**Introduction to Metals**

**Instructor**

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**Course description**

This introductory course is designed to provide information and skills in welding and fabrication. Students will explain and demonstrate safety procedures in oxy-acetylene cutting, heating, and gas welding, Gas Metal Arc Welding (GMAW-S), Shielded Metal Arc Welding (SMAW), Flux Core Arc Welding (FCAW) procedures on metal and other related safety working conditions in the welding field.. Time will be spent in lecture and in the lab developing skills related to manufacturing (welding) careers.

**Standards**

STL, State and National Common Core Standards

Standard 2,7,12, 18, 19,20

**Grade Levels:**

* 9-12

**Course Level:**

* Introductory

**Course Length:**

* 20 weeks

**Pathways:**

* Manufacturing

**Course Type:**

* Career-Technical Preparation

**Topics**

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| [Careers in Welding Technology](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21172) | [Inspection and Quality Control](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21179) | [SMAW -Shielded Metal Arc Welding](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21187) |  |  |
| [Welding Systems and Tools](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21173)  | [Grinding and Finishing Processes](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21180) | [FCAW Flux Core Arc Welding](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21188) |  |
| [Metal Characteristics and Identification](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21175) | [Manual plasma cutting](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21181) | [GMAW Gas Metal Arc Welding](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21189) |  |
| [Tools](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21174) | [Welding Positions and Joints](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21183) | [GTAW Gas Tungsten Arc Welding](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21190) |  |
| [Measuring](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21176) | [Oxy-Fuel Welding and Processes](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21184) | [Projects-Beginning Level](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21193) |  |
| [Planning and Layout Operations](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21177) | [Processing Materials](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21185) | [Projects-Advanced Level](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21194) |  |
| [Blueprint Reading](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21178) | [Welding Assembly Processes](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21186) | [Safety](https://www.cteonline.org/curriculum/outline/welding-technology-model/cMb2Kf#outline-unit-21171) |  |
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