

MELTEC 320

**ELECTRICAL SAFETY**

**COURSE SYLLABUS**

Instructor: Adrian De Angelis – SIERRA B110 – West Campus – Ph.: 575-6088

Email: [deangelisa@yosemite.edu](mailto:deangelisa@yosemite.edu)

Office hours: In Zoom: (see address in Canvas or email the instructor)

**Advice**

Before enrolling in this course, students are strongly advised to be able to demonstrate basic computer skills such as creating and navigating folders and files.

Take this quiz to see if you have the skills to be an Online Student: Student Online Readiness Quiz

**Course scope**

- This course is oriented to the understanding of electrical hazards to prevent them.
- It introduces the student to the knowledge of how to recognize, evaluate and control electrical hazards. Some guidance regarding how to proceed in case of an emergency is also covered.
- ELECTRICAL SAFETY – ELTEC 320 addresses regulatory compliance – OSHA 1910, OSHA 1926 – standard NFPA 70E, safe work practices, personal protective equipment, and technical knowledge related to recognized and generally accepted good engineering practices.

**Student Learning Outcomes**

At the end of this course the student will be able to

1. Recognize and evaluate electrical hazards
2. Control electrical hazards by following safety procedures and using appropriate protective equipment.

**Bibliography** – *All documents or links to free materials (see Module 00)*

1. NFPA 70E – Standard for Electrical Safety in the Workplace
2. OSHA 1910 Subpart S, 1910.147
3. NIOSH Electrical Safety - Student Manual
4. Safety BASICS – Cooper Bussmann

## Recommended

- Handbook for Electrical Safety in the Workplace – 2018 Edition – C. D. Coache

## Other Resources (free and available online)

- Cal/OSHA Guide to Electrical Safety
- NIOSH - An Introduction to Electrical Safety for Engineers
- DOE Electrical Safety Handbook – DOE-HDBK-1092-2013
- ARMY – Electrical Facilities Safety – TM 5 – 682

## **Other recommendations**

### Calculator

- Texas TI 30 *XIIS* ( **Not Xa and not XS**) - (**X II S = Best for the rest of the program**)

## **Communication**

- In this course we will use INBOX feature on the left menu banner (the icon is a letter coming out of an envelope). INBOX will allow communication with your classmates and instructor. Please check your messages regularly.
- When communicating with your instructor, put a subject in the subject box that describes the email content with your name, module and message subject.
  - For example: MDL2\_320\_ASSIGNMENT (Homework of Module 2);  
MDL1&2\_320\_Assessment (Test of Modules 1 and 2)
- Send email only to INBOX. Do not submit your assignments by message.
- Make certain to check your messages frequently.

## Discussion Forums

We have two different discussion forums.

- In *Course Q & A Discussion* you can ask your questions and get them answered by peers or the instructor. This space should only be used for questions you want to be public to the entire class. If you have a specific question for your instructor, use INBOX instead.
- In *Student Lounge* is your space to discuss whatever you'd like with your peers in this class. Questions related to this course can go in the Course Q & A Discussion instead.

## **Attendance prior and after Census Day**

- Participation will be verified. Regular participation is essential to ensure success in this course. This course must be certified by Census Day 09/08/2020. To avoid being dropped from the course make evident your participation. First assignment is due the day before: 09/07 (although it has an extension to 09/14 but it will be marked as “late”). Also, there are two forums, and the resource of communication through INBOX.

- After Census Day is your responsibility to drop this course. If after Census Day and before the completion of the 75% of the course, a student stops attending but forgets to drop the class, the instructor could, unintentionally, overlook the situation and fail to drop the student from the roster. In such case, the final grade will be likely an “F”

## **Exams and Grading Criteria**

### Homework

Homework will be delivered as quizzes. Completing the quizzes is the only tangible proof that the student has been reading the material, which is the only way the contents of this course can be reasonable thoroughly covered. Besides it is the only available “physical” way to engage the subject in order to promote learning. To encourage a strong relation with a proactive attitude watching the videos and the reading material, the homework assignments will weight heavily in the final grade: 40%. These assignments are not only important elements to achieve good grades, but also important elements to prepare exams.

All homework assignments ...

... have a due day and an extension of few days to cover for imponderables. After the due day, the assignment will be marked as “late”; after the extension day it will be inaccessible going automatically offline.

... allow unlimited attempts within their timeframe. The grade for HW assignments will be the higher score obtained.

... can be reopened upon request for the purpose of improving grades but the ability of automatic repetition is lost and as the class draw to its end it will be unlikely to have enough time to tackle too many assignments.

### Summative Assessments

A test follows the conclusion of a group of topics. Each test will reserve the same amount of time that what a module would require allowing for review of topics and organizing notes. Three summative assessments are planned for this course.

The first assessment will be about electrical hazards, electrical safety programs, standards, and regulations; the second about grounding, protective devices, short circuits, and electrically safe work conditions (LO/TO); and the third about shock and flash hazard analysis. The weight of these tests on the final grade is 30%.

### Final Exam

The final exam will cover the totality of the course, emphasizing the second half focused in prevention. The final exam accounts for 30% of the final grade **but it must be correct in a 50% or more**. Not taking the final exam, or having an F as grade (less than 50%), automatically

disqualifies the student who will fail the course. Only in very special cases a student that misses the Final will receive an incomplete grade (IF or ID) in order to give him/her the opportunity to take the exam another day. Fail to do so will grant an automatic F or D.

In summary

Homework	40%
Assessments	30%
Final	30%

### Grades

A “C” is required to complete successfully this course. That is the equivalent of the 70% of the total points (gathered between homework, assessments, and the final exam) with the strict condition of having not less than the 50% of the final exam correct. Scoring less than 50% in the final exam disqualifies for a passing grade.

As for the grading scale, it has a generous set up.

The grading scale is as follows:

A = 90 to 100%

B = 80 to 89%

C = 70 to 79%

D = 50 to 69%

F = up to 49%

### **Electrical Apprentices**

Students enrolled in the DAS program (apprentices electricians working for a licensed contractor under the supervision of a journeyman) must pass this class in order to be accredited with the course’s hours.

### **Keys for success**

- Use the videos as learning materials. They were conceived as means to pass information and make clear points. They are not entertaining. Make sure closed captions are ON. Take notes as watching the video; the information covered exceed the graphics of the presentations.
- Take care of the homework as soon as it was posted, and you are ready. Repeat homework assignments; not only cannot hurt your grade but it can help to fix concepts.

- HW assignments are made from questions banks, and the variety of questions will enrich your comprehension.
- Keep a log with your notes from videos and readings.
- Keep track of what HW you turned in and the grades you are obtaining. These elements will give you a good idea of your progress and will show the areas that you need to work out.
- Commit time for this class. Online classes are somehow more time consuming than face-to-face classes. What it is saved in commuting – time, gas, parking – has to be invested in setting time and space to be *productive*. There is no peer pressure, group effervesce, or group cheerfulness studying alone. To be self-driven, self-discipline, are key to endure – and pass – an online class.
- Proactively engage in the forums opened to your convenience. That gal or guy shinning as the smartest person of the group (maybe you) is not around to compare notes or study together. So, if you don't ask questions or go to the forums seeking collaboration, it is likely that googling queries will be a lot harder – and lonely – than cooperating with the rest of the class and your instructor through the communication tools.