WELDING PRACTICUM I
WELD 2310

Class Hours: 0.0     Credit Hours: 4.0
Laboratory Hours: 10.0     Revised: Fall 2015

Catalog Course Description:

A projects-based course in which students and instructor identify a research design project to be pursued by the students. Students work individually or collaboratively as a team member to plan, design, fabricate and weld metals, and to produce actual, realistic projects.

Entry Level Standards:

Students should have a thorough understanding of safety and welding processes to adequately perform design-oriented tasks.

Prerequisites: WELD 1010 and WELD 1030

Corequisites: WELD 1070

Textbook(s) and Other Course Materials:

As required

Other TOOL LIST:

- Safety glasses with shields
- Arc Welding helmet with #10/12 lens
- Oxy-fuel welding goggles
- Welding gloves
- Chipping hammer
- Hand wire brush
- Spark torch lighter
- 6-10 foot tape measure
- Torch tip cleaner set
- Slip Joint pliers or vise grip
- Layout maker or soapstone
- Long sleeve shirt (blue jean) not flannel
- Leather boots
- Beanie cap
- Welding leathers

I. Week/Unit/Topic Basis:

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<th>Week</th>
<th>Topic</th>
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Activities will vary according to course content and may include course introduction, project planning, design criteria, welding, fabrication, inspection, testing of individual and/or group projects.

Presentations and Reports

Review / Final Exam

II. Welding Technology General Outcomes (Educational objectives)

I. Reach their full potential in the welding field.

II. Use the correct procedure in setting up equipment, and the skills used in welding.

III. Use Shielded Metal Arc Welding, Gas Metal Arc Welding, and Gas Tungsten Arc Welding machines in both pipe and plate welding.

IV. Explain the physical characteristics of different metals

V. Develop the cognitive and physical skills necessary to pass certification tests.

VI. Apply welding knowledge to effectively utilize problem solving skills as it relates to the operation of equipment in the industry.

VII. Demonstrate the ability to identify, analyze, and synthesize relevant data from multiple information sources in order to develop acceptable conclusions.

III. Welding Technology Competencies

Students will:

A. Demonstrate knowledge to pass a practical examination such as AWS code. I, II, III, V, VI, VII.

B. Demonstrate basic welding techniques for a variety of welding positions and various joint designs related to principals, policies and procedures in the welding industry. I, II, III, V, VI, VII.

C. Perform metal layout processes and prepare metals. I, II, III, V, VI, VII.

D. Examine work pieces for defects and measure work pieces with straightedges or templates to ensure conformance with specifications. I, III, V, VI, VII.

E. Apply the principles of metallurgy toward the metalworking trades. I, III, IV, V, VI, VII.

F. Read and interpret blueprints and welding symbols to fabricate components. I, III, V, VI, VII.
G. Apply math and measurement skills to perform specific tasks. I, II, III, V, VI, VII.

H. Follow industry safety practices. I, II, III, V, VI, VII.

I. Apply written, oral and graphical communication skill in both technical and non-technical environments; identify and use appropriate tech literature. I, II, IV, V, VI, VII.

J. Demonstrate a commitment to quality, timeliness, and continuous improvement. I, II, III, V, VI, VII.

K. Engage and interact as a team in a learning environment. I, V, VI, VII.

* Roman numerals after program competencies reference the Welding Technology General Outcomes (Educational objectives) listed above.

IV. Course Goals*:

The course will

1. Guide students to apply basic welding skills and knowledge. A, B, G, H,

2. Enhance working knowledge acquired in welding technology related skills. A, B, C, D, E, F, G, H, I

3. Direct student’s to work in a professional environment effectively. A-K

4. Allow students to research, develop, and produce a comprehensive project. A-K

5. Foster the students the ability to function in a team environment. I, J, K

6. Give the student’s ability to integrate and apply previous knowledge, skills, and experiences learned in major discipline and academic courses. A – K

*Capital letters after course goals reference the competencies of the Engineering Technology concentrations listed above.

V. Expected Student Learning Outcomes*:

Students will:

a. Demonstrate skills to be used in the work place. 1- 6

b. Employ welding process learned in previous classes into project design and fabrication. 1 – 6

c. Apply appropriate time management in completing tasks. 3, 5, 6

d. Work independently or together as a team. 5

e. Utilize library and internet research to plan, develop, and analyze a team based project. 4

f. Present final project formally to an evaluation committee or peer group. 3, 4, 5, 6
VI. Evaluation:

A. Testing Procedures:

The specific evaluation methods and focus will vary according to the course content.

Students can expect to be evaluated upon:

- Use of library, internet and industry resources for research
- Communication skills, both written and verbal
- Team effectiveness
- Technical knowledge
- Project results
- Final presentation

B. Laboratory Expectations:

n/a

C. Field Work:

n/a

D. Other Evaluation Methods:

n/a

E. Grading Scale:

90-100 A  
86-89 B+  
80-85 B  
76-79 C+  
70-75 C  
60-69 D  
0-59 F

VII. Policies:

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 95 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the
following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

C. Accommodations for disabilities:

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. Disability Services may be contacted by sending email to disabilityservices@pstec.edu, or by visiting Alexander 130. More information is available at http://www.pstcc.edu/sswd.