

LABETTE COMMUNITY COLLEGE BRIEF SYLLABUS

SPECIAL NOTE:

This brief syllabus is not intended to be a legal contract. A full syllabus will be distributed to students at the first class session.

TEXT AND SUPPLEMENTARY MATERIALS USED IN THE COURSE (if any):

Please check with the LCC bookstore, <http://www.labette.edu/bookstore>, for the required texts for this class.

<u>COURSE NUMBER:</u>	WELD 240
<u>COURSE TITLE:</u>	Advanced Shielded Metal Arc Welding
<u>SEMESTER CREDIT HOURS:</u>	4
<u>DEPARTMENT:</u>	Welding
<u>DIVISION:</u>	Career Technical Education
<u>PREREQUISITES:</u>	WELD 140 Shielded Metal Arc Welding
<u>REVISION DATE:</u>	8/25/17

COURSE DESCRIPTION:

Through classroom and / or lab/ shop learning and assessment activities, students in this course will: describe the Shielded Metal Arc Welding process (SMAW); demonstrate the safe and correct set up of the SMAW workstation; associate SMAW electrode classifications with base metals and joint criteria; demonstrate proper electrode selection and use based on metal types and thickness; build pads of weld beads with selected electrodes in the vertical position; build pads of weld beads with selected electrodes in the overhead position; perform basic SMAW welds on selected weld joints; and perform visual inspection of welds.

COURSE OUTCOMES AND COMPETENCIES:

Students who successfully complete this course will be able to:

1. Demonstrate the process of Shielded Metal Arc Welding process (SMAW).
 - Demonstrate competence through a written or oral instructor-provided evaluation tool.
 - Differentiate between types and uses of current.
 - Identify the advantages and disadvantages of SMAW.
 - Identify types of welding power sources.
 - Identify different components of a SMAW station.
 - Describe basic electrical safety.

2. Demonstrate the proper inspection of equipment.

- Demonstrate competence in the lab or shop setting using SMAW equipment.
- Demonstrate proper inspection of equipment.
- Demonstrate proper use of PPE.
- Demonstrate proper placement of workpiece connection.
- Check for proper setup of equipment.
- Inspect area of potential hazards/safety issues.

3. Demonstrate proper use of PPE.

- Demonstrate competence through a written or oral instructor-provided evaluation tool.
- Explain the AWS electrode nomenclature.
- Determine proper electrode for given joint based on material and position of weld.
- Determine proper type of electrodes to be used in a variety of industry applications.
- Identify proper electrode storage and handling.

4. Demonstrate competence through written or oral instruction provided evaluation tool.

- Demonstrate competence in the lab or shop setting using SMAW equipment.
- Select the proper electrode type and size relative to metal size, type and thickness.
- Select the proper electrode type and size based on material specifications.

5. Demonstrate competence using SMAW equipment.

- Demonstrate competence in the lab or shop setting using SMAW equipment.
- Use the proper safety procedures and PPE.
- Use the proper setup procedures.
- Create a pad of beads using SMAW electrode.
- Weld exhibits proper uniformity and profile

6. Demonstrate successful groove weld in an overhead position.

- Demonstrate competence in the lab or shop setting using SMAW equipment.
- Use appropriate tools.
- Use the proper setup procedures.
- Use the proper safety procedures and PPE.
- Perform a fillet weld in vertical position.
- Perform fillet weld in an overhead position.
- Perform a groove weld in a vertical position.
- Perform a groove weld in an overhead position.
- Use tools appropriate for the task.

7. Demonstrate the ability to visualize discontinuities and defects on welds.

- Demonstrate competence in the lab or shop setting.
- Use appropriate inspection tools.
- Identify common visual discontinuities and defects on welds.
- Determine causes of discontinuities and defects of welds.
- Inspect welds for pass/fail ratings according to industry standards.
- Use appropriate inspection tools.