

AWS SENSE Level 1

Welder Training

Syllabus

Instructor Randy Emery Phone 559-688-3180
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Office Tuesday and Thursday
Hours 9:30 to 11:00 AM

Student E-mail:

Each student has been given a College of the Sequoias official e-mail address. You will receive all information from COS and your instructor only through this address and you must use this e-mail address when sending e-mail to your instructor.

Text:

NCCER "Welding Level One" ISBN 10: 0-13-609967-X
NCCER "Welding Level Two" ISBN 10: 0-13-609970-X
Welding Print Reading ISBN 978-1-60525-911-6
By John R. Walker and W. Richard Polanin

Description:

The student welder will be guided through a standardized American Welding Society "SENSE" curriculum. The subjects covered will include the following. Module #1 Occupational Orientation, Module #2 Safety and Health of Welders, Module #3 Drawing and Welding Symbol Interpretation, Module #4 Shielded Metal Arc Welding, Module #5 Gas Metal Arc Welding, Module #6 Flux Cored Arc Welding, Module #7 Gas Tungsten Arc Welding, Module #8 Thermal Cutting Processes and Module #9 Welding Inspection and Testing. The student shall participate in our online training segment. This segment will take the student through the MSSC (Manufacturing Skills Standards Council) CPT certification training.

Goals:

- #1. The first goal of this training is to introduce the student to the welding and manufacturing industry. This introduction will show the important role welding plays in the industry and the related career opportunities for welders.
- #2. The second goal is for the student to be trained in the subjects listed in the course description. The student will receive training to become proficient in the common welding processes and related studies.
- #3. The third goal is for the student to be able to pass all training related testing and receive the AWS SENSE level 1 Entry Welder certification. As part of this goal all students shall also participate and complete MSSC training modules #1 and #2, Safety and Quality Practices and Measurement and be awarded certificates of completion of those two modules.

Course Schedule:

	Topic	Required Reading
#1. Date assigned #2. Date due	Occupational Orientation	Basic Communication Skills Basic Employability Skills Modules 00107-09 & 00108-09
#3. Date assigned #4. Date due	Safety and Health of Welders	Welding Safety Module 29101-09
#5. Date assigned #6. Date due	Drawing and Welding Symbol Interpretation	Welding Symbols Reading Welding Detail Drawings Modules 29101-09 & 29202-09
#7. Date assigned #8. Date due	Shielded Metal Arc Welding	SMAW Beads & Fillet Welds SMAW Groove Welds with Backing Modules 29109-09 & 29111-09
#9. Date assigned #10. Date due	Gas Metal Arc Welding	GMAW and FCAW Plate Module 29206-09
#11. Date assigned #12. Date due	Flux Cored Arc Welding	GMAW and FCAW Plate Module 29206-09
#13. Date assigned #14. Date due	Gas Tungsten Arc Welding	GTAW Plate Module 29208-09
#15. Date assigned #16. Date due	Thermal Cutting Process Modules 29102-09 Modules 29103-09 Modules 29104-09 Modules 29105-09	Oxy-Fuel, Base Metal Preparation, Plasma Arc Cutting, Air Carbon Arc Cutting and Gouging.
#17. Date assigned #18. Date due	Welding Inspection and Testing	Weld Quality Module 29106-09

Save all of your written work, throughout the course you may be asked to review any previous assignment. Your previous work will also be reference for the course final exam, and should be used for studying purposes.

Should you have to miss class for an extended period of time due to illness, jury duty, work, family emergencies, etc., notify your instructor immediately so individual arrangements can be made.

Syllabus additions and revisions

Revised: Additional training in Mathematics, Reading and Writing

The above syllabus section shall be revised to the following.

All students will be required to demonstrate proficiency in these basic skill subjects. All students will be required to attend additional training scheduled. The training schedule will vary depending on student majority progression through the course curriculum.

Addition: Student provided tools

All students shall provide needed hand tools and related devices listed on the "Welding Student Equipment and Tool List". Failure to acquire the listed tools will effect student course progression and final completion grades and certifications.

Addition: Contact information

To contact the instructor students shall use the following information in the order given.

- #1 E-mail your instructor at randye@cos.edu
- #2 Phone your instructor at 559-688-3180 leave voice mail
- #3 Phone you instructor at 559-285-1803 Cell phone

Addition: Text

The following text will be required for course participation.

Welding Print Reading 6th edition

By John R. Walker W. and Richard Polanin

Publisher Goodheart-Wilcox

ISBN 978-1-60525-911-6

Revised: Office hours

If a student needs to meet with the instructor outside of class meeting times, an appointment will be required.

Student Learning Outcomes
For
AWS SENSE “Entry Level” Welder Training & MSSC CPT Training Program

Upon the completion of AWS SENSE “Entry Level” training program a student shall learn and be able to perform the following.

1. A student will be able to interpret and demonstrate industrial based safe work habits.
2. Demonstrate their mastery of the theoretical scientific concepts of welding in both written examinations and applications of these theories through quality OFW welds.
3. Demonstrate proper set-up and adjustment of three types of fuel gases used in the OFW process.
4. Analyze and demonstrate advantages of three types of fuel gases used in the OFW process.
5. Perform quality OFW welds on carbon steel.
6. Apply the concepts of the SMAW process to welding of ferrous metals at an industrial “entry” level.
7. Research, identify, outline and present their findings of the SMAW process to industry standards.
8. Complete industry developed welding procedure sheet (WPS)
9. At the end of this course students will be able to diagnose problems and replace worn parts on a GMAW gun.
10. At the end of this course students will be able to demonstrate and apply industry level safety procedures.
11. At the end of this course students will be able to demonstrate industry level hand, eye coordination through the completion of laboratory assignments.
12. At the end of this course students will be able to explain and demonstrate the operation principles by setting up and adjusting the GMAW welding apparatus.
13. At the end of this course students will be able to demonstrate the application of principles of operation of all types of GMAW apparatuses available in class.
14. Upon completion students will be able to apply the concepts of GTAW to ferrous and nonferrous metals
15. Students will research and compose a research paper that identifies operating rules for GTAW.
16. Upon completion of this course students will be able to utilize welding procedure sheets to complete all welding lab assignments.

MSSC CPT

Student Learning Outcomes

Given instructor lectures, handouts, and demonstration, students will be able to demonstrate mastery of the core competencies of manufacturing production at the front-line (entry-level through front-line supervisor) through successful completion of two of the four certification assessments by undergoing a skill demonstration with an evaluative grade of "C" or better.

1. Skills demonstrations
2. Problem solving assignments or activities
3. Essay quizzes or exams
4. Multiple choice tests
5. Problem solving quizzes or exams

Given instructor lecture, handouts, and demonstration, students will be able to raise the level of performance of production workers both to assist the individuals in finding higher-wage jobs and to help employers ensure their workforce increases the company's productivity and competitiveness by undergoing a skill demonstration with an evaluative grade of "C" or better.

1. Skills demonstrations
2. Problem solving assignments or activities
3. Essay quizzes or exams
4. Multiple choice tests
5. Oral presentations
6. Problem solving quizzes or exams