

Syllabus
OEES 175 – Soldering Practices, 2 credits (4P)
(OEES stands for Occupational Education, Electronic Service.)
Fall 2006

Instructor

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Web site for this course: mountttaylor.com/175	Web site for NMSU Grants: grants.nmsu.edu

Book

No book is used in this course. However, various Internet resources will be used. These resources will be made available on the course's Web site.

Materials Needed

Materials for a soldering project of your choosing.

Course Description

Methods and techniques of hand soldering in the production of high quality and reliable soldering connections.

Expected Outcomes From Taking This Course

After completing this course, you should be able to successfully do the following:

- Using appropriate heat sources (such as soldering iron or torch), make high-reliability solder joints for the following: Cable splices, cable connectors, components on circuit boards, lugs for large-diameter wire, and sheet metal.
- Inspect all the above types of solder joints.
- Perform desoldering and resoldering for a variety of solder joint types.
- Repair circuit board traces and pads.
- Consistently strip wires without nicking them.
- Inspect stripped wires.
- Use shrink tubing for insulation.
- Answer written questions about soldering standards, component identification, reading of component value codes, solders, fluxes, solvents, wave and surface-mount soldering, tools, anti-static protection, safety, and first aid for burns.

My Philosophy of Teaching

I believe an instructor's job is to help everyone succeed. There are several techniques I use. You will get lots of one-on-one help from me. Also, I'll do my best to make the course exciting. And, I encourage students to help each other (but, of course, not by doing work for other students!). If you find yourself getting frustrated, and are tempted to be absent a lot, talk to me! Or, if you think you are doing so well that you can miss a lot of class, talk to me! If you're bored, I can give you some interesting extra credit projects to work on.

Assignment List

Detailed assignments will be listed on the course's Web site (see address under "Instructor" above). New assignments will be added from time to time. I have not reached perfection yet (and never will). Thus, I am constantly striving to improve the courses I teach and don't like to have every detail spelled out in advance.

The following is a week-by-week list of what we'll be covering. Because every group of students is different, it's almost impossible to figure out ahead of time what should be covered each week. Thus, the following list is likely to change.

Week	Week Of (Monday of the Week)	
1	8-21	Lecture: Safety part I Lab: 3D constructions using wire.
2	8-28	Lec: First aid for burns. Lab: Wire stripping & inspection. 3D constructions using bare wire.
3	9-4	<i>Monday is Labor Day holiday.</i> Lec: Safety part II Lab: Cable splicing & inspection. Shrink tubing.
4	9-11	Lec: Standards, such as IPC-A-610. Through holes, etc. Lab: Circuit board soldering & inspection
5	9-18	Lec: Recognizing components and reading their value codes. Lab: Torch soldering (lugs for large-diameter wire, sheet metal, etc.)
6	9-25	Lec: Recognizing components and reading their value codes. Lab: Desoldering and resoldering.
7	10-2	Lec: Solders, fluxes, and solvents. Lab: Circuit trace and pad repair. Desoldering and resoldering.
8	10-9	<i>Monday and Tuesday is Fall Break.</i> Lab: Catch-up.
9	10-16	<i>Tuesday is the last day to drop a course with a W (as opposed to a low grade).</i> Lab: Soldering connectors onto cables.
10	10-23	Lec: Tools, including types of irons. Lab: Work on project.
11	10-30	Lec: Wave soldering, and surface mount-soldering. Lab: Work on project.
12	11-6	Lec: Anti-static protection. Lab: Work on project.
13	11-13	<i>Friday is the last day to withdraw from the university.</i> Lab: Work on project.
14	11-20	<i>Wednesday - Friday is Thanksgiving holiday.</i> Lab: Work on project.
15	11-27	Lab: Work on project.
16	12-4	Lec: Review of the course. Lab: Work on project.
17	12-11	<i>Final Exam Week</i>

Components of Your Grade for the Class

Homework and class exercises	10%
Lab work	40%
Surprise quizzes/skill demonstrations (Relax, I have to make them easier than non-surprise quizzes!)	30%
Instructor's evaluation (Includes attendance, extra credit, giving help to other students, and getting help from other students. Will normally be used only to raise your grade if warranted. Only in rare cases will it have a negative effect on your grade.)	10%
Final Exam	10%
Total	100%

