

## BOONE CAREER AND TECHNICAL CENTER WELDING SYLLABUS

<b>SCHOOL:</b>	Boone Career and Technical Center	<b>INSTRUCTOR:</b>	Timothy Fowler
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**COURSE DESCRIPTION** Welding is a leader of today's high tech approach to manufacturing. Students will learn several different welding processes including: shielded metal arc welding along with plasma cutting, air carbon arc cutting and oxy fuel cutting. This class is highly project oriented and predominately a hands-on class. The student will learn many welding related skills in the program.

**COURSE GOALS AND OBJECTIVES** This course will prepare students for an entry level position as a welder/fabricator along with articulation of credit to approve post-secondary institutions. This course is a two-year program with core welding techniques taught during the first year. The second year advances to more opportunities to perfect welding skills which includes the promotion of projects such as trailers, mining equipment and art projects. During the 2<sup>nd</sup> year, students will have the opportunity to obtain industry certifications.

Students will work toward assigned competencies to find employment, receive college articulation credit, and/or receive certification in a welding career. The student is expected to act in a professional and ethical manner at all times.

The following are the modules contained in the NCCER and AWS certification exam. By completing the Basic Safety and Welding Safety modules with a minimum of 100% score and the remainder of the modules with a 75% score, you will be eligible to participate in the practical welding exam to obtain the WV State certification.

### Core Curriculum Modules

- I. Basic Safety
- II. Introduction to Construction Math
- III. Introduction to Hand Tools
- IV. Introduction to Power Tools
- V. Introduction to Construction Drawings
- VI. Basic Communication Skills
- VII. Basic Employability Skills
- VIII. Introduction to Materials Handling

### Welding Level 1 Modules

- I. Welding Safety
- II. Oxy-fuel Cutting
- III. Plasma Arc Cutting
- IV. Air Carbon Arc Cutting and Gouging
- V. Base Metal Preparation
- VI. Weld Quality
- VII. SMAW-Equipment and Setup

- VIII. Shielded Metal Arc Electrodes
- IX. SMAW – Beads and Fillet Welds
- X. Joint Fit – Up and Alignment
- XI. SMAW Groove Welds with Backing
- XII. SMAW – Open V-Groove Welds
  - Welding Level 2 Modules
  - I. Welding Symbols
  - II. Reading Welding Detail Drawings
  - III. Physical Characteristics and Mechanical Properties of Metals
  - IV. Preheating and Post-heating of Metals

**ATTENDANCE  
POLICY AND  
GRADE  
REDUCTION**

Boone Career and Technical Center Places a high priority on attendance because the attendance pattern established by the student in school often sets an attendance pattern for employment. To benefit from the primary purpose of the school experience, it is essential that each student maintain regular and punctual attendance. Class attendance is necessary for learning and academic achievement as well as for developing the habits of **punctuality, dependability, and self-discipline demanded by business and industry.** Regular attendance in the Technology Center’s labs is essential to allow students to fully participate in class instruction, discussion and skill development. Absences beyond eight days per semester are considered excessive. Both excused and unexcused absences are charged in the student total.

Absences beyond eight (8) per semester are considered excessive. At eight (8) absences, excused or unexcused, the student will be called into a conference with the school counselor or principal. Each additional absence will require a conference with the school counselor or principal. The student will have an opportunity to make up the work, with credit, according to the Boone County Schools and WV Department of Education Policies.

Grading is based on testing and the evaluations of welds/cuts according to the NCCER and AWS SENSE curriculum. Participation will also be graded on a daily bases, unexcused absences are equal to 0%, excused and communicated with the teacher is equal to 50% of the total participation grade for that day, 20 points are possible each day.

**DRUG TESTING  
POLICY**

As a **Simulated Workplace** Boone Career and Technical Center has developed a drug testing program similar to those found in the welding industry. Each student will be subject to a drug test upon entering the welding program at Boone Career and Technical Center. Each month random drug test will be administered and approximately 10% of the students will be tested each month.

**CALL-IN POLICY**

Students will be required to notify the instructor in advance if they are planning to miss a day of class. If a student does not know in advance that they will be absent they will be required to call in using one of the following methods; call-in ((304)369-4585, writing it down on the absence calendar, or message the instructor on Schoology. Failure to provide advance notice or call in will be reflected on the student evaluation, and participation grade.

