

**Water and Wastewater Management and Technology Short-Term Certificate** 150506 W&M

Available: Shoals Campus  
 Advisors: S. McGouyrk (5246) [stevem@nwsc.edu](mailto:stevem@nwsc.edu)  
 M. Murphy (6246) [docm@nwsc.edu](mailto:docm@nwsc.edu)

This short-term certificate is designed to prepare students for employment in positions related to water and wastewater. Also, see the A.S. Degree program.

**Entering students are required to complete ORI 101. Transfer students are exempt from this requirement.**

	Semester		Hours
	Theory	Lab	
WMT 100 Water Supply and Wastewater Control	3	0	3
WMT 101 Introduction to Water Treatment Processes	3	0	3
WMT 102 Introduction to Wastewater Treatment Processes	3	0	3
WMT 120 Sanitary Chemistry and Biology	3	0	3
WMT 213 Water and Wastewater Instrumentation and Controls	3	0	3
WMT 214 Basic Hydraulics for Water and Wastewater Technology	3	0	3
WMT 290 Industrial Internship I or WMT 291 Municipal Internship I or CIS Elective	0	15	3
<b>Total Semester Credit Hours</b>			<b>21</b>

**Welding AOT Degree**

Available: Shoals Campus  
 Advisors: W. Garner (5254) [wgarner@nwsc.edu](mailto:wgarner@nwsc.edu)  
 J. Hackworth (5335) [joehackworth@nwsc.edu](mailto:joehackworth@nwsc.edu)  
 L. Liles (8072) [lliles@nwsc.edu](mailto:lliles@nwsc.edu)

Students desiring to receive the AOT Award must complete all major certificate courses, one minor certificate course of study, and the required credit hours of general education courses in Areas I, II, III, and IV. Upon completion of all the courses listed, students are eligible to receive the Associate in Occupational Technology Degree. Students desiring to take general education courses for transfer to another institution should consult an advisor for proper general education course selection.

**Core Degree Requirements for the Associate in Occupational Technology Degree**

**Entering students are required to complete ORT 100. Transfer students are exempt from this requirement.**

	Semester Hours
Area I: Written Composition ..... English Composition I and/or Technical Writing	3
Area II: Humanities and Fine Arts	3
Area III: Natural Science and Mathematics ..... A minimum of 3 hours in degree creditable mathematics is required. The additional 6 hours of degree creditable coursework may be taken from disciplines of math, biology, chemistry, physical science, physics, environmental technology and computer science.	9
Area IV: History, Social and Behavioral Sciences ..... Courses may be taken from the disciplines of history, economics, geography, political science, psychology, and sociology.	3

**Minimum General Requirements ..... 18**

Major Requirements	Semester Hours
WDT 108 SMAW Fillet/OFC	3
WDT 109 SMAW Fillet/CAC	3
WDT 110 Industrial Blueprint Reading	3
WDT 115 GTAW Carbon Pipe Theory	3
WDT 119 Gas Metal Arc/Flux Cored Arc Welding Theory	3
WDT 120 Shielded Metal Arc Welding Groove Theory	3
WDT 122 SMAW Fillet/OFC Lab	3
WDT 123 SMAW Fillet/PAC/CAC Lab	3
WDT 124 Gas Metal Arc/Flux Cored Arc Welding Lab	3
WDT 125 Shielded Metal Arc Welding Groove Lab	3
WDT 155 GTAW Carbon Pipe Lab	3
WDT 182 Special Topics	3
WDT 184 Special Topics	1
WDT 217 SMAW Carbon Pipe Theory	3
WDT 218 Certification Theory	3
WDT 228 Gas Tungsten Arc Welding Theory	3
WDT 257 SMAW Carbon Pipe Lab	3
WDT 268 Gas Tungsten Arc Lab	3
<b>Total Major Requirements</b>	<b>48-52</b>

**Minor Requirements**

**Machine Shop Technology 309999 WMS**

MSP 101 Basic Machining Technology .....	5
MSP 102 Intermediate Machining Technology .....	5
MSP 121 Basic Blueprint Reading for Machinists .....	2
<b>Total Minor Requirements .....</b>	<b>12</b>

