

Air Conditioning/Refrigeration Technology Career Certificate 150501 ACR

Available: Shoals Campus
 Advisors: J. Hackworth (5335) joehackworth@nwsc.edu

The health, comfort, and productivity of any nation is dependent upon air conditioning and refrigeration equipment. Air conditioning has become a necessity rather than a luxury in today's homes, offices, public buildings, and industries.

Air Conditioning/Refrigeration Technology covers the practical application of planning, installing, and servicing heating, air conditioning and refrigeration equipment in residential and commercial establishments.

The increased use of air conditioning and refrigeration in homes and work environments provides growing job opportunities in transportation, food preservation, manufacturing, space programs, medical services, and many others.

Transfer Students: Students may receive up to one semester for clock hours and credit units earned at another institution.

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

	Semester		
	Theory	Lab	Hours
COM 100 Introductory Technical English I	3	0	3
MAH 101 Introductory Mathematics I	2	2	3
ACR 111 Refrigeration Principles	2	3	3
ACR 112 HVACR Service Procedures	2	3	3
ACR 113 Refrigeration Piping Practices	1	5	3
ACR 119 Fundamentals of Gas Heating Systems	1	5	3
ACR 121 Principles of Electricity for HVACR	2	3	3
ACR 122 HVACR Electrical Circuits	2	3	3
ACR 123 HVACR Electrical Components	2	3	3
ACR 126 Commercial Heating Systems	2	3	3
ACR 132 Residential Air Conditioning	2	3	3
ACR 135 Mechanical/Gas/Safety Codes	2	3	3
ACR 148 Heat Pump System I	1	5	3
ACR 181 Parallel Refrigeration	2	3	3
ACR 203 Commercial Refrigeration	1	5	3
ACR 205 System Sizing and Air Distribution	2	3	3
ACR 209 Commercial Air Conditioning	2	3	3
ACR Elective			6
Total Semester Credit Hours	57		

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

Automotive Collision Repair AOT Degree

Available: Shoals Campus
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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. Math must be 100 or higher. 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
ABR 111 Non-Structural Repair	3
ABR 114 Non-Structural Panel Replacement	3
ABR 122 Surface Preparation	3
ABR 123 Paint Application & Equipment	3
ABR 151 Safety & Environmental Practices	3
ABR 154 Auto Glass and Trim	3
ABR 156 Auto Cutting and Welding.....	3
ABR 157 Plastic Repairs	3
ABR 213 Automotive Structural Analysis	3
ABR 214 Automotive Structural Repair	3
ABR 223 Automotive Mechanical Components	3
ABR 224 Automotive Electrical Components	3
Electives	6
Total Major Requirements	42

Minor Requirements

Business Management and Supervision **309999**

BUS 241 Principles of Accounting I or	
ACT 141 Basic Accounting Principles	3
BUS 275 Principles of Management	3
BUS 285 Principles of Marketing	3
BUS 279 Small Business Management	3
Total Minor Requirements	12

Minor Requirements

Welding **309999 ABW**

WDT 111 Cutting Processes Theory	2
WDT 151 Cutting Processes Lab	2
WDT 112 Shielded Metal Arc Fillet Theory	2
WDT 152 Shielded Metal Arc Fillet Welding	3
WDT Elective	3
Total Minor Requirements	12

Minor Requirements

Auto Mechanics **309999 ABA**

AUM 101 Fundamentals of Automotive Technology	3
AUM 111 Automotive Electrical Systems	3
AUM 112 Starting Charging Systems and Accessories	3
AUM Elective	3
Total Minor Requirements	12

General Requirements	18
Total Requirements for AOT Degree	75

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

Automotive Collision Repair 470603 ABR Career Certificate

Available: Shoals Campus
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 J. Hackworth (5335) joehackworth@nwsc.edu

Automotive collision repair has expanded throughout the country to become a major field of automotive work. Repairing damages and restoring the original beauty of an automobile requires the work of a master craftsman. Working conditions and employment opportunities are excellent and will continue to grow.

