



INSTITUTION: Highlands College

COURSE TITLE: Welding I, NCCER Level I*

COURSE NUMBER: WLDG170

COURSE CREDITS: 13

INSTRUCTOR: Dennis Noel

OFFICE HOURS:

Phone: 496-3748 Email: dnoel@mtech.edu
Office hours: Office hours by appointment

I COURSE DESCRIPTION

In Welding I, students will learn welding Safety, Oxy-Fuel cutting(OFC), Shielded Metal Arc Welding (SMAW), Joint-Fit Up and Alignment, Welding Position, Power Source Selection, and Terminology and Use of Measuring Devices. Students will also learn how to interpret welding symbols as they appear on engineering drawings or blueprint and weld the projects using the correct welding system and material. Students will also be introduced and reinforce their knowledge of different materials and how they react to the high heat of the welding process. Student competency will be based upon module tests and hands-on performance.

II COURSE MATERIALS

- NCCER Weld level I (Required) No used books!!!!
- Standard Welding tools
- Books must be purchased at the Montana Tech Bookstore.

The following will be needed for lab every day and every day that you do not have all of these items you will receive one day's absence:

- Welding hood
- Welding jacket
- Welding gloves
- Chipping Hammer
- Combination Square
- Sharpie
- 4 ½ inch grinder
- Welpers (Mig Pliers)



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- 2 Vise grips
- Wire brush
- Clear Safety Glasses
- Shade 5 Glasses
- Soapstone with holder or Grease pencil
- Striker
- Tape Measure
- Leather boots (steel-toed optional)
- Jeans that fit properly and without frays
- **DO NOT wear any polyester, wear 100% cotton or FR clothing!**

III COURSE OBJECTIVES

The students will be able to:

- Interpret and demonstrate welding safety.
 - Employ the oxy-fuel cutting (OFC) process.
 - Demonstrate the shielded Metal Arc Welding (SMAW) process.
 - Explain and interpret welding positions.
 - Interpret different power source selections.
 - Use different measuring instruments/devices.
 - Apply math skills.
 - Interpret measurements as required on engineering drawings.
 - Interpret the length, size, and contour of welds specified on a drawing, as well as the type of filler metals and welding procedures required.
 - Apply fit-up and weld an assembly given a drawing and a corresponding Bill of Materials.
- Note: all course objectives will be performed to AWS welding industry standards.**

IV COURSE OUTLINE

NCCER Weld Level 1 www.nccer.org/

- Module 1 Welding safety
- Module 2 Oxy-fuel cutting
- Module 3 Plasma arc cutting
- Module 4 Air carbon arc cutting and gouging
- Module 5 Metal preparation
- Module 6 Weld quality
- Module 7 SMAW – equipment and setup
- Module 8 Shielded metal arc electrodes
- Module 9 SMAW – Beads and fillet welds
- Module 10 Joint fit-up and alignment
- Module 11 SMAW groove welds with backer



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Module 12 SMAW – open V-groove

V. COURSE EVALUATION

1. ONLINE

The online portion of the course will consist of the theory components of NCCER Weld level 1 Modules. The module tests must be proctored at an approved testing facility. All tests must be passed at a 70% or higher in order to pass the module only one retest may be given per module. Practical portions of the modules will be completed in a lab setting.

2. Practical (Hands on)

You will attend the program 4 days a week, up to **6 hours** a day until you either complete all the performance tasks or until the 16 week period is up.

In order to continue on to 2nd semester and NCCER weld level II you must complete NCCER weld Level I which includes:

- Oxyfuel Cutting Performance Accreditation Tasks
- Plasma Arc Cutting Accreditation Tasks
- Air Carbon Arc Gouging Performance Accreditation Tasks
- Base Metal Preparation Performance Accreditation Tasks
- SMAW Welding Block with 6010 and 7018 in all positions
- SMAW Beads and Fillet Welds Performance Accreditation Tasks
- SMAW V-Groove Welds with Backing Performance Accreditation Tasks
- SMAW Open V-Groove Welds Performance Accreditation Tasks

NCCER Performance Tasks Sheets- After completing a performance task your sheet must be signed that day or you will have to repeat that task again. This is why it is important to bring your sheets every day.

1. Being prepared for class

Most of the material introduced in this class will likely be new to you therefore attendance is **required and expected**. Absenteeism is a leading cause of job loss, and college failure. That said, attendance is important, and poor attendance will result in lower grades. The classes in the Welding Technology Tier1 program are dependent on your participation during both lab, and classroom time.

