

## Intro to Elect/Comp Engineering EE1305/EE1105 (11925)

Fall 2017 Syllabus  
Quinones, A336

**Lecture Course Description (EE1305):** In this course students will learn how to use electronic components to build and design circuits for a variety of medical and miscellaneous sensor applications. Through hands on activities, the course will emphasize (1) mathematical and systems concepts that form the basis for electrical engineering, (2) an introduction to circuit components, voltage and current concepts, and (3) sinusoidal signal characteristics, basic filter responses and bandwidth concepts.

**Co-requisite for Course:** EE1105 **Pre-requisites for Course:** MATH 1411 with a grade of "C" or better, may be taken concurrently with EE 1305.

**Laboratory Course Description (EE1105):** Introduction to Electrical Engineering laboratory procedures, causes, and correction of errors in measurements theory of operation and usage of basic Electrical Engineering test instruments, and report writing. **Corequisite:** EE 1305.

**Course Website:** You will be provided with a link to the course website during the first lecture. The course website will include the syllabus, class schedule, PowerPoint lectures, required lab supplies, and other resources. The course website also includes instructor and TA contact information in addition to the open lab schedule.

### Learning Outcomes:

1. Become familiar with the Analog Discovery device (oscilloscope and waveform functions).
2. Use MATLAB to model experimental data.
3. Analyze Simple Circuits using KVL, KCL and voltage divider methods.
4. Build circuits using passive and active components. Build and analyze signals through circuits with low pass, high pass and band pass filters.
5. Use Bode Plots to characterize filters and predict signal response.
6. Build circuits using sensor inputs to create a measureable output.
7. Use complex impedance to model and analyze Op-Amp circuits.

**Textbook:** None. All course material for the lecture is included on the course website. The website also includes the nine lab modules associated with the laboratory.

**Instructor:** Stella A. Quinones  
[stellag@utep.edu](mailto:stellag@utep.edu)  
A336  
(915) 747-6939  
Office Hrs: Wed and Thurs; 10 – noon

**Teaching Assistants:**

There are 5 teaching assistants helping to deliver the labs and lectures. TAs in charge of each lab are listed below. Zenait will be in charge of grading assignments for the lecture.

Roberto Martinez (Monday: 10:30 am – 1:20 pm)  
Alejandro Martinez-Ochoa (Monday: 1:30 pm – 4:20 pm)  
Bianca Castillo (Wednesday: 1:30 pm – 4:20 pm)  
Hector Mota-Aguilar (Thursday: 1:30 pm – 4:20 pm)  
Zenait Lopez (Lecture: 10:30 – 1:20 pm)

**Lecture:** The lecture for EE1305 (11925) takes place on Friday, in BUSN 323, from 10:30 am – 1:20 pm.

**Laboratories:**

Monday AM Lab (16222): 10:30 am – 1:20 pm, E340  
Monday PM Lab (18567): 1:20 pm – 4:20 pm, E340  
Wednesday Lab (11752): 1:30 pm – 4:20 pm, E340  
Thursday Lab (13015): 1:30 pm – 4:20 pm, E340

**Course Grade:** Your grade for EE1305 and EE1105 will consist of the following components, and will result in the same average and letter grade for both EE1305 and EE1105.

Competencies: 10% (First 5 weeks)  
Lab and Lecture Attendance: 10%  
Lab and Lecture Assignments/Homework: 10%  
Quizzes and Exam – 20%  
Lab Modules/Reports: 50%

Each quiz is worth 20-30 points and the exam at the end of the semester is worth 200 points.

**Competencies:** Competencies are worth 10% of the final grade. Topics from a list of 10 competencies will be covered throughout the first 5 weeks of the semester in both the laboratory and the lecture. Students will be given several opportunities to earn points for each of the 10 competencies. As long as students earn the minimum number of points for each competency, they will receive the maximum competency grade of 10%. For every competency point earned, TAs will stamp their competency score card. Students will need to have their score card in order to earn points during the lab and lecture. If a student does not have their score card, they will lose the competency points earned that day. **During the competency period, no homework points will be assigned.**

**Attendance:**

During Competency Period: Attendance will be part of the competency requirements, where students are required to be present on time for 9 out of 11 lecture/labs.

After Competency Period:

After the competency period, Lab and Lecture Attendance is worth 10% of the overall grade.

