

DEKALB TECHNICAL COLLEGE
Clarkston Campus and Covington Campus

**AIR CONDITIONING TECHNOLOGY
FOUR-QUARTER DIPLOMA**

The Air Conditioning Technology Program is a sequence of courses that prepares students for careers in the air conditioning industry. Learning opportunities develop academic, technical, and professional knowledge and skills required for job acquisition, retention, and advancement. The program emphasizes a combination of air conditioning theory and practical application necessary for successful employment. Program graduates have the qualifications of air conditioning technicians.

<u>Course Number</u>	<u>Course</u>	<u>Class Hours</u>	<u>Lab Hours</u>	<u>Total Hours</u>	<u>Credit Hours</u>	<u>Prerequisites/Corequisites</u>
FIRST QUARTER						
ACT 100	Refrigeration Fundamentals	30	20	50	4	
ACT 101	Principles and Practices of Refrigeration	40	60	100	7	ACT 100
IFC 100	Industrial Safety Procedures	20	10	30	2	
MAT 101	General Mathematics	50	0	50	5	*
SCT 100	Introduction to Microcomputers	<u>10</u>	<u>40</u>	<u>50</u>	<u>3</u>	
	TOTAL	150	130	280	21	
SECOND QUARTER						
ACT 102	Refrigeration Systems Components	40	60	100	7	ACT 100, ACT 101
ACT 103	Electrical Fundamentals	50	50	100	7	ACT 102, MAT 101
ACT 104	Electric Motors	20	50	70	4	ACT 103
EMP 100	Interpersonal Relations and Professional Development	<u>30</u>	<u>0</u>	<u>30</u>	<u>3</u>	
	TOTAL	140	160	300	21	
THIRD QUARTER						
ACT 105	Electrical Components	20	60	80	5	ACT 103, ACT 104
ACT 106	Electric Control Systems and Installation	20	50	70	4	ACT 105
ACT 107	Air Conditioning Principles	70	30	100	8	ACT 102, 106, 110, MAT 101
ACT 110	Gas Heating Systems	<u>20</u>	<u>60</u>	<u>80</u>	<u>5</u>	ACT 102, ACT 106, MAT 101
	TOTAL	130	200	330	22	
FOURTH QUARTER						
ACT 108	Air Conditioning Systems and Installation	20	30	50	3	ACT 107
ACT 109	Troubleshooting Air Conditioning Systems	30	90	120	7	ACT 108, ENG 100
ACT 111	Heat Pumps & Related Systems	40	60	100	6	ACT 110
ENG 100	English	<u>50</u>	<u>0</u>	<u>50</u>	<u>5</u>	*, See catalog for pre-reqs
	TOTAL	140	180	330	21	

*Approved admission level English, Reading and/or Mathematics competency required.

CIP CODE: 47.020102

MAJOR CODE: AI02

REQUIRED CREDIT HOURS: 85

10/07

The curriculum is subject to change to meet changing conditions. As set forth in its catalog, DeKalb Technical College does not discriminate on the basis of race, color, creed, national or ethnic origin, gender, religion, disability, age, veteran status, or citizenship status (except in those special circumstances permitted or mandated by law).

COURSE DESCRIPTIONS

ACT 100 – REFRIGERATION FUNDAMENTALS (4)
Introduces basic concepts and theories of refrigeration. Topics include: the laws of thermodynamics, pressure and temperature relationship, heat transfer, the refrigeration cycle, and safety.

ACT 101 – PRINCIPLES AND PRACTICES OF REFRIGERATION (7)
Prerequisite/Corequisite: ACT 100
Introduces the use of refrigeration tools, materials and procedures needed to install, repair, and service refrigeration systems. Topics include: service valves, leak testing, evacuation, charging refrigerants, piping, fittings, and safety.

ACT 102 - REFRIGERATION SYSTEMS COMPONENTS (7)
Prerequisite/Corequisites: ACT 100, ACT 101
Provides the student with the skills and knowledge to install, test, and service major components of a refrigeration system. Topics include: compressors, condensers, evaporators, metering devices, service procedures, refrigeration systems, and safety.