**Minor Requirements**

**Air Conditioning/Refrigeration Technology 309999 WAC**

ACR 111 Refrigeration Principles .....	3
ACR 115 Heating Systems .....	3
ACR 132 Residential Air Conditioning .....	3
ACR 133 Domestic Refrigeration .....	3
<b>Total Minor Requirements .....</b>	<b>12</b>

**Minor Requirements**

**Automotive Service Technology 309999 AUT**

AUM 133 Motor Vehicle Air Conditioning .....	3
AUM 101 Fundamentals of Automotive Technology .....	3
AUM 121 Braking Systems .....	3
AUM 110 Electrical and Electronic Systems I .....	3
<b>Total Minor Requirements .....</b>	<b>12</b>

**Minor Requirements**

**Carpentry Technology 309999 WCR**

CAR 121 Introduction to Blueprint Reading .....	3
CAR 134 Stairs, Moldings, and Trim .....	3
CAR 226 Metal Framing .....	3
CAR 217 Estimating .....	3
<b>Total Minor Requirements .....</b>	<b>12</b>

<b>General Requirements .....</b>	<b>18</b>
<b>Total Requirements for AOT Degree .....</b>	<b>78</b>

\*Computer competency skills are embedded within one or more courses required in this curriculum.

**Welding  
Career Certificate**

**480508 WEL**

Available: Shoals Campus  
 Advisor: W.Garner (5254) [wgarner@nwsc.edu](mailto:wgarner@nwsc.edu)  
 J. Hackworth (5335) [joehackworth@nwsc.edu](mailto:joehackworth@nwsc.edu)  
 L. Liles (8072) [lliles@nwsc.edu](mailto:lliles@nwsc.edu)

This certificate is designed to develop the skills necessary to enter and maintain a job in the welding field. Students should develop the skills necessary to pass a certification test that meets the requirements of the American Welding Society (AWS) D1.1 code. Applicants are not required to have completed any particular subject prior to enrollment. Welders need to have good eye-hand coordination, and they need to be in good physical condition. Welding is used in fabrication shops, construction, maintenance, ship building, aircraft, automotive, electrical, and machine shops. Welding is a tool of all trades. The welding field is rapidly expanding, requiring a continually increasing volume of technical knowledge and skills on the part of the operator.

**Entering students are required to complete ORT 100. Transfer students are exempt from this requirement.**

	<b>Semester</b>		
	<b>Theory</b>	<b>Lab</b>	<b>Hours</b>
COM 100 Introductory Technical English I	3	0	3
MAH 101 Introductory Mathematics I	2	2	3
WDT 108 SMAW Fillet/OFC	3	0	3
WDT 109 SMAW Fillet/PAC/CAC	3	0	3
WDT 110 Industrial Blueprint Reading	3	0	3
WDT 115 GTAW Carbon Pipe Theory	3	0	3
WDT 119 Gas Metal Arc/Flux Cored Arc Welding Theory	3	0	3
WDT 120 Shielded Metal Arc Welding Groove Theory	3	0	3
WDT 122 SMAW Fillet/OFC Lab	0	3	3
WDT 123 SMAW Fillet/PAC/CAC Lab	0	3	3
WDT 124 Gas Metal Arc/Flux Cored Arc Welding Lab	0	3	3
WDT 125 Shielded Metal Arc Welding Groove Lab	0	3	3
WDT 155 GTAW Carbon Pipe Lab	0	3	3
WDT 217 SMAW Carbon Pipe Theory	3	0	3
WDT 218 Certification Theory	3	0	3
WDT 228 Gas Tungsten Arc Welding Theory	3	0	3
WDT 257 SMAW Carbon Pipe Lab	0	3	3
WDT 268 Gas Tungsten Arc Lab	0	3	3

**Total Semester Credit Hours .....** 54

\*\*Transfer Credit: Students may receive up to one semester of Advanced Placement for Career Technical coursework completed at another institution.

\*\*\*A high school diploma or GED is not required for admission to this program. Students must be at least 16 years old to enroll.