This Automotive Collision Repair program is designed to train students to repair an automobile correctly, economically, and safely. The program includes technology, welding, mathematics, shop safety, metal straightening, panel replacement, interior trim and body refinishing, auto electricity, glass replacement, frame straightening, fiber glass repair, and damage estimations. The student will learn how to become an automobile repair person with skills that include all phases of auto collision repair.

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

	Semester		
	Theory	Lab	Hours
COM 100 Introductory Technical English I	3	0	3
MAH 101 Introductory Mathematics I	2	2	3
ABR 111 Non-Structural Repair	1	4	3
ABR 114 Non-Structural Panel Replacement	1	4	3
ABR 122 Surface Preparation	1	4	3
ABR 123 Paint Application and Equipment	1	4	3
ABR 151 Safety and Environmental Practices	1	4	3
ABR 154 Automotive Glass and Trim	1	4	3
ABR 156 Cutting and Welding	1	4	3
ABR 157 Automotive Plastic Repairs	1	4	3
ABR 213 Automotive Structural Analysis	1	4	3
ABR 214 Automotive Structural Repair	1	4	3
ABR 223 Automotive Mechanical Components	1	4	3
ABR 224 Automotive Electrical Components	1	4	3
ABR 255 Steering & Suspension	1	4	3
ABR 258 Heating and AC in Collision Repair	1	4	3
ABR 261 Restraint Systems	1	4	3
ABR 265 Paint Defects and Final Repairs	1	4	3
ABR 266 MIG Welding in Collision Repair (Aluminum)	1	4	3
Total Semester Credit Hours			57

*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.

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

Basic Automotive Collision Repair Short-Term Certificate

470603 AUC

Available: Shoals Campus
 Advisors: E. Reid (5231) ereid@nwsc.edu
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This short-term certificate prepares students with technical knowledge and skills that allow them to become employed as automotive collision repairers. The students learn to straighten bent bodies, remove dents, and replace crumpled parts that are beyond repair. Most of the work is on cars and small trucks.

This career offers variety and challenges. Automotive Collision repairers use special equipment to restore damaged metal frames and body sections. They may specialize in one type of repair, such as frame straightening, door and fender repair and glass installation.

Good reading and basic math skills and computer skills are essential to becoming a fully skilled automotive collision repairer. Automotive parts, body materials, and electronics continue to change and become more complex and technologically advanced. Gaining new skills, reading technical manuals, and attending seminars and classes are important for keeping up with these technological advances.

This short-term certificate does not require a high school diploma or GED certificate for admission. Students must be at least 16 years of age to enroll.

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

	Semester		
	Theory	Lab	Hours
ABR 111 Non-Structural Repair	1	4	3
ABR 122 Surface Preparation	1	4	3
ABR 123 Pait Application & Equip.	1	4	3
ABR 151 Safety & Environmental Practices	1	4	3
ABR 154 Auto Glass Trim	1	4	3
ABR 156 Automotive Cutting and Welding	1	4	3
ABR 213 Automotive Structural Analysis	1	4	3
ABR 214 Automotive Structural Repair	1	2	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.

Automotive Service Technology AOT Degree

Available: Shoals Campus
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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 3 English Composition I and/or Technical Writing
Area II:	Humanities and Fine Arts 3
Area III:	Natural Science and Mathematics 9 A minimum of 3 hours in degree creditable mathematics is required. Math must be 100 or higher. 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.
Area IV:	History, Social and Behavioral Sciences 3 Courses may be taken from the disciplines of history, economics, geography, political science, psychology, and sociology.

Minimum General Requirements	Semester Hours
Major Requirements	
AUM 101 Fundamentals of Automotive Technology	3
AUM 110 Electrical and Electronic Systems I	3
AUM 121 Braking Systems	3
AUM 122 Steering, Suspension and Alignment	3
AUM 124 Engine Repair I	3
AUM 130 Drive Train and Axles	3
AUM 133 Motor Vehicle Air Conditioning	3
AUM 210 Electrical and Electronic Systems II	3
AUM 224 Manual Transmission and Transaxle	3
AUM 230 Auto Transmission and Transaxle	3
AUM 239 Engine Performance	3
AUM 246 Automotive Emissions	3
AUM 244 Engine Performance II	6
AUM Electives	
Total Major Requirements	45