- Attendance in the lecture will be recorded based on the homework completed and submitted during class. If a student is not present for all the homework assignments on a given day, they will not earn attendance credit for that day.
- Attendance in the lab will be recorded using an attendance sign in sheet, and the attendance sheet will be picked up 5 minutes after lab begins. When absent, the student is responsible for obtaining notes, handouts, and assignments and will be required to meet the same deadlines as the rest of the class.

Excused absences are limited to documented medical emergencies, religious holidays and UTEP sponsored and/or required activities. If you do have an emergency, please notify me as soon as possible. Emergencies happen, unexpected situations arise, and you should use common sense and safe precautions when trying to get to class or lab.

**Homework:** Homework is worth 10% of the final grade. All problems solving type problems are required to be completed on engineering paper in a neat and legible manner using the homework format discussed during the first lab. Homework will be graded after the 5<sup>th</sup> week of class, and after completion of the competency period.

Homework should include the following:

1. Include EE 1305, Name, Group No., Date
2. Statement of the problem with each solution
3. Equations and Diagrams used to solve the problem
4. Answer Underlined
5. Horizontal line separating each question

**Quizzes and Exams:** The quiz and exam grade will be worth 20% of the final grade. Periodic quizzes (worth 20 points each) will be given in the lab and/or lecture to help emphasize problem solving and circuit analysis concepts. Students should prepare for the quiz by working all homework problems and attending tutoring sessions. A comprehensive exam will be given at the end of the semester (worth 200 points) which will be based on the quizzes and homework assigned throughout the semester. The quiz/exam grade will be

calculated by dividing the total points earned by the student by the total possible quiz/exam points.

**Modules:** Modules are worth 50% of the course grade and each lab report is worth 100 points. The modules that will be completed in the lab are: Power Supply, Pendulum, Strain Gauge I and II, EKG, O<sub>2</sub> Sensor, Glucose Sensor, Blood Pressure Sensor, Ballistocardiograph, Ultrasonic Sensor (assignment dates for each module is included on the course schedule).

There are two components to the lab report grade. The first component consists of a module checklist form (15%) and the second component consists of the written lab report (85%). Module 9 will not require a lab report, only a module checklist. Students are usually given one week to complete each lab report (unless indicated otherwise on the schedule) and lab reports are due at the beginning of each lab. A lab report template and rubric is provided on the course website to help students understand the lab report requirements. Students will also be given report writing assignments during the first 5 weeks of the semester. **Late lab reports will not be accepted**, even if you are absent from your lab. If you have a documented excuse that prevents you from completing your lab report on time, please contact your assigned TA or instructor as soon as possible. Graded lab reports will be returned to students one week after they are turned in.

**Teams:** Students will be placed into teams during the first week of class. Student teams will consist of 3 to 4 students per team and students will be on the same team in the lab and lecture. Sometimes students are asked to work on an assignment as a team in the lab or lecture. During these assignments, students are still individually accountable for the work. All labs modules are individual assignments. Students will earn points when they assist others or help “teach” concepts to their team mates. Students should not complete work for other students, but they are encouraged to share their knowledge to help others understand challenging concepts.

**Course Drop Deadline:** Nov 3<sup>rd</sup>

**Drop Policy:** Students can drop the course before Nov 3<sup>rd</sup> with a grade of “W”. Students will be dropped after failing to turn in 3 module lab reports. Students who drop the course after Nov 3<sup>rd</sup> will be assigned the grade earned in the course.

**Scholastic Integrity:** As an entity of The University of Texas at El Paso, the Department of Electrical and Computer Engineering is committed to the development of its students and to the promotion of personal integrity and self-responsibility. The assumption that a student's work is a fair representation of the

student's ability to perform forms the basis for departmental and institutional quality. All students within the Department are expected to observe appropriate standards of conduct. Acts of scholastic dishonesty such as cheating, plagiarism, collusion, the submission for credit of any work or material that are attributable in the whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts will not be tolerated. Any case involving academic dishonesty will be referred to the Engineering Dean's Office and the Office of the Dean of Students. The Dean of Students will assign a Student Judicial Affairs Coordinator who will investigate the charge and alert the student as to its disposition. Consequences of academic dishonesty may be as severe as dismissal from the University. See the Office of the Dean of Students' home page at [www.utep.edu/dos/acadintg.htm](http://www.utep.edu/dos/acadintg.htm) for more information.

**Acknowledgement:**

I acknowledge that I have received the syllabus for EE 1305 (16753) and EE1105 (16222, 18567, 11752, and 13015)) for the Fall 2017 semester, and that I understand all attendance competency, and assignment requirements.

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**Print Name**

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**Student Signature**

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**Date**