

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: WELD 101

Credit Hours: 4-3-3

Course Title: Survey of Welding

Course Prerequisites: READ 099; MATH 098;

Textbook: Modern Welding Common Cartridge - ISBN 978-1-63563-888-2: 12th edition, Goodheart Wilcox Publisher.

Course Description: Covers welding safety, welding equipment setup, drawing and welding symbol interpretation, welding inspection and testing, thermal cutting processes, and welding principles and practices for shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), and flux-core arc welding (FCAW).

Learning Outcomes:

At the end of this course, the student will:

- A. Demonstrate knowledge of occupational orientation skills including: working safely, preparing job reports, and following verbal and written instructions to complete work assignments;
- B. Demonstrate a fundamental knowledge of safety procedures
- C. Interpret welding symbols used in engineering drawings
- D. Recognize the principles of and demonstrate the ability to use thermal cutting processes
- E. Recognize the principles of and demonstrate the ability to use shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), and flux-core arc welding (FCAW) equipment.
- F. Recognize weld discontinuities visually

To achieve the learning outcomes, the student will or will be able to:

(The letter designations at the end of each statement refer to the learning outcome(s)).

- 1. Follow detailed verbal or written instructions given by the instructor to set up and carry out specific assignments. (A)
- 2. Perform general housekeeping duties to maintain workspace, equipment, and tool cleanliness. (A)
- 3. Fill out, maintain, and submit a timecard, or work assignment card, and other records as required by the institution. (A)
- 4. Follow safe practices in the performance of daily duties. (A)
- 5. Wear applicable Personal Protective Equipment (PPE) while performing, or being in the vicinity of welding and cutting activities. (B)
- 6. Follow procedures established to ensure the safety of the work area (B)

7. Be aware of the dangers associated with welding and brazing fumes, and use the best possible means of ventilation available for the capture of welding and brazing fumes as close to the source as possible. (B)
8. Follow established procedures and policies in the use of safety equipment. (B)
9. Perform fire safety inspections of the work area. (B)
10. Follow written instructions and precautions provided on applicable documentation for materials used in welding and cutting activities. (B)
11. Be aware of the purpose of precautionary labels and Safety Data sheets (SDSs) and refer to them for materials used in support of welding and cutting activities. (B)
12. Prepare an applicable bill of materials. (C)
12. Perform conversions of standard inch and metric measurements. (C)
14. Prepare parts from simple sketches or drawings. (C)
15. Prepare weld joints and perform welding operations using welding symbol information. (C)
16. Performs safety inspections of manual OFC equipment and accessories. (D)
17. Set up and operate manual and mechanized oxy-fuel cutting (OFC) and plasma arc cutting (PAC) equipment. (D)
18. Perform straight, square edge cutting operations on carbon steel. (D)
19. Perform shape, square edge cutting operations on carbon steel. (D)
20. Performs straight, bevel edge cutting operations on carbon steel. (D)
21. Perform scarfing and gouging operations to remove base and weld metal (D)
22. Perform safety inspections of welding and equipment and accessories. (E)
23. Set up equipment for welding on carbon steel. (E)
24. Make fillet and groove welds on carbon steel utilizing welding equipment. (E)
25. Examine cut surfaces and edges of prepared base metal parts. (F)
26. Examines tacks, root passes, intermediate layers, and completed welds. (F)
27. Identify weld discontinuities (F)

Course Requirements: Complete all homework assignments, in-class equipment exercises, in class tests, and final exam.

Course Grading Scale:

90–100 = A

80–89 = B

70–79 = C

60–69 = D

0 – 59 = F

Attendance Policy: The college attendance policy is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams and/or clinical fees.

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