Without explanation, some of the material may be very difficult for you to understand. Class time will also be of value in providing you with an opportunity to ask questions. **Keep in mind that class lectures will not be repeated for anyone regardless of the reason for absence.** If you miss class you are still responsible for any material discussed.



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Being prepared for class is just as important as being prepared for work. The following is what you need to have to be prepared:

1. Your BOOK
2. All Personal Protective Equipment (PPE)
3. A good attitude
4. #2 pencil

Assessments/Tests/Quizzes: 100% of final grade

- NCCER Weld Level One

You will be tested after each module of the book we will discuss. If you miss a test it is your responsibility to make that test up, if you do not make up the test you will receive a zero for test/tests that you missed which will then be averaged in to your final grade.

Grading Scale

- A 100 – 90
- B 89 – 80
- C 79 – 70
- F 69 – below

VI ATTENDANCE:

You will be graded daily any time you come in late or leave early you earn ½ of a day. Every 2 times you are late or leave early is equal to one absence. After 4 absences or equivalent during one semester, a student will be deemed a safety hazard, which will result in being removed from the program. If you do not call in, no assignment or test can be made up for that day(s).

There will be no radio, no cell phone, no I-pod or no listening to music by any means allowed while in the Classroom or Lab. This will result in a 0 for the day. You must stay busy, if you are not being productive or if there is any horseplay half a point will be deducted from your daily grade. Any disruptive student in classroom or lab will receive half a point and may be kicked out class for the day or for the semester.

Make-up Work- Make-up work will be allowed if you call in before class starts. There will be no lab make-up.

You will be responsible to make up work. **Don't ask me** what work you have to make-up look on your NCCER account.



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Failure You will be responsible for cleaning your booth and completing your shop title duties every day. Failure to comply will result in one day absence.

100% participation is paramount. Failure to participate is 1 day absents.
Leaving early for lunch and/or coming back late will result in ½ half a day

Horse play, vulgar language and outburst in class will not be tolerated at any time.
Repeated violations may subject you to being asked to leave the class and return when you can act responsibly. If you don't won't to comply you may be asked to withdraw from the program.

VII THE USE OF CELL PHONES

Cell phones will not be tolerated in the classroom or lab! Your focus needs to be on the material being presented and the tasks you will be doing. Turn your cell phones off before class and keep them off during class. Cell phones will be removed from the person violating this rule or the student will be asked to leave the class for the day.

VIII THE USE OF DRUGS AND ALCOHOL

Highlands College is a drug-free campus, meaning that the use or selling of any illegal drugs on campus (even if you have a medical marijuana card) is prohibited. Being under the influence of illegal drugs as well as some legal ones can pose a serious risk to the safety of everyone in a welding lab. If drug use is suspected that student will be asked to leave for that day in order to maintain a safe environment. The student will be referred to the Assistant Dean of Student Services for this infraction of the Student Code of Conduct (found in the Student Handbook) and possibly be dismissed from the welding program because of the threat to the safety of others. Smoking is not permitted on Campus.

IX PLAGIARISM AND ACADEMIC INTEGRITY

300.14 ACADEMIC HONESTY

The integrity of the academic process requires credit be given where credit is due. Accordingly, it is academic misconduct to present the ideas or works of another as one's own work, or to permit another to present one's work without customary and proper acknowledgment of authorship. Students may collaborate with other students only as expressly permitted by the instructor. Students are responsible for the honest completion and representation of their work, the appropriate citation of sources and the respect and recognition of others' academic endeavors.

300.42 DESCRIPTIONS AND EXAMPLES

D. Plagiarism

This is presenting the work of another as one's own without proper acknowledgment.

Examples of plagiarism include submitting as one's own work the work of another student, ghost writer or commercial writing service; directly quoting from a source without acknowledgment; paraphrasing or



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summarizing another's work without acknowledging the source; or using facts, figures, graphs, charts or information without acknowledging the source. Plagiarism may occur orally or in writing and may involve computer programs and files, research designs, distinctive figures of speech, ideas and images or any other

information that belongs to another person and is not acknowledged as such. Inadvertent or unintentional misuse or appropriation of another's work (such as relying heavily on source material that is not expressly acknowledged) is still considered plagiarism.

Please see the link below for more information and the entire policy.

http://www.msugf.edu/about/PoliciesProcedures/300/300_STUDENT_CONDUCT_AND_GRIEVANCE_002.pdf

Anyone caught cheating will be awarded a zero for that assignment or task up to dismissal from the program.

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