ACT 103 - ELECTRICAL FUNDAMENTALS (7)
Introduction to fundamental electrical concepts and theories as applied to the air conditioning industry. Topics include: A/C and D/C theory, electric meters, electric diagrams, distribution systems, electrical panels, voltage circuits, code requirements, and safety.

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ACT 104 - ELECTRIC MOTORS (4)
Prerequisite/Corequisite: ACT 103
Continues the development of skills and knowledge necessary for application, and service of electric motors commonly used by the refrigeration and air conditioning industry. Topics include: diagnostic techniques, installation procedures, capacitors, types of electric motors, electric motor service, and safety.

ACT 105 - ELECTRICAL COMPONENTS (5)
Prerequisites/Corequisites: ACT 103, ACT 104
Provides instruction in identifying, installing, and testing commonly used electrical components in an air conditioning system. Topics include: pressure switches, overload devices, transformers, magnetic starters, other commonly used controls, diagnostic techniques, installation procedures, and safety.

ACT 106 - ELECTRIC CONTROL SYSTEMS AND INSTALLATION (4)
Prerequisite/Corequisite: ACT 105
Provides instruction on wiring various types of air conditioning systems. Topics include: servicing procedures, solid state controls, system wiring, control circuits, and safety.

ACT 107 - AIR CONDITIONING PRINCIPLES (8)
Prerequisites/Corequisites: ACT 102, ACT 106, ACT 110, MAT 101 (diploma)
Introduces fundamental theory and techniques needed to identify major components and functions of air conditioning systems. Instruction is given on types of air conditioning systems and use of instrumentation. Topics include: types of AC systems, heat-load calculation, properties of air, psychometrics, duct design, air filtration, and safety principles.

ACT 108 - AIR CONDITIONING SYSTEMS AND INSTALLATION (3)
Prerequisite/Corequisite: ACT 107
Provides instruction on the installation and service of residential air conditioning systems. Topics include: installation procedures, service, split-systems, add-on systems, packaged systems, and safety.

ACT 109 - TROUBLESHOOTING AIR CONDITIONING SYSTEMS (7)
Prerequisites/Corequisites: ACT 108, ENG 100
Provides instruction in troubleshooting and repair of major components of a residential air conditioning system. Topics include: electrical controls, airflow, refrigeration cycle, and safety.

ACT 110 - GAS HEATING SYSTEMS (5)
Prerequisites/Corequisites: ACT 102, ACT 106, MAT 101
Introduces the principles of combustion and service requirements for gas heating systems. Topics include: service procedures, electrical controls, gas valves, piping, venting, code requirements, principles of combustion, and safety.

ACT 111 - HEAT PUMPS AND RELATED SYSTEMS (6)
Prerequisite/Corequisite: ACT 109
Provides instruction on installation and servicing of electric heating systems, heat pumps, and related systems. Topics include: installation procedures, servicing procedures, troubleshooting, valves, electrical components, safety, geothermal ground source energy supplies, and dual fuels.

ESTIMATED PROGRAM COSTS

**AIR CONDITIONING TECHNOLOGY
FOUR-QUARTER DIPLOMA**

First Quarter

Tuition/Fees.....	\$544.00
Books.....	310.00
Supplies.....	185.00
Total.....	\$1,039.00

Second Quarter

Tuition/Fees.....	\$544.00
Books.....	200.00
Supplies.....	185.00
Total.....	\$929.00

Third Quarter

Tuition/Fees.....	\$544.00
Books.....	0.00
Supplies.....	185.00
Total.....	\$729.00

Fourth Quarter

Tuition/Fees.....	\$544.00
Books.....	60.00
Supplies.....	185.00
Total.....	\$789.00
Total Cost.....	\$3,486.00

Tuition/fees and cost of books/supplies are estimates only and are subject to change without notice. Tuition is based on Georgia residency.
10/07