WELDING
Welding Technology Major

TECHNOLOGY & WORKFORCE DEVELOPMENT DIVISION

Program of Study

The Welding Technology Program offers instruction in a wide range of topics, from oxyfuel and plasma arc cutting applications to advanced courses in pipe welding.

With the increased use of sophisticated welding equipment and exotic commercial alloys, a need exists for technicians who can coordinate the efforts of the highly skilled welder and the welding engineer. The person performing this function must be broadly educated in welding theory, welding processes, welding symbols and prints, welding codes and standards, welding metallurgy, mathematics and science. Terra's associate in applied science degree program is structured to provide this background.

A well equipped laboratory supports the theoretical instruction with hands-on instruction in the modern welding processes.

The faculty has identified the following Learning Outcomes for all graduates:

- Correctly apply and interpret welding symbols and prints.
- Select proper welding processes, equipment and accessories, and follow appropriate welding procedures required to manufacture or fabricate materials in accordance with engineering design.
- Develop a high degree of knowledge and skill in selecting and utilizing the major welding processes in all four welding positions on a variety of commercial ferrous and nonferrous alloys on sheet, plate, tubing and/or piping, as well as other structural shapes requiring welding.
- Utilize industrial codes, standards and specifications whenever and wherever they apply to specific jobs or projects.
- Be familiar with destructive testing methods and how they are used to verify engineering design data and also to qualify and certify materials, processes, procedures and personnel responsible for performing them.
- Be familiar with nondestructive testing methods and how they are used to determine the soundness of materials, components, and engineered products.
- Be knowledgeable in welding metallurgy and heat treating principles and how they apply to the modern day workforce.

Associate of Applied Science

TECHNICAL CONCENTRATION

			Credit Hrs.
EET	1050	Electricity	3
MET	1080	Manufacturing Systems	3
MFG	1020	Safety	1
QCT	1020	Blueprint Reading	2
WET	1135	SMAW Welding Theory	2
WET	1140	SMAW Welding Lab	2
WET	2435	GMAW and GTAW Welding Theory	2
WET	2445	GMAW Welding Lab	2
WET	2555	GTAW Welding Lab	2
WET	2660	Advanced Materials Joining Systems	3
WET	2670	Welding Codes and Procedures	3
		*Technical Elective	2-3
		*Pipe Welding Elective OR	2
		EBE 2980, Cooperative Education Seminar *and*	1
		WET 2980, Co-op Work Experience	1
		Total Technical Credit Hours	**29-30**

GENERAL EDUCATION AND RELATED COURSES

GEN	1000	First-Year Seminar	1
CAD	1110	CAD I	3
CIT	1090	Computer Fundamentals	3
ENG	1050	College Composition I	3
ENG	1900	Technical Writing for Business and Industry	3
MGT	2300	Process Improvement & LEAN Manufacturing	3
MTH	1150	Mathematics for the Trades	4
PHY	1060	Survey of Physics	3
PHY	1065	Survey of Physics Lab	1
		*SPE Elective	3
		*Social Science Elective	3
		*Humanities Elective	3
		Total General Education & Related Credit Hours	**33**
		TOTAL CREDIT HOURS	**62-63**

* **See page 95 for a listing of specific electives.**
See your advisor for appropriate course selection.

For available Certificate Program options, see catalog pages 97-103.

** All students graduating from Terra State Community College with an Associate degree of any kind will be functionally proficient in common computer operations and applications. Please see your academic advisor or academic division office for further details.

To determine when courses are scheduled, see program curriculum sheet which is available from the Enrollment Services office in Building A/Room 100, from the Technology and Workforce Development Division office, Building E, Room 107 or on the web at www.terra.edu.

POTENTIAL OCCUPATIONS:

- Welder/Fabricator
- Millwright
- Welding Technician
- Welding Inspector
- Welder/Pipefitter