

## Polaris Career Center Course Syllabus

Welding  
Adult

### Course Information

Instructor:	Johnny Napier	Phone:	440.891.7669
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		Room:	115
		Meeting Time:	September – June Monday through Thursday, 6:00 PM – 10:00 PM
		Availability:	5:00 - 5:30 PM, Monday through Thursday

### Course Description

The Polaris Career Center Welding program will teach the fundamentals of welding, the most common way of permanently joining metal parts, and the processes used to fabricate metal. The student will receive training in gas, arc, fluxcore, and MIG and TIG welding. Along with blueprint reading and welding symbols, the student will also learn how to use a grinder, drill, plasma arc cutter, burning torch, arc welder, and more. Careers that the student may pursue in the future include production welder, welder/pipe fitter, robotics technician, inspector, welding foreman, welding technician, and equipment sales person. The length of the program is 600 hours. The students entering the program should have background knowledge or experience in shop math, blueprint reading, metal working/technology, and general shop safety skills.

### Major Course Goals

The major goals of the Adult Welding program/course will ask students to:

1. Work safely in a metal working environment.
2. Perform the basic fundamentals of oxyacetylene welding and cutting.
3. Perform basic SMAW (Stick welding)
4. Perform the basic fundamentals of GTAW (tig welding) .
5. Perform the basic fundamentals of GMAW (mig) welding.
6. Perform the basic fundamentals of FCAW (flux-core) welding.
7. Secure an entry level position as a welder

### Instructional Philosophy

Students attend class four nights per week of which two nights are devoted to welding theory and two nights are devoted to the lab section of the course. During the theory portion, the assignments include reading the textbook, chapter review questions, review worksheets, written reports about welding machines, quizzes, and tests. The lab assignments require students to perform various welds on the five basic types of joints in all positions using SMAW (stick welding), GMAW (mig) welding, and GTAW (tig) welding. Student will primarily work independently in both theory and lab. All homework, handouts, class notes, reports, etc., will be kept in a notebook.

## **Course Units of Study**

The major units of study for welding theory and lab include:

- Introduction to Construction and Maintenance
- NCCER Job Training Core Curriculum Safety
- NCCER Job Training Construction Math
- NCCER Introduction to Hand Tools
- Introduction to Power Tools
- Introduction to Blue Prints
- Basic Rigging
- Basic Communication Skills
- Basic Employability Skills
- Oxyfuel Cutting, Welding, and Brazing
- Base Metal Preparations
- Weld Quality
- SMAW Equipment and Setup
- SMAW Electrodes and Selection
- Basic Electricity
- Welding Symbols Reading and Sketching
- Basic GTAW (tig) Welding
- Basic GMAW (mig) Welding
- Basic Flux-core Arc Welding

## **Primary Curriculum Materials**

NCCER Core Curriculum Introduction to Construction and Maintenance Text  
NCCER Welding Level 1 Text  
Modern Welding Text

## **Business and Industry Credentials, Certifications, and/or Licenses**

NCCER diploma Welding Level I  
Polaris Career Center certificate of completion  
AWS D1.1 certification for structural steel (welding)

## **Course Projects and Special Activities**

The course prepares the student for NCCER (National Center for Construction Education and Research) Certifications and Diplomas. Students will be prepared to take applicable American Welding Society certification tests. Students who finish the program will have the skills to obtain an entry level welding position and/or an apprenticeship.

## **Course Policies**

### **Code of Conduct:**

The published Code of Conduct for Polaris Career Center can be found in the Adult Student Handbook and will be enforced at all times. Students should refer to the Handbook for discussions of due process and safety violations.

### **Dress and Grooming Guidelines:**

The District's adult dress code is established to reflect the educational environment that must be maintained by all students. All students working in the lab must wear safety glasses and appropriate welding clothing and boots. Adult students should refer to their handbook for explicit explanations.

**ID:**

Not applicable.

**Attendance/Tardiness:**

Students must maintain 90% attendance; tardy hours will be deducted from student total hours.

**Make-up Work:**

All lab assignments and tests missed work must be completed in the classroom. Exceptions will be permitted by the instructor.

**Computer Usage:**

Computers will not be used this class.

**Infinite Campus:**

N/A

**Syllabus Changes:**

The instructor/Polaris Career Center Administration reserves the right to make changes to this syllabus throughout the year.

**Course Assessment Plan**

Grades will be determined by a Total Points method based on:

Classroom Assignments	33%
Tests	33%
Lab tests	34%

**Grades for the course will be based on the following levels of performance:**

<b>Grade</b>	<b>Description</b>
<b>A</b> (90-100%)	Work is correct with only minor flaws (not having to do with the main idea of the problem). The concepts presented in class were understood and were appropriately applied to real-world examples. All assignments were completed on-time and were of a work quality.
<b>B</b> (80-89%)	Work was done with a few flaws. The concepts presented in class were applied with help. Almost all tasks and assignments were completed on-time and demonstrated with sufficient skills
<b>C</b> (70-79%)	Some difficulty was had understanding class concepts or applying concepts to real-world situations. Some assignments were late.
<b>D</b> (60-69%)	Only some of the work was completed for class. Work completed was frequently late or was of low quality with errors and omissions.
<b>F</b> (0-59%)	Did not complete a significant amount of work for the class. Work had major errors and did not meet standards.