Welding II
Course # WD4.152

Course Outline and Student Assignment Schedule (syllabus).

Welding II is a course designed to provide welding skill level expected in minor industrial applications. By building upon the basic skills developed in Welding I, the student will be given additional experience in out-of-position arc welding and introductions to the Gas Metal-Arc Welding and Gas Tungsten-Arc Welding processes.

1. **Required items furnished by the students:**
   - Clear Safety Glasses with sideshields*.
   - Leather welding gloves (with long gauntlet sleeves)
   - High Top Hard Top boots (no tennis shoes)
   - Suitable clothing that is non-flammable
   - Notebook or folder with paper (for taking notes).
   - Sidecutters or similar tool suitable for use with .045” diameter E70S-6 wire electrode
   
   Optional but recommended: Ear plugs

   *Note: Safety Glasses are required to be worn at all times in the shop, including under welding helmets, goggles, and face shields.

2. **Lectures:**
   - Technical information about welding and equipment will be presented in lectures at the beginning of each class meeting.

3. **Lab exercises:**
   - Horizontal, Vertical, and Overhead position welding with E7018 electrodes.
   - Out-of-position welding with E6010/E6011 electrodes.
   - GMAW Short Arc (MIG).
   - GMAW Spray Transfer.
   - Flux-Cored Arc Welding.
   - Gas-Tungsten Arc Welding (TIG).
   - Braze Welding.
   - Cast Iron Repair.
   - Air Carbon-Arc Cutting & Gouging.
   - Plasma Arc Cutting.

4. **Grading:**
   - Grading is based on evaluation of skill competency on lab assignments (Progress Card): 50% of final grade; Attendance: 20% of final grade; Quality of research evident in Homework Assignments: 15% of final grade; and Written Test Scores 15%.
   
   Tardies: One point will be subtracted from his or her final score each time the student is Tardy.
5. **Homework:**

The following items must appear on each homework assignment turned in, or a reduction of credit will be given for that assignment.

- Your Name
- Chapter Number and Name of Chapter (example: Chapter 25, "Gas Metal-Arc Welding").
- Questions due (example: Questions 1-25)
- Week turned in (example: Week 7).

Homework assignments will be accepted late, with possible reduction of credit for that assignment. New chapter starts on new page.

6. **Breaks and Cleanup:**

The instructor will announce the beginning of break time at each class session. The student is expected to return from break on time and ready to resume work. Students returning late from break will be marked Tardy.

The instructor will announce clean-up time at the end of each class session, and then this procedure should be followed by the student:

- Shut down welding equipment you are using.
- Return any tools used to the proper area.
- Return unused steel to the proper storage area.
- Place welded pieces in the scrap container (cool if necessary).
- Return welding rods over 2” in length to the proper box or tray in storage rack.
- Sweep off tabletop in welding booth, and place welding stool on table (right side up).
- Sweep floor of welding booth and put stubs and slag in metal garbage can

7. **Safety:**

The student is responsible to follow all safety rules and shop procedures, and to perform all tasks in a safe and conscientious manner. This includes wearing the required safety items (safety glasses, hard top, high top boots, etc.) during the lab time.

**Note:** The instructor will verbally warn the student when required safety items are not being worn in the shop, or when safety procedures are not being followed. **Upon the third verbal warning, the student may be withdrawn from the course by the instructor.**
**Disabilities Services and Emergency Planning – Meet with Instructor Week One**
If you have emergency medical information for your instructor, need special arrangements to evacuate campus, or have a documented disability, please meet with your instructor, by appointment, no later than the first week of the term, to discuss your needs. If you have a documented disability that will impact you at college and you seek accommodations, contact the Office of Disability Services (ODS) for intake and to document your disability with LBCC. Then, each term, at least two to three weeks prior to the start of classes, submit your “Request for Accommodations” form to ODS and pickup instructor letters. ODS may be reached from any LBCC campus/center by email to ODS@linnbenton.edu or by calling 917-4789. Letter pickup is available at each LBCC campus/center.

**LBCC Comprehensive Statement of Nondiscrimination**
LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws. (for further information http://po.linnbenton.edu/BPsandARs/)
All homework is required unless the student is choosing to officially Audit the course. To officially Audit the course, the student must complete and turn in an Audit Request Form to LBCC Registration no later than the deadline for this course which is the second Friday of the term.

Students who wish to take this course on an A through F Letter Grade basis or on a Pass / No Pass basis will need to complete the following 11 Homework Assignments and turn them in by Week 7 of the term. For extenuating circumstances, students may still turn in Homework Assignments through Week 8 of the term without a reduction in credit. Any Homework Assignments turned in after Week 8 will receive zero credit. Class time is not available for students to work on completing Homework Assignments during class.

Instructions for completing Homework Assignments: For each of the assignments below……
1. Read the chapter.
2. List what are, in your opinion, the 10 most important things that you learned from reading the chapter. Write down the information for each of these 10 most important things word-for-word in your own handwriting on a piece of 8-1/2" X 11" paper and number them 1 through 10. Also include the page number(s) where the information is located in the chapter that you are listing. Photocopies, typewritten, or computer-printer-generated homework assignments will not receive credit. Be sure to write your name on each piece of paper turned in. Staple into a stack in the same order as shown below and turn it in to instructor.

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapter Number</th>
<th>Chapter Name</th>
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<tbody>
<tr>
<td>2</td>
<td>Chapter 20* (for Spray Transfer section of chapter)</td>
<td>&quot;GMAW - Procedures&quot;: please concentrate specifically on information in the chapter pertaining to Spray Transfer welding.</td>
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<tr>
<td></td>
<td>Chapter 14</td>
<td>&quot;SMAW – Vertical Position&quot;: please concentrate specifically on information in the chapter pertaining to E7018 Electrode Welding Technique vertical-up.</td>
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<td>3</td>
<td>Chapter 22</td>
<td>&quot;Flux Cored Arc Welding&quot;.</td>
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<tr>
<td>4</td>
<td>Chapter 25</td>
<td>&quot;Cutting Operations&quot;: please make five of your answers pertaining to Plasma Arc Cutting, and the other five of your answers pertaining to Air Carbon Arc Cutting.</td>
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<tr>
<td>6</td>
<td>Chapter 40</td>
<td>&quot;Weldability of Tool Steels &amp; Cast Irons&quot;: please concentrate specifically on information in the chapter pertaining to Cast Iron and the welding of Cast Iron.</td>
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<tr>
<td>7</td>
<td>Chapter 20* (for Short Circuiting Transfer section)</td>
<td>&quot;GMAW - Procedures&quot;: please concentrate specifically on information in the chapter pertaining to Short Circuiting Transfer.</td>
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<td>Chapter 15</td>
<td>&quot;SMAW – Overhead Position&quot;.</td>
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<td>Chapter 17</td>
<td>&quot;GTAW – Procedures&quot;.</td>
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<td>Chapter 31</td>
<td>&quot;Destructive Testing&quot;.</td>
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<td>Chapter 32</td>
<td>&quot;Nondestructive Examination&quot;.</td>
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<td>Chapter 36</td>
<td>&quot;Welder Performance Qualification&quot;.</td>
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*NOTE: Chapter 20 appears twice above because two different subjects are assigned.

Written Exams: Written Mid-Term Exam and Written Final Exam.