

Career and Technical Education

ALSDE - approved CTE Course of Study Standards linked [HERE](#).

Supplemental Resources: Subject area courses may utilize the following supplemental resources:

Below are the adopted textbooks for CTE courses as well as the course outline and description.

Course	Textbook Title	Author	Edition	Publisher	Copyright Year	Tentative Course of Study	Course Descriptions
PRINCIPALS OF REFRIGERATION	REFRIGERATION AND AIR CONDITIONING TECHNOLOGY	Silberstein, Obrzut, Tomczyk, Whitman, Johnson	9th Edition	Cengage	2021	ALABAMA COURSE OF STUDY: Architecture and Construction	This course emphasizes the fundamental principles for air conditioning and refrigeration. Instruction is provided in the theory and principles of refrigeration and heat transfer, HVAC/R system components, common, and specialty tools for HVAC/R, and application of the concepts of basic compression refrigeration. Upon completion, students should identify system components and understand their functions, identify, and use common and specialty HVACR tools, and maintain components of a basic compression refrigeration system
PRINCIPALS OF ELECTRICITY FOR HVACR	REFRIGERATION AND AIR CONDITIONING TECHNOLOGY	Silberstein, Obrzut, Tomczyk, Whitman, Johnson	9th Edition	Cengage	2021	ALABAMA COURSE OF STUDY: Architecture and Construction	This course is designed to provide the student with the basic knowledge of electrical theory and circuitry as it pertains to air conditioning and refrigeration. This course emphasizes safety, definitions, symbols, laws, circuits, and electrical test instruments. Upon completion students should understand and be able to apply the basic principles of HVACR circuits and circuit components.
REFRIDGE TRANSITION AND RECOVERY THEROY	NCCER: HVAC LEVEL 1	NCCER	6th Edition	Pearson/Savvas	2023	ALABAMA COURSE OF STUDY: Architecture and Construction	This course is EPA-approved and covers material relating to the requirements necessary for type I, II, and III universal certifications. Upon completion, students should be prepared to take the EPA 608 certification examination.
SYSTEM SIZING AND AIR DISTRIBUTION	NCCER CORE: INTRODUCTION TO BASIC CONSTRUCTION SKILLS	NCCER	6th Edition	Pearson/Savvas	2021	ALABAMA COURSE OF STUDY: Architecture and Construction	This course provides instruction in the load calculation of a structure and system sizing. Topics of instruction include heat loss, heat gain, equipment and air distribution sizing, and factors making acceptable indoor air quality. Upon course completion, students should be able to calculate system requirements.
HVACR SERVICE PROCEDURES	REFRIGERATION AND AIR CONDITIONING TECHNOLOGY	Silberstein, Obrzut, Tomczyk, Whitman, Johnson	9th Edition	Cengage	2021	ALABAMA COURSE OF STUDY: Architecture and Construction	This course covers system performance checks and refrigerant cycle diagnosis. Emphasis is placed on the use of refrigerant recovery/recycle units, industry codes, refrigerant coils and correct methods of charging and recovering refrigerants. Upon completion, students should be able to properly recover/recycle refrigerants and demonstrate safe, correct service procedures which comply with the no-venting laws.
HEAT PUMP SYSTEMS I	REFRIGERATION AND AIR CONDITIONING TECHNOLOGY	Silberstein, Obrzut, Tomczyk, Whitman, Johnson	9th Edition	Cengage	2021	ALABAMA COURSE OF STUDY: Architecture and Construction	Instruction received in this course centers around the basic theory and application of heat pump systems and components. Upon completion students will be able to install and service heat pumps in a wide variety of applications.
FUNDAMENTALS OF GAS HEATING SYDTEMS	REFRIGERATION AND AIR CONDITIONING TECHNOLOGY	Silberstein, Obrzut, Tomczyk, Whitman, Johnson	9th Edition	Cengage	2021	ALABAMA COURSE OF STUDY: Architecture and Construction	This course provides instruction on general service and installation for common gas furnace system components. Upon completion, students will be able to install and service gas furnaces in a wide range of applications.