SYLLABUS

DATE OF LAST REVIEW: 02/2013
CIP CODE: 48.0508
SEMESTER: Departmental Syllabus
COURSE TITLE: Advanced SMAW
COURSE NUMBER: WELD0220
CREDIT HOURS: 4
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: Departmental Syllabus
EMAIL: KCKCC issued email accounts are the official means for electronically communicating with our students.

PREREQUISITES: WELD0120

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore, www.kckccbookstore.com, for the required texts for your particular class.

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 thicknesses; build pads of weld beads with selected electrodes in the Vertical position; build pads of weld beads with selected electrodes in the Over Head position; perform basic SMAW welds on selected weld joints; and perform visual inspection of welds.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. These may 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. SMAW welding in the vertical position
   A. Fillet welds (3F)
   B. Groove welds (3G)
II. SMAW welding in the overhead position
   A. Fillet welds (4F)
   B. Groove welds (4G)
III. Weld inspection
   A. SMAW visual inspection
      1. Visual inspection criteria
      2. Common discontinuities in vertical and overhead positions
   B. SMAW non destructive testing
      1. Ultrasound testing
      2. Radiograph testing
      3. Penetrant testing
      4. Magnetic particle testing

EXPECTED LEARNER OUTCOMES:
Upon successful completion of this course:
A. The student will be able to Demonstrate the safe and correct set up of the SMAW workstation.
B. The student will be able to Relate SMAW electrode classifications with base metal and joint criteria
C. The student will be able to Demonstrate proper electrode selection and use based on metal types and thicknesses
D. The student will be able to Build pads of weld beads with selected electrodes in the Vertical position
E. The student will be able to Build pads of weld beads with selected electrodes in the Over Head position
F. The student will be able to Perform SMAW welds on selected weld joints.
G. The student will be able to Perform visual inspection of welds

COURSE COMPETENCIES:
Demonstrate the safe and correct set up of the SMAW workstation.
1. Demonstrate proper inspection of equipment
2. Demonstrate proper use of PPE
3. Demonstrate proper placement of work piece connection
4. Check for proper setup of equipment
5. Inspect area for potential hazards/safety issues
Relate SMAW electrode classifications with base metals and joint criteria
6. Determine proper electrode for given joint based on material and position of weld
7. Determine proper type of electrodes to be used in a variety of industry applications
Demonstrate proper electrode selection and use based on metal types and thicknesses
8. Select the proper electrode type and size relative to metal size, type and thickness
9. Select the proper electrode type and size based on material specifications
Build pads of weld beads with selected electrodes in the Vertical position
10. Use the proper safety procedures and PPE
11. Use the proper setup procedures
12. Create a pad of beads using SMAW electrode
13. Weld exhibits proper uniformity and profile

**Build pads of weld beads with selected electrodes in the Over Head position**
14. Use the proper safety procedures and PPE
15. Use the proper setup procedures
16. Create a pad of beads using SMAW electrode
17. Weld exhibits proper uniformity and profile

**Perform basic SMAW welds on selected weld joints.**
18. Use the proper setup procedures
19. Use the proper safety procedures and PPE
20. Perform a fillet weld in Over Head position
21. Perform fillet weld in Vertical position
22. Perform a groove weld in a Vertical position
23. Perform a groove weld in a Over Head position
24. Use tools appropriate for the task

**Perform visual inspection of welds**
25. Identify common visual discontinuities and defects on welds
26. Determine causes of discontinuities and defects of welds
27. Inspect welds for pass/fail ratings according to industry standards
28. Use appropriate inspection tools

**ASSESSMENT OF LEARNER OUTCOMES:**
Student progress is evaluated by means that include, but are not limited to, exams, written assignments and class participation.

**SPECIAL NOTES:**
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome at any time.

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