PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS
QUALITY & INSPECTION
WELD 1010

Class Hours: 3.0  Credit Hours: 4
Laboratory Hours: 3.0  Revised: Fall 2015

Catalog Course Description:

Introduction to the concepts of Quality Control, Total Quality Management and current methods used in industry to obtain accurate measurements of parts and components.

Entry Level Standards:

Students entering this course must have completed basic skills in reading comprehension, written communication, and mathematics.

Prerequisites: NONE

Corequisites: NONE

Textbook(s) and Other Course Materials:


I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapter</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Evaluation of Course Syllabus and Course Content</td>
</tr>
<tr>
<td>2</td>
<td>1 - 2</td>
<td>Introduction to Quality and Total Quality Management</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>Reading Engineering Drawings, Lines, Tolerances and rules to follow when using Engineering Drawings.</td>
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<tr>
<td>4</td>
<td>7 – 8</td>
<td>Geometric Dimensioning and Tolerance symbols and usage.</td>
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<tr>
<td>9 – 10</td>
<td>10</td>
<td>Surface Plate Inspection Methods</td>
</tr>
<tr>
<td>11 –12</td>
<td>11 – 12</td>
<td>Special Measuring Equipment and Techniques</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>Introduction to Statistical Process Control</td>
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</tbody>
</table>
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. Build student’s ability to identify the various methods used in obtaining accurate measurements of component parts used in industry. (D, G)

2. Expand student’s recognition of the need for quality control in manufacturing and terms used in industry. (H, I, J)

3. Enhance student’s ability to identify dimensioning systems used in industry. (A, E, I)

4. Develop and refine student’s skills in describing blueprint dimensions, tolerances and classes of fit help promote quality control programs in industry. (F, J)

5. Expand student’s use of layout equipment, inspection gauges and precision measuring instruments, such as micrometers, calipers, hole gauges, etc. (A, D, F, G, J)

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

V. Expected Student Learning Outcomes*:

Students will:

a. Utilize various precision instruments and gauges found in inspection departments to insure quality control procedures. 1-5

b. Utilize hands-on experience in inspection procedures using surface plate tools and equipment. 1

c. Interpret tolerances, allowances for various fits and layout procedures. 4

d. Use layout equipment, inspection gauges and precision measuring instruments. 5

e. Use small precision measurement tools such as micrometers, calipers, hole gauges, etc. 1, 5

f. Use surface plate equipment, height gauges, gauge blocks and the sine bar. 3

* Numbers after Expected Student Learning Outcomes reference the course goals listed above.

VI. Evaluation:

A. Testing Procedures:
Unit tests
Final comprehensive exam

B. Laboratory Expectations:

Homework
Lab work

C. Field Work:

D. Other Evaluation Methods:

E. Grading Scale:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>86-89</td>
<td>B+</td>
</tr>
<tr>
<td>80-85</td>
<td>B</td>
</tr>
<tr>
<td>76-79</td>
<td>C+</td>
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<tr>
<td>70-75</td>
<td>C</td>
</tr>
<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>0-59</td>
<td>F</td>
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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@pstcc.edu, or by visiting Alexander 130. More information is available at http://www.pstcc.edu/sswd/.

D. Other Policies:

Safety and Equipment Abuse:
Repeated safety violations will result in a reduction of final grade, at the instructor's discretion. Flagrant violations which result in equipment damage or personal injury could result in automatic failure of the course