**Basic Welding Technology 480508 WDT**  
**Short-Term Certificate**

Available: Shoals Campus  
 Advisors: W. Garner (5254) [wgarner@nwsc.edu](mailto:wgarner@nwsc.edu)  
 J. Hackworth (5335) [joehackworth@nwsc.edu](mailto:joehackworth@nwsc.edu)  
 L. Liles (8072) [lliles@nwsc.edu](mailto:lliles@nwsc.edu)

This short-term certificate is designed to prepare students for immediate employment. Students are provided with technical knowledge and job specific skills that enable them to compete favorably in the welding field.

Opportunities for welders exist in the business services industry, manufacturing, repair and production work, construction, machinery maintenance, wholesale trade and automobile vehicle industry.

Welders need good eyesight, good eye-hand coordination, and manual dexterity. They should be able to concentrate on detailed work for long periods of time and be able to bend, stoop, and work in awkward positions. Welders need to be adaptable to receive cross-training for other production jobs.

**Entering students are required to complete ORT 100. Transfer students are exempt from this requirement.**

	Semester		
	Theory	Lab	Hours
WDT 108 SMAW Fillet/OFC	3	0	3
WDT 109 SMAW Fillet/PAC/CAC	3	0	3
WDT 110 Industrial Blueprint Reading	3	0	3
WDT 119 Gas Metal Arc/Flux Cored Arc Welding Theory	3	0	3
WDT 122 SMAW Fillet/OFC Lab	0	3	3
WDT 123 SMAW Fillet/PAC/CAC Lab	0	3	3
WDT 124 Gas Metal Arc/Flux Cored Arc Welding Lab	0	3	3
WDT 218 Certification Theory	3	0	3

**Total Semester Credit Hours ..... 24**

\*\*Transfer Credit: Students may receive up to one semester of Advanced Placement for Career Technical coursework completed at another institution.

\*\*\*A high school diploma or GED certificate is not required for admission to this program. Students must be at least 16 years old to enroll.

**Wood Products Technology 480799 WOD**  
**Short-Term Certificate**

Available: Phil Campbell and Shoals Campuses  
 Advisor: J. Glasgow (6371) [jimmyglasgow@nwsc.edu](mailto:jimmyglasgow@nwsc.edu)  
 B. Jackson (6389)

This short-term certificate is designed to prepare individuals in industry, high school or college for entry level to advance positions with in a company. By selecting one or more of the following options, the trainee will develop proficiency in specialized areas of the secondary woodworking industry. Those areas are: Production, Finishing, Set-Up Technician, Design Software and CNC Machining Software.

Admission to this program does not require a high school diploma or GED. Individual course may be taken not leading to a certificate if the individual desires.

**Entering students are required to complete ORT 100. Transfer students are exempt from this requirement.**

**Production Option**

The Production option will prepare students for entry level production employment in the secondary wood manufacturing industry.

	Semester		
	Theory	Lab	Hours
WOD 100 Intro. to Secondary Wood Manufacturing Technology	2	3	3
WOD 110 Intro. to Comp. & Special Design Software	2	3	3
WOD 118 Intro. to Specialized Operational Software	2	3	3
WOD 120 Intro. to Maintenance	2	3	3
WOD 130 Intro. to Solid Lumber Processing	2	3	3
WOD 140 Intro. to Panel Processing	2	3	3
WOD 160 Intro. to Wood Science	2	3	3
WOD 180 Entry Level Special Topics	0	9	3

**Total Semester Credit Hours ..... 24**

**Finishing Option**

The Finishing option will prepare students for entry level finishing employment in the secondary wood manufacturing industry.

	Semester		
	Theory	Lab	Hours
WOD 100 Intro. to Secondary Wood Manufacturing Technology	2	3	3
WOD 120 Intro. to Maintenance	2	3	3
WOD 130 Intro. to Solid Lumber Processing	2	3	3
WOD 150 Intro. to Production Finishing	2	3	3
WOD 155 Intermediate Production Finishing	2	3	3
WOD 160 Intro. to Wood Science	2	3	3
WOD 170 Intro. to Veneer/Laminate	2	3	3
WOD 180 Entry Level Special Topics	0	9	3

**Total Semester Credit Hours ..... 24**