

MELTEC 230
BLUEPRINT READING FOR ELECTRICIANS
COURSE SYLLABUS

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Course scope

Blueprint Reading for Electricians - MELTEC 230 - is a course dedicated to the development of fundamental skills for reading, interpreting, and, whenever needed, modifying electrical blueprints, electrical diagrams and schematics; as well as simple sketching for communication purposes.

The first half of the semester will be dedicated to the basics of construction and mechanical drawings, electrical schematics describing power distribution, and supporting materials: Blueprint Structure and Organization (ANSI - NEMA), Architectural Scales, Basics on Mechanical Drawings, Lighting and Power Plans, One-Line Diagrams, Risers, Schedules, and Tech Specs (Division 26, ex-Division 16). The second half of the semester will be dedicated to control drawings: Motor Control Circuits

(ANSI and IEC), Wiring Schematics, and other possible associated drawings such as Pneumatics, Hydraulics, P&I, and Electronics.

Student Learning Outcomes [\(Back to index\)](#)

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

1. Extract relevant information from an electrical blueprint whether this information is for installation, configuration or troubleshooting purposes
2. Modify an existing blueprint to reflect changes or upgrading, and draw a sketch and its associated elements to express an idea.

Bibliography

Required

The Electrical Trade Know How – MELTEC 230 – Blueprint Reading for Electricians, material compiled, and authored by Adrian DeAngelis

Recommended

Blueprint reading for Electricians by Chuck Wright [Thomson- Delmar Learning in partnership with NJATC]

Other On-line Resources

[Pacific Northwest Region Forest Service – Region 6 Electrical Engineering Drawings](#)

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Class Requirements

For this class, some drawing is required. Drawing will sharpen the ability to read. Hopefully, students should be able to perform some free hand drafting, if not, the next basic drawing set is recommended (please see the next list) although not required.

1. 10" Triangle 45°/90°
2. 10" Triangle 30°/90°
3. 12" Ruler
4. 2B Pencil
5. HB Pencil
6. Eraser

These exercises, not only will help to develop basic skills on drafting, very useful organizing work or communicating issues in the field, but also will help to better understand the information contained in printouts as well as memorize basic symbology and conventions.

Attendance prior and after Census Day [\(Back to index\)](#)

Attendance will be taken daily. Regular attendance is essential to ensure success in this course. Students must give notice to the instructor if they are planning to miss a class before the second week (prior to census day) to avoid being dropped from the course. After the second week it is students' 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. It will be rewarded with 5 points (**5% of the total**)

Homework

Homework based on drawings and quizzes represent **50%** of the final grade. Mostly, one week is the time it will be given to the students to complete assignments, so the due day to turn HW in must be kept. These assignments are not only important elements to achieve good grades, but also important elements to prepare the exams. Homework not turned in on time will not be accepted unless extraordinary circumstances. All work is strictly individual

Exams

Midterm and Quizzes: Classes might start with a short quiz on the subject of the last class' material. The midterm will cover the totality of the subjects covered in the first half. A review, previous the exam, will address all the key points relevant for the exam. The midterm exam (including short quizzes) represents **20%** of the final grade

Final: **The final exam** is VERY IMPORTANT. It is the culmination of this course and will cover the totality of the course. It 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 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	Participation	5%
	Homework	50%
	Midterm (and quizzes)	20%
	Final	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	60 to 69%
F	up to 59%

Electrical Trainees – ETs ([Back to index](#))

Students enrolled in the DAS program (Electrical Trainees – ET – working for a licensed contractor or under the supervision of a journeyman) will log 35 hours of technical education of the 150 required in a year, but must pass with a C or better in order to be accredited with the hours.

Keys for success

- Before each class, review the material of the latest class.
- Take care of homework as soon as it is assigned. Give a general read to the HW prompt, which will make your work more effective.
- When reading material is assigned, mark the text or keep notes with subjects that are not clear in order to ask for clarification the following class.
- Keep books, notes, and homework grouped by themes, and keep track of what HW you have 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.
- 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 utmost to deliver good content, but up to the student to achieve success.

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