

AIR CONDITIONING TECHNOLOGY

DIPLOMA PROGRAM

The Air Conditioning Technology diploma program prepares students for careers in the air conditioning industry. Learning opportunities develop academic, occupational, and professional knowledge and skills required for job acquisition, retention, and advancement. The program emphasizes a combination of air conditioning theory and practical applications necessary for successful employment. Program graduates receive an Air Conditioning Technology diploma and have the qualifications of an air conditioning technician.

ASSOCIATE DEGREE OPTION

Individuals who are graduates of, or eligible to graduate from, this diploma program and who meet general admission requirements for associate-degree level work may pursue an associate of applied science degree in Technical Studies by completing an additional 50 quarter credit hours of coursework. Interested students should see their advisors to obtain assistance in completing processes associated with readmission and/or change of major.

CAREER OPPORTUNITIES

Heating and cooling system mechanics install and repair heating, air conditioning, and refrigeration systems in homes, schools, and commercial buildings. They work on equipment ranging from window air conditioners and home heating units to large, complex systems in plants and factories. Duties include diagnosing problems, setting up components such as motors and pumps, connecting parts such as air ducts and blowers, and connecting equipment to a power source.

Program graduates qualify for positions as heating and air conditioning technicians, heating and cooling system mechanics, commercial refrigeration technicians, maintenance technicians for apartment complexes or industrial facilities, sales representatives, and counter sales personnel at heating, air conditioning, or refrigeration suppliers.

PROGRAM EXPENSES

The recent reauthorization of the Higher Education Act requires all colleges and universities to notify students and prospective students of all program costs for which they will be responsible. Students will be responsible for the following expenses:

- Quarterly tuition (\$45 per credit hour)
- Quarterly student activity fees (\$16)
- Quarterly registration fee (\$26)
- Quarterly accident insurance fee (\$4)
- Quarterly instructional and technology supply fee (\$35)
- Program supply fee (\$130 for Air Conditioning Technology, \$40 for Air Conditioning Electrical Technician, and \$45 for Air Conditioning Systems Maintenance)
- Textbooks (Approximately \$800 for Air Conditioning Technology, \$150 for Air Conditioning Electrical Technician, and \$350 for Air Conditioning Systems Maintenance)
- Tools (Approximately \$800 for Air Conditioning Technology, \$200 for Air Conditioning Electrical Technician, and \$400 for Air Conditioning Systems Maintenance)

The expenses are based on costs in effect at the time this catalog was published. Prices are subject to change.

ADMISSION REQUIREMENTS

Applicants must submit the following information to the Admissions Office:

- a. Completed and signed application for admission and a \$20 nonrefundable application fee;
- b. Valid COMPASS, ASSET, SAT, or ACT test scores (see *ASSET and COMPASS Placement Tests*); and
- c. High school diploma or GED not required for admission, but must be obtained within two quarters or the completion of 25 quarter credit hours of coursework, whichever comes later (see *General Admission Requirements*).

AIR CONDITIONING TECHNOLOGY CURRICULUM OUTLINE
Diploma Program (Major Code: AI02)
Credit Required for Graduation: 85 quarter credit hours

			Credits
General Core			13
EMP	1000	Interpersonal Relations and Professional Development	3
ENG	1010	Fundamentals of English I	5
MAT	1012	Foundations of Mathematics	5
 Technical Major			 72
ACT	100	Refrigeration Fundamentals	4
ACT	101	Principles and Practices of Refrigeration	7
ACT	102	Refrigeration Systems Components	7
ACT	103	Electrical Fundamentals	7
ACT	104	Electric Motors	4
ACT	105	Electrical Components	5
ACT	106	Electric Control Systems and Installation	4
ACT	107	Air Conditioning Principles	8
ACT	108	Air Conditioning Systems and Installation	3
ACT	109	Troubleshooting Air Conditioning Systems	7
ACT	110	Gas Heating Systems	5
ACT	111	Heat Pumps and Related Systems	6
IFC	100	Industrial Safety Procedures	2
SCT	100	Introduction to Microcomputers	3

AIR CONDITIONING ELECTRICAL TECHNICIAN
Technical Certificate of Credit Program (Major Code: AIR1)
Credit Required for Completion: 20 quarter credit hours

			Credits
Technical Certificate			20
ACT	103	Electrical Fundamentals	7
ACT	104	Electric Motors	4
ACT	105	Electrical Components	5
ACT	106	Electrical Control Systems and Installation	4

