METAL CHARACTERISTICS & PROPERTIES
Course Syllabus

Course Number: WELD-0381  
OHLAP Credit: No

OCAS Code: None
Course Length: 30 Hours
Career Cluster: Manufacturing
Career Pathway: Welding and Metal Fabrication
Career Major(s): Combination Welder, Welding Fabricator

Pre-requisite(s): This course is an introduction to physical characteristics, mechanical properties, composition and classification of common ferrous and nonferrous metals. The course covers visual inspection, and x-ray fluorescent spectrometry methods used to identify metals.

Textbooks/Materials:
- Math for Welders, Marion and Nino, GoodHeart-Willcox (2001)

Course Objectives:
A. Demonstrate an Understanding of the Physical Characteristics and Mechanical Properties of Metals
   1. Identify metals by physical characteristics and shapes
   2. Identify welding discontinuities
   3. Test metals using various techniques
   4. Explain the preheat process and identify preheat temperatures

1 NOCTI Job Readiness Assessment, Welding

Teaching Methods:
The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

Grading Procedures:
1. Students are graded on theory and shop practice and performance.
2. Each course must be passed with seventy (70%) percent or better.
3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.
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Description of Classroom, Laboratories, and Equipment: Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

Available Certifications/College Credit: The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Oklahoma State University-Okmulgee or Tulsa Community College. See program counselor for additional information.

College Credit Eligibility: The student must maintain a grade point average of 2.0 or better.