MELTEC 322

Technical Measurements - Course Syllabus

Instructor: Adrian De Angelis – SIERRA B110 – West Campus – Ph.: 209-575-6088
email: deangelisa@yosemite.edu website: http://deangelisa.faculty.mjc.edu

Office hours:

Course scope

This course offers step-by-step procedures for technical measurements, calculations, and applications for electrical and mechanical technicians. The course will include methods for solving practical problems involving accurate measurements, estimations, and application of formulas. Methods will include unit conversions, measurement tolerances, accuracy, repeatability, ratios, and graphing.

Student Learning Outcome

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

1. Analyze electrical and mechanical measurements and convert their values into alternate units (i.e.- English to Metric).

2. Calculate losses, efficiency, useful output, or operating cost of electrical or mechanical equipment based on measurements.

3. Using measured values, solve an electrical or mechanical formula for any of its unknown variables.

Bibliography (Back to Index)

Required

1. **Class Package - MELTEC 322 – Technical Measurements**. Text made with full excerpts from DOE Fundamentals Handbook – Mathematics – Volumes 1 and 2 (DOE-HDBK-1014/1-92 and DOE-HDBK-1014/2-92), and excerpts from Arm Forces Technical Manual (Air Force TO 32-1-101, Army TM 9-243, Navy M6290-AJ-MAN-1010, and Marine Corp TM 10209-10/1). All the materials used are Public Domain with Distribution Statement A (Approved for public release with distribution unlimited). These publications were edited, adapted, and complemented by Adrian DeAngelis to match the 322 course needs. This text is available free of charge in CANVAS and students will access the first day of class.

Recommended

A good supporting text that students can use and that will provide good complementary information even beyond the scope of this class.

1. **MATHEMATICS FOR THE TRADES (A Guided Approach)**, R. A. Carman and H. M. Saunders, PEARSON – Prentice Hall.

Attendance prior and after Census Day

Attendance will be taken daily. Regular attendance is essential to ensure success in this course and that laboratory procedures are clearly understood.
Students must email giving notice to the instructor if they are planning to miss a class before the end of second week (prior to census day) to avoid being dropped from the course. After the second week, it is the student responsibility to drop this course. If after the second week, 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". However, a student showing a pattern of several consecutive missed assignments can be interpreted as a permanent absence in which case the instructor may drop the student without giving previous notice.

Exams and Grading Criteria (Back to Index)

Class Participation

Being on-time, staying on-task, and keeping self-engaged in the subject, although leave a lot of margin for subjectivities from the point of view of the student and the instructor, is going to be considered and awarded. "Class Participation" includes punctuality, readiness, engagement with the subject, cooperation, team spirit. Class Participation represents ***5% of the final grade.***

Homework

Homework will be delivered through CANVAS; it will mostly consist of questions based on the material covered in class and supported by the class package; however, some written assignments (paper based) will be required. These written assignments will be delivered as handouts. There will be plenty time to turn in homework, therefore, HW must be completed by the due day specified during the class agenda. After the due day, homework assignments will be rendered "not done" – 0 points. HW represents ***35% of the final grade***

Activities

Activities related to the use of basic measurement tools and instruments will be delivered as hand-outs and completed in class. In occasions these activities will be started in class and will be completed as homework. These assignments are expected to be completed within the timeframe specified when the class agenda is set. Activities represent ***15% of the final grade***.

Exams

Several small exams will be taken throughout the semester and a comprehensive final exam at the end of the semester.

Review and Summative Exams will be delivered at the beginning of classes or as the conclusion of subjects. They will be short exams paper-based or electronic (in CANVAS). They will represent ***20% of the final grade***.
The Final Exam is VERY IMPORTANT. It is the culmination of this course, and it will cover the totality of the course. The final exam will be held in the sixteenth week. The final exam represents ***25% of the final grade*** **and it must be correct in a 50% or more**. Not taking the final exam, or having an F as grade, automatically disqualifies a student who will then not pass 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

Participation	5%
Homework	35%
Activities	15%
Review and Summative Exams	20%
Final Exam (at least 50% must be correct)	25%

Grades (Back to Index)

Although some exception might apply, a “C” is required to complete successfully this course. That is the equivalent of the 70% of the total points (gathered between participation, homework, labs, and exams) with the strict condition of having not less than the 50% of the final exam correct

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%

Keys for success (Back to Index)

- Come to class ready with class package, notes, and personal gear.
- Before each class, review the material of the latest class.
- Summarize the main points. Good summaries will help you to prepare the exams. Mark the text or keep notes with subjects that are not clear in order to ask for clarification the following class.
- All written assignments will be given with enough time to show your instructor a draft of your work. Corrections and tips will be given so you will be able to correct mistakes or improve answers. Use this advantage!
- Keep track of what HW you have completed, the state of your activities, 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.
- It is not bad idea to organize some group sessions to review concepts and get ready for the exams.
- Formal education, such as this class, is a short term commitment with long term consequences. Some family matters – little league, Halloween, a fishing trip, etc… - may need to take the back seat for a while. It is up to the instructor to do the upmost to deliver good content, but up to the student to achieve success.