



VOCATIONAL TRAINING
INSTITUTE

VTI Welding Training Program

Objective: The school's Welding Training Program provides training for entry level welding apprenticeship in the welding field, working with students to obtain skills needed to complete the required certifications for their welding careers.

Description: Students who enroll in the welding course acquire the skills and knowledge associated with a variety of welding techniques and practices. Students learn over the 287 clock hours to perform many types of welding positions such as 1F, 2F, 3F, and 4F. Students also learn techniques for 1G, 2G, 3G and 4G welding applications. In addition, students receive the OSHA 10 Safety Survey Card as well their Vocational Training Institute Diploma.

Purpose: This program introduces students to fundamentals of the welding trade. VTI provides lecture lessons accompanied by textbooks and Power Point presentations in our classrooms and hands on welding in our laboratory. VTI emphasizes welding practices and procedures to exemplify the most current welding practices with emphasis on safety.

Topical Outline: This program consists of the following courses designed to assist students in developing their skills and knowledge in the welding trade:

Course Number	Course Name	Hours
COR 108	Basic Employability Skills	17
COR 101	OSHA 10-hour Safety	10
COR 105	Introduction to Construction Drawings	5
COR 107	Basic Communication Skills	5
WELD 101	Introduction to Welding	5
WELD 102	Oxyfuel Cutting	20
WELD 105	Base Metal Preparations	12
WELD 106	Weld Quality	10
WELD 108	SMAW Electrodes and Uses	3
WELD 109	SMAW Beads and Fillet Welds	72
WELD 110	Joint Fit up and Alignment	8
WELD 111	SMAW-Groove Welds with Backing	60
WELD 112	SMAW-Groove Open Root Welds Plate	60

COR 101: OSHA 10 Safety (Hours: 10)

This course complies with Osha 10 training requirements and explains the safety obligation of workers, supervisors, and managers to ensure safe work practices in the construction trades. This course discusses the causes and results of accidents and the impact of accident costs.

COR 105: Introduction to Construction Drawings (Hours: 5)

Students are introduced to the different types of plans and how they are represented a finished building. This course shows the parts of blueprints in detail, including symbols, the title block, and gridlines with special emphasis on welding blueprints and symbols.

COR 107: Basic Communication Skills (Hours: 5)

Students are provided with techniques for communicating effectively with co-workers, employers and potential employees, through concepts of attitude, work ethic, teamwork, telephone skills and interpersonal skills.

COR 108: Basic Employability Skills (Hours: 17)

This course identifies the roles of individuals and companies in the welding and construction industry. Students are introduced to critical thinking and problem-solving skills, and computer systems and their industry applications.

WELD 101: Introduction to Welding (Hours: 5)

Students are provided with basic knowledge in welding practices, the trade of welding and apprentice programs. Student will also be oriented to the welding laboratory and facilities and learn the different processes in welding applications and identification of hazards in the welding industry.

WELD 102: Oxyfuel Cutting (Hours: 20)

This module introduces students to the methods and procedures of the oxyfuel cutting process. Students will learn safety procedures, equipment setup, fuel gas types, flow rates, and techniques. Hands-on practice and the completion of cutting-related performance tasks complete the learning process.

WELD 105: Base Metal Preparations (Hours: 12)

Introduces the students to the methods and procedures related to preparing base metal for welding. Students will learn safety procedures, welding joint preparation, specifications, identification of physical characteristics, mechanical properties, and cleaning techniques related to common base metals.

WELD 106: WELD Quality (Hours: 10)

Introduces students to the methods and procedures to produce high quality welds. Students will become familiar with welding codes and provisions, discontinuities, examination practices, and weld procedure testing. Students will then complete a visual inspection on a fillet and/or groove weld and complete an inspection report to document the results.

WELD 108: SMAW Electrodes and Uses (Hours: 3)

Introduces the students to the selection, classification, and use of electrodes for arc welding. Students will become familiar with the various types of electrodes, their uses, identification, handling, and proper storage.

WELD 109: SMAW Beads and Fillet Welds (Hours: 72)

Introduces the methods and procedures related to SMAW beads and fillet welding. Students will learn safety procedures, equipment setup, how to strike an arc, and how to produce weave beads and stringer beads. Hands on practice and the completion of welding related performance tasks complete the learning process.

WELD 110: Joint Fit-Up and Alignments (Hours: 8)

Introduces the students to the techniques and procedures to perform proper joint fit-up and inspection. Students will become familiar with using codes, specifications, special tools, and measuring devices to ensure quality during welding.

WELD 111: SMAW-Groove Welds with Backing**(Hours: 60)**

Introduces the students to the method of procedures related to the SMAW groove welding process. Students will learn safety procedures, welding joint preparation, specifications, identification of physical characteristics, mechanical properties, and cleaning techniques of SMAW groove welds.

WELD 112: SMAW-Groove Welding Open Root Welds Plate**(Hours: 60)**

Introduces students to the methods and procedures of SMAW open-root groove welding process. Students will learn about safety procedures and groove joint preparation, and practice open-root groove welding techniques.