Grading Scale for the Course	Why This Grading Scale?
95 - 100% A	I believe that the basics are highly important, and I stress them a lot in quizzes and assignments. My quizzes and assignments are easier than they would be with the more common 90%=A, 80%=B, etc. grading scale. Because of this, the 90%=A scale results in too many A's and B's. The good news is that with my grading scale, you'd have to be a total goof-off to get lower than a C in the class! I feel that anyone who has mastered the basics deserves at least a C.
90 - 94% B	
70 - 89% C	
60 - 69% D	
0 - 59% F	

Homework & Class Exercises

1. Be sure to put your **name, assignment number, and date turned in** in the **upper right-hand corner** of any assignments you submit. [2 percentage points lower if not done this way.]
2. If you send me any e-mails, be sure to put **"175" at the very beginning of the subject line.**
3. For the first fifteen class periods that an assignment is **late**, two percentage points will be subtracted for each class period late. If your assignment is 30 or more days late, you will only lose 30%. No credit will be given for late assignments turned in during the last two weeks.
4. **Written class exercises cannot be made up.** However, your Extra Credit Grade will be substituted for the first three class exercises you miss.
5. At the end of the semester, I will tally up points for assignments and class exercises. I will then make a **grading curve for assignments and for class exercises** (i.e., so many points = A, so many = B, etc.)

Quizzes

- Written quizzes will usually have several questions based on *Things to Remember* pages on the Web site.
- Some quizzes will be hands-on exercises where you will demonstrate skills you have learned.
- Instead of makeup quizzes, I will use your Extra Credit Grade for any quizzes you've missed.
- The final exam will have both a written part and a hands-on part.

Extra Credit

After the course is over, I will tally-up extra credit points. I will then make a grading curve to determine how many points for an A, how many for a B, etc. Extra credit will help you in the following ways:

- Part of the Instructor's Evaluation score
- Used as your grade when you miss a quiz or a class exercise (first three class exercises only).

Attendance and Punctuality

When an employer sees that someone has taken classes at NMSU, we want them to know that this person has good work habits. Thus, I'll be expecting you to have good attendance and to arrive on time. Sometimes the "be absent &/or late" disease spreads through a class. Hopefully this won't happen in our class. If it does, however, I'll be switching from a tolerant mode to a "give minus points for absences or tardies" mode. So, do what you can to show up and be on time. This class is not like some other classes where you can read the book and catch up. Much of the

learning in our class will be of a hands-on nature, with class exercises and interaction with the instructor being an important part.

Important Notes to Students

- **Kids:** Don't let your kids run wild while you're taking a class. They must be supervised at all times.
- **Americans With Disabilities Act (ADA):** If you have, or believe you have, a disability and would benefit from any accommodation(s), you may wish to register with the Student Services Office on the first floor of Martinez Hall. All medical information will be treated confidentially.

After you have registered, please make sure that your instructors receive a copy of the accommodation memorandum from Student Services within the first two weeks of class. It will be your responsibility to inform your instructors or the office of Student Services (in a timely manner) if the services/accommodations provided are not meeting your needs.

If you have a condition that may affect your ability to exit safely from the premises in an emergency or that may cause an emergency during class, you are encouraged to discuss any concerns with Ms. Irene Lutz, Campus Student Services Officer at 287-6629, or with your instructor(s).

Feel free to call Ms. Lutz at the number above or Mr. Paul Gayle-Smith, NMSU Director of Institutional Equity, at (505)646-3635 with any questions about the Americans with Disabilities Act (ADA), and/or Section 504 of the Rehabilitation Act of 1973.

- **Academic misconduct:** Any Student found guilty of academic misconduct shall be subject to disciplinary action. Academic misconduct includes, but is not limited to, the following actions: cheating; plagiarism; unauthorized possession of examinations, reserve library materials, or laboratory materials; unauthorized changing of grades on an examination, instructor's grade book, or grade report; nondisclosure or misrepresentation in filing out applications or other college records; or violation of computer use policies. The following disciplinary actions and sanctions may be imposed for any of the above infractions or regulations: disciplinary probation, disciplinary suspension, dismissal, expulsion.
- **The temptation is great to turn in work done (in all or in part) by other students. I frequently catch students who do this. Don't take the chance!** Except for such cheating, I'm a very merciful instructor and will give you lots of help during class and office hours to insure that you do well. Talk to me if you're worried about getting a low grade.