AIR CONDITIONING SYSTEMS MAINTENANCE TECHNICIAN CURRICULUM OUTLINE
Technical Certificate of Credit Program (Major Code: ACM1)
Credit Required for Completion: 20 quarter credit hours

			Credits
Technical Certificate			20
ACT	100	Refrigeration Fundamentals	4
ACT	101	Principles and Practices of Refrigeration	7
ACT	103	Electrical Fundamentals	7
IFC	100	Industrial Safety Procedures	2

AIR CONDITIONING TECHNOLOGY

Department Code: ACT

ACT 100 Refrigeration Fundamentals (3-2-4) Banner Title: Refrigeration Fundamentals

This course introduces the basic concepts and theories of refrigeration. Topics include the laws of thermodynamics, pressure and temperature relationships, heat transfer, the refrigeration cycle, and safety. Students must pay a \$5 supply fee when registering for this course.

Prerequisite: Provisional admission

Offered Fall and Spring terms on the Athens campus

Offered quarterly on the Walton campus

ACT 101 Principles and Practices of Refrigeration (5-5-7) Banner Title: Refrigeration Principles

Faculty introduce students to the use of refrigeration tools, materials, and procedures needed to install, repair, and service refrigeration systems. Topics include piping practices, service valves, leak testing, refrigerants, evacuation, and charging. Students must pay a \$30 supply fee when registering for this course.

Prerequisite/Corequisite: ACT 100

Offered Fall and Spring terms on the Athens campus

Offered quarterly on the Walton campus

ACT 102 Refrigeration Systems Components (5-5-7) Banner Title: Refrigeration Systems

Components

Students learn to install, test, and service major components of refrigeration systems in this course. Topics include compressors, condensers, evaporators, metering devices, service procedures, refrigeration systems, and safety practices. Students must pay a \$10 supply fee when registering for this course.

Prerequisite/Corequisite: ACT 101

Offered Spring and Summer terms on the Athens campus

Offered quarterly on the Walton campus

ACT 103 Electrical Fundamentals (5-5-7) Banner Title: Electrical Fundamentals

Program instructors introduce fundamental electrical concepts and theories as applied to the air conditioning industry. Topics include AC and DC theory, electric meters, electric diagrams, distribution systems, electrical panels, voltage circuits,

code requirements, and safety practices. Students must pay a \$10 supply fee when registering for this course.

Prerequisite: Provisional admission

Offered Winter and Summer terms on the Athens campus

Offered quarterly on the Walton campus

ACT 104 Electric Motors (2-5-4) Banner Title: Electric Motors

Students continue to develop the skills and knowledge necessary for application and service of electric motors commonly used by the refrigeration and air conditioning industry. Topics include diagnostic techniques, capacitors, installation procedures, electric motor types and service, and safety practices. Students must pay a \$10 supply fee when registering for this course.

Prerequisite/Corequisite: ACT 103

Offered Spring term on the Athens campus

Offered quarterly on the Walton campus

ACT 105 Electrical Components (3-5-5) Banner Title: Electrical Components

Students learn to identify, install, and test commonly used electrical components in air conditioning systems. Topics include thermostats, pressure switches, overload devices, transformers, magnetic starters, other commonly used controls, diagnostic techniques, and installation procedures. Students must pay a \$10 supply fee when registering for this course.

Prerequisite/Corequisite: ACT 103

Offered Winter and Summer terms on the Athens campus

Offered quarterly on the Walton campus

ACT 106 Electric Control Systems and Installation (2-5-4) Banner Title: Electrical Control Systems

Instructors provide instruction on wiring various types of air conditioning systems. Topics covered include servicing procedures, electronic controls, system wiring, and control circuits. Students must pay a \$10 supply fee when registering for this course.

Prerequisite/Corequisite: ACT 105

Offered Spring and Summer terms on the Athens campus

Offered quarterly on the Walton campus

ACT 107 Air Conditioning Principles (6-4-8) Banner Title: Air Conditioning

Principles

Instructors introduce the fundamental theory and techniques needed to identify major components and functions of air conditioning systems. They provide instruction

on types of air conditioning systems and the use of instrumentation. Topics include heat-load calculation, properties of air, psychometrics, duct design, air filtration, and safety principles. Students must pay a \$5 supply fee when registering for this course.

