

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 140
<u>COURSE TITLE:</u>	Shielded Metal Arc Welding
<u>SEMESTER CREDIT HOURS:</u>	3
<u>DEPARTMENT:</u>	Welding
<u>DIVISION:</u>	Career Technical Education
<u>REVISION DATE:</u>	8/25/17

COURSE DESCRIPTION:

An extensive study into the technology of systems used in today's field of welding – manufacturing, construction, power/energy, transportation, fabrication and piping processes. The format is lecture, demonstration, student application and evaluation.

COURSE OUTCOMES AND COMPETENCIES:

Students who successfully complete this course will be able to:

1. The student will be able to explain the Shielded Metal Arc Welding process (SMAW)

- 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. The student will be able to demonstrate the safe and correct set up of the (SMAW) workstation

- Demonstrate proper inspection of equipment
- Demonstrate proper use of PPE
- Demonstrate proper placement of workpiece connection
- Check for proper setup of equipment
- Inspect area for potential hazards/safety issues

3. The student will be able to relate SMAW electrode classifications with base metals and joint criteria

- 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. The student will be able to demonstrate proper electrode selection and use based on metal types and thicknesses

- 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. The student will be able to build pads of weld beads with selected electrodes in the flat position

- 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. The student will be able to build pads of weld beads with selected electrodes in the horizontal position

- 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

7. The student will be able to perform basic SMAW welds on selected weld joints

- Use the proper setup procedures
- Use the proper safety procedures and PPE
- Perform a fillet weld in horizontal position
- Perform fillet weld in flat position
- Perform a groove weld in a flat position
- Perform a groove weld in a horizontal position
- Use tools appropriate for the task

8. The student will be able to perform visual inspection of welds

- 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 tools appropriate for the inspection