**STUDENT ASSESSMENT**

Student grades will be assigned according to the table below.

<b>A</b>	<b>93 – 100</b>
<b>B</b>	<b>85 – 92.9</b>
<b>C</b>	<b>75 – 84.9</b>
<b>D</b>	<b>65 – 74.9</b>
<b>F</b>	<b>0 – 64.9</b>

**CERTIFICATE / COURSE REQUIREMENTS**

Attendance and Class Participation  
Completion of All Assignments  
Completion of Assigned Readings and Work Sheets  
Following Safety and Clean – Up Duties

**CERTIFICATIONS**

- WV State Certification
- AWS (SENSE)
- NCCER Core and Welding Level 1
- CPR and First Aid
- OSHA 10 Hour
- Fork Lift Operator

**COURSE**

1<sup>st</sup> Year

**CALENDAR (Timeline for skills check offs) Students who attend regularly and possess determination should be on track with this skills check off timeline. If a student should fall behind they will be afforded the opportunity to make up any work they have missed or fell behind on.**

- Week 1 Basic and Welding Safety
- Week 2 Hand and Power Tools
- Week 4 Construction Math
- Week 6 Communication Skills
- Week 8 Employability Skills
- Week 9 Oxy Fuel Cutting and Construction Drawings
- Week 11 Plasma Arc Cutting and Ari Carbon Arc Cutting
- Week 12 Base Metal Preparations
- Week 13 Weld Quality and SMAW – Equipment and Setup
- Week 14 SMAW Electrodes
- Week 15 SMAW E6010 Flat Beads
- Week 16 SMAW E7018 Flat Beads
- Week 17 SMAW E6010 Padding Plate
- Week 18 SMAW E7018 Padding Plate
- Week 20 SMAW E6010 and E7018 1F Welds
- Week 22 SMAW E6010 and E7018 2F Welds
- Week 25 SMAW E6010 and E7018 3F Welds
- Week 28 SMAW E6010 and E7018 4F Welds
- Week 29 Joint Fit-Up and Alignment
- Week 31 SMAW E7018 1G Welds with Backing
- Week 33 SMAW E7018 2G Welds with Backing
- Week 35 SMAW E7018 3G Welds with Backing

**INSTRUCTOR INFORMATION**

Mr. Fowler has worked in the welding and fabricating industry for the past 15 years, In mining. During this time, Mr. Fowler has acquired vast knowledge and expertise in this area. Mr. Fowler is American Welding Society (AWS) certified welder in SMAW (plate/pipe) GMAW (plate/), FCAW (plate/pipe).

**LETTER TO THE STUDENT**

*Welding and Fabricating Student:*

*Welcome to the field of Welding and Fabrication. In this program you will be introduced to many of the welding and fabricating techniques being used in the industry today. This is a hands-on program where most of the instruction is based around class projects and practicing different welding techniques.*

*You will also be exposed to national certifications that will allow you to go immediately into the workforce with acquired credentials. The welding and fabrication fields have many yearly openings in this and the surrounding areas, as well as openings nationwide; giving accredited students career options across the nation. Welding and fabricating can be a very lucrative and rewarding career for the dedicated student. I look forward to teaching you the skills needed to obtain a career in the welding and fabricating field.*

*Sincerely,  
Timothy Fowler  
Secondary Welding Instructor*

**RESOURCES AND READINGS**

- NCCER Core Curriculum
- NCCER Welding Level 1
- NCCER Welding Level 2
- AWS Welding Journals

**The instructor reserves the right to make adjustment to this syllabus as needed.**

**Boone Career & Technical Center (BCTC) does not discriminate on the basis of race, color, religion, national origin, gender, sexual orientation, disability, age, or marital status in any of its policies, procedures or practices as required by Title IX, Section 504, and ADA regulations. For inquiries concerning Title IX, please contact the BCS Safe Schools Director Anthony Tagliente at 304-369-8276 or [ataglient@k12.wv.us](mailto:ataglient@k12.wv.us). For inquiries concerning 504/ADA, please contact the Director of Exceptional Children Mary Knapp, at 304-369-8245 or [mknapp@k12.wv.us](mailto:mknapp@k12.wv.us). Inquiries may also be submitted in writing to the following Director's at Boone County Schools 69 Avenue B Madison, WV 25130.**