms;
- 4 Be able to understand of resistors and Ohm’s Law;
- 5 Be able to understand simple diode properties including rectification;
- 6 Be able to understand time constants and capacitor circuit elements;

- 7 | Be able to understand resonance and inductor circuit elements;
- 8 | Be able to build basic electronic circuits and experiments on them
- 9 | Be able to understand the operation of an electronic system
- 10 | Be able to write laboratory reports

**ABET Course Outcomes/Objectives**

- d. ability to function in multi-disciplinary teams
- f. ability to understand professional and ethical responsibility
- k. an ability to use the techniques skills, and modern engineering tools necessary for engineering practice

**Course Requirements & Evaluation Methods**

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

- Quizzes**– written tests designed to measure knowledge of presented course material
- In class assignments** - assignments from text designed to supplement and reinforce course material
- Lab reports** – assignments from text designed to supplement and reinforce course material
- Exams** – written exams designed to assess the students’ understanding of the subject matter of the course.

**Grading Matrix**

<b>Instrument</b>	<b>Value (percentages)</b>
Laboratory Work and Reports	60
Quiz	10
Midterm Exam	15
Final Exam	15
<b>Total</b>	<b>100%</b>

**Grade Determination:**

<b>RANGE</b>	<b>LETTER GRADE</b>
88 % to 100 %	A
75 % to 87 %	B
62 % to 74 %	C
49 % to 61 %	D
0 % to 48 %	F

**Course Procedures**

**Submission of Assignments:**

Lab reports should be submitted by the due date. The lab reports should be submitted to the instructor before the beginning of the class, one week after the scheduled lab date. Late reports will not be accepted. Only one laboratory report from your team will be accepted and graded.

**Formatting Documents:**

Microsoft Word is the standard word processing tool used at PVAMU. If you’re using other word processors, be sure to use the “save as” tool and save the document in either the Microsoft Word, Rich-Text, or plain text format.

**Exam Policy**

Exams should be taken as scheduled in the course syllabus, unless postponed by the instructor.. No makeup examinations will be allowed.

### SEMESTER CALENDAR (SPRING 2016)

WEEK	DATE	TOPIC	CHAPTER IN TEXTBOOK
1	1/21	Introduction to Electrical Engineering, Lab Instruments, Procedures, Personal Test Lab	1
2	1/28	Team Dynamics Lecture Power Supplies and Electrical Power	2
3	2/4	Signal Generators and Waveforms	3
4	2/11	Resistors and Ohm's Law	4
5	2/18	Diodes and Rectification	5
6	2/25	Capacitors and Time Constants	6
7	3/3	Inductors and Resonance	7
8	3/10	<b>Mid-semester Exam</b>	
9	3/24	Thermal Sensors and Temperature	8
10	3/31	Accelerometers and Tilt Sensing	9
11	4/7	Microphones and Sound Sensing	10
12	4/14	Radio Frequencies and Amplitude Modulation	11
13	4/21	Amplifiers and Sound Amplification	13
14	4/26	Professional & Ethical Responsibility <b>Ethics Quiz</b> Review for Final Exam Peer Assessment of Teamwork	
15	5/4	Start of Final Exam	
16	5/4 to 5/11	<b>Final Exam</b>	

#### University Rules and Procedures

##### Disability statement (See Student Handbook):

Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

##### Academic misconduct (See Student Handbook):

You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

##### Forms of academic dishonesty:

1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.
2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3. Fabrication: use of invented information or falsified research.
4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

**Nonacademic misconduct (See Student Handbook)**

The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

**Sexual misconduct (See Student Handbook):**

Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

**Attendance Policy:**

Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

**Student Academic Appeals Process**

Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

**College of Engineering Textbook Policy**

Students must acquire the textbook that is listed as "required" on the course syllabus. The textbook must be acquired by the 10th class day. Students are not allowed to share textbooks with other students who are currently registered in the same class. Failure to acquire (or show proof of purchase) the required textbook by the 10th class day will result in the student being administratively dropped from the course. The University will assess financial obligations for the course to the student as with any other dropped class according to the fee schedule. In addition, your financial aid may be affected by the subsequent registration action(s).

Go to <http://www.pvamu.edu/pages/195.asp> for the Roy G. Perry College of Engineering Textbook Policy.

**Conduct:**

1. Students will conduct themselves in a manner that is respectful to their fellow classmates
2. Cell phones **MUST** be turned off during class time. Students are **NOT** allowed to leave class to answer cell phones.
3. No cell phones or other electronic devices can be used during exams and tests.
4. Students are **NOT** allowed to wear caps/hats in class
5. Earphones should not be in the student's ears while in class.

**NOTE:**

**The analog discovery boards and the analog parts kits should be returned to the Instructor to receive grade for the class. If the analog discovery boards or the analog part kits are damaged or lost, it is the responsibility of the student to purchase new discovery board or parts kit and give them to the ECE Department before the final grades will be posted.**