Prerequisite/Corequisite: ACT 102

Offered Fall term on the Athens campus

Offered quarterly on the Walton campus

ACT 108 Air Conditioning Systems and Installation (2-3-3) Banner Title: AC Systems/Installation

Students learn to install and service residential air conditioning systems. Topics include installation procedures, split-systems, add-on systems, packaged systems. Students must pay a \$10 supply fee when registering for this course.

Prerequisites/Corequisites: ACT 102, ACT 106

Offered Fall term on the Athens campus

Offered quarterly on the Walton campus

ACT 109 Troubleshooting Air Conditioning Systems (5-5-7) Banner Title: Troubleshooting AC

Systems

This course provides instruction on troubleshooting and repairing major components of residential air conditioning systems. Topics include troubleshooting techniques, electrical controls, airflow, refrigeration cycle, and safety practices. Students must pay a \$10 supply fee when registering for this course.

Prerequisite/Corequisite: ACT 108

Offered Spring term on the Athens campus

Offered quarterly on the Walton campus

ACT 110 Gas Heating Systems (2-8-5) Banner Title: Gas Heating Systems

ACT 110 introduces principles of combustion and service requirements for gas heating systems. Topics include service procedures, electrical controls, piping, gas valves, venting, code requirements, principles of combustion, and safety practices. Students must pay a \$10 supply fee when registering for this course.

Prerequisite/Corequisite: ACT 106

Offered Winter term on the Athens campus

Offered quarterly on the Walton campus

ACT 111 Heat Pumps and Related Systems (3-7-6) Banner Title: Heat Pumps and Related

Systems

Students receive instruction on the prin-

ciples, applications, and operations of residential electric heating systems, heat pumps, and related systems. Topics include installation and servicing procedures, troubleshooting, valves, electrical components, geothermal ground source energy supplies, and dual fuel systems. Students must pay a \$10 supply fee when registering for this course.

Prerequisites/Corequisites: ACT 102, ACT 106

Offered Winter term on the Athens campus

Offered quarterly on the Walton campus

EMPLOYABILITY SKILLS

Department Code: EMP

EMP 1000

Interpersonal Relations and Professional Development (3-0-3)

Banner Title: Interpersonal Relations

Students study human relations and professional development in today's changing world in order to prepare themselves for living and working in a complex society. Topics include human relations skills, job acquisition skills and communications, job retention skills, job advancement skills, and professional image skills.

Prerequisite: Provisional admission

Offered quarterly

ENGLISH

Department Code: ENG

ENG 1010

Fundamentals of English I (5-0-5)

Banner Title: Fundamentals of English I

This course emphasizes the development and improvement of written and oral communication abilities. Topics include analysis of writing techniques, applied grammar and writing skills, editing and proofreading skills, research skills, and oral presentation skills.

Prerequisites: ENG 097 with a grade of C or better and RDG 097 with a grade of C* or better or placement by diagnostic testing*

Offered quarterly

INDUSTRIAL TECHNOLOGIES FUNDAMENTAL CORE

Department Code: IFC

IFC 100

Industrial Safety Procedures (2-1-2)

Banner Title: Industrial Safety

Procedures

This course provides an in-depth study of the health and safety practices required for maintenance of industrial, com-

mercial, and home electrically operated equipment. Topics include OSHA regulations, safety tools, equipment, procedures, and first aid and cardiopulmonary resuscitation.

Prerequisite: Provisional admission

Offered quarterly

MATHEMATICS

Department Code: MAT

MAT 1012

Foundations of Mathematics (5-0-5)

Banner Title: Foundations of Mathematics

This course emphasizes the mathematical skills that can be applied to the solution of occupational and technical problems. Topics include properties of numbers, fractions, decimals, percents, ratios and proportions, measurement and conversions, formula manipulation, technical applications, and basic statistics.

Prerequisite: MAT 097 with a grade of C or better or placement by diagnostic testing*

Offered quarterly

SCIENCE AND TECHNOLOGY

Department Code: SCT

SCT 100

Introduction to Microcomputers (1-4-3)

Banner Title: Intro to Microcomputers

This course introduces the fundamental concepts and operations necessary to use microcomputers. Course content emphasizes basic functions and familiarity with computer use. Topics include computer terminology and an introduction to the Windows environment, networking, word processing, spreadsheets, presentation graphics, and databases.

Prerequisite: Provisional admission

Offered quarterly