

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Fabrication Welding
COURSE NUMBER	WELD 0265
DIVISION	Career and Technical Education
DEPARTMENT	WELD
CIP CODE	48.0508
CREDIT HOURS	4
CONTACT HOURS/WEEK	Class: 1 Lab: 6
PREREQUISITES	WELD 0100

COURSE DESCRIPTION

Through a variety of classroom and/or shop/lab learning and assessment activities, the students in this course will: learn to weld as in a shop setting. This includes project planning, layout, tacking, welding, and dealing with distortion of weldments. Students will end the class with a project that they may take home. Students will be required to supply materials for project.

PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:

https://kansasregents.org/workforce_development/program-alignment

PROGRAM LEARNING OUTCOMES

1. The student will be able to identify high risk areas that should be avoided by operators while automated machinery is running.
2. After completing the program, students will be able to exhibit a high-level of professionalism including appropriate dress, attendance, communication skills and other soft skills necessary
3. The student will be able to demonstrate the ability to successfully complete a welding project.

TEXTBOOKS

<http://kckccbookstore.com/>

METHOD OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE

- I. Project planning
 - A. Drawing/ sketching projects
 - B. Project estimation
 - 1. Materials
 - 2. Man hours
 - C. Weld procedure planning
 - 1. Size and type of weld
 - 2. Distortion and correction
- II. Preparing materials
 - A. Parts list
 - B. Layout of materials
 - C. Cutting materials
 - D. Cleaning and preparing for welding
- III. Welding
 - A. Tacking
 - B. Checking for project accuracy
 - C. Welding of projects
- IV. Project finishing
 - A. Post weld cleaning
 - B. Surface finish
 - 1. Paint
 - 2. Powder coating
 - 3. Texturing

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

- A. Produce a drawing and/or sketch that a project can be created from.
 - 1. Demonstrate ability to produce simple sketches for projects.
 - 2. Determine if sketch should be made into a proper print.
 - 3. Demonstrate ability to produce a drawing for a simple project.
- B. Determine welding procedure for a job.
 - 4. Determine best welding process for project.
 - 5. Create a weld procedure for project including machine settings and deposit rates.
 - 6. Determine total length and volume of weld needed for project.
- C. Estimate costs for projects.
 - 7. Figure lengths and types of materials needed.
 - 8. Obtain price quotes for materials needed.
 - 9. Determine amount and cost of weld consumables needed for project.
 - 10. Determine approximate man hours needed to complete a project.
 - 11. Create a quote that factors in all aspects of project including profit.

- D. Prepare materials for project.
 - 12. Create bill of materials for project.
 - 13. Lay out raw materials to make parts for project.
 - 14. Cut raw materials to size with maximum tolerance of 1/16".
 - 15. Prepare parts for assembly and welding.

- E. Successfully complete welding project.
 - 16. Layout parts and check to drawing.
 - 17. Fit up and tack parts together for sub-assemblies.
 - 18. Ensure that sub-assemblies are still correct to drawing.
 - 19. Weld sub-assemblies.
 - 20. Ensure that sub-assemblies are still correct to drawing.
 - 21. Remove any spatter or defects from sub-assemblies.
 - 22. Fit up and tack sub-assemblies for final assembly.
 - 23. Ensure that final assembly is still correct to drawing.
 - 24. Weld final assembly.
 - 25. Complete final fabrication inspection to ensure project is correct to drawing.

- F. Successfully complete project finishing.
 - 26. Clean up any spatter, defects, or burrs on project.
 - 27. Prepare project for final finish (paint, powder coat, abrasive texturing, etc.)
 - 28. Apply finish to project.
 - 29. Inspect project for proper finish/appeal.
 - 30. Touch up any flaws found during inspection.

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

College Catalog

<https://www.kckcc.edu/academics/catalog/index.html>

College Policies and Statements

<https://www.kckcc.edu/about/policies-statements/index.html>

Accessibility and Accommodations

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.