



8986

EXPLORATION OF
REFRIGERATION AND
AIR CONDITIONING (9)

15S / 15E / 15M

10S / 10E / 10M

A Refrigeration and Air Conditioning Technology
Course

8986: EXPLORATION OF REFRIGERATION AND AIR
CONDITIONING (12D)
15S / 15E / 15M
10S / 10E / 10M

Course Description

This is an optional course intended for students wishing to sample Refrigeration and Air Conditioning Mechanic. The emphasis is on hands-on activities. Students are introduced to safety, tools and equipment, refrigeration and air conditioning systems, and service procedures..

Goal 1: Describe and apply appropriate **health and safety** practices as they apply to refrigeration and air conditioning.

GLO 1.1: Describe and apply appropriate **health and safety** practices.

- SLO 9.1.1.1 Demonstrate awareness of the principles of Workplace Hazardous Materials Information Systems (WHMIS) as they apply to the refrigeration and air conditioning service and repair industry. (A3.11)
- SLO 9.1.1.2 Describe the purpose of Material Safety Data Sheets (MSDS).
- SLO 9.1.1.3 Describe workplace health and safety procedures (e.g., S.A.F.E., right to refuse). (A3.11)
- SLO 9.1.1.4 Demonstrate the ability to follow safety information on supplier labels.
- SLO 9.1.1.5 Identify the process for reporting injuries.
- SLO 9.1.1.6 Identify ergonomically correct procedures to avoid injury (e.g., stress, strain). (A3.7)
- SLO 9.1.1.7 Identify fire prevention and control strategies.
- SLO 9.1.1.8 Identify emergency evacuation and response procedures.

GLO 1.2: Create and maintain a **safe working environment**.

- SLO 9.1.2.1 Identify hazards and precautions working with and around energized equipment. (A12.2)
- SLO 9.1.2.2 Identify and report hazards (e.g., electrical safety, ergonomics, material handling, and chemical) related to processes, materials, tools, and equipment used in the refrigeration and air conditioning facility.

SLO 9.1.2.3	Follow the directions of the teacher/supervisor with regard to safe work practices.
SLO 9.1.2.4	Follow safe practices and procedures for facilities, processes, materials, tools, and equipment used in the refrigeration and air conditioning shop (e.g., keep work area clean and organized, avoid distractions).
SLO 9.1.2.5	Describe and use appropriate personal protective equipment (e.g., gloves, safety glasses or goggles, hearing protection, respirator mask, etc.). (A3.2)
SLO 9.1.2.6	Locate first aid and eyewash station.
SLO 9.1.2.7	Identify and report hazards (e.g., electrical, ergonomic, material handling, chemicals, and spills) related to materials, processes, tools, and equipment used in the refrigeration and air conditioning facility.

Goal 2: Demonstrate the safe and appropriate **selection, operation, and management** of shop **equipment and tools**.

GLO 2.1: Demonstrate the safe and appropriate **selection, operation, and management** of shop **equipment and tools**.

SLO 9.2.1.1	Select the proper tool for the job at hand.
SLO 9.2.1.2	Describe and model proper use of hand and power tools applicable to the task at hand.
SLO 9.2.1.3	Demonstrate safe and proper use of shop equipment and tools.
SLO 9.2.1.6	Demonstrate proper cleaning and maintenance of tools and equipment.

Goal 3: Demonstrate the safe and appropriate **use of materials**.

GLO 3.1: Demonstrate the safe and appropriate use of **fasteners and supports**.

No applicable SLOs.

GLO 3.2: Demonstrate the safe and proper manipulation of **pipng and tubing**.

SLO 9.3.2.1	Demonstrate the proper selection, set-up, modification, and manipulation of related piping and tubing systems.
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GLO 3.3: Demonstrate the safe and proper manipulation of sheet metal.

SLO 9.3.3.1 Demonstrate the safe and proper manipulation of sheet metal materials.

GLO 3.4: Demonstrate the appropriate management of materials.

SLO 9.3.4.1 Demonstrate the safe and appropriate management of materials used in the refrigeration and air conditioning trade.

Goal 4: Install heating, cooling, and refrigeration equipment.

GLO 4.1: Demonstrate an awareness of the **installation requirements for** heating, cooling, and refrigeration equipment.

No applicable SLOs.

GLO 4.2: Demonstrate the appropriate **installation** of heating, cooling, and refrigeration equipment.

No applicable SLOs.

GLO 4.3: Test and document refrigeration and air conditioning systems.

No applicable SLOs.

Goal 5: Repair heating, cooling, and refrigeration equipment.

GLO 5.1: Diagnose problems in heating, cooling, and refrigeration equipment.

No applicable SLOs.

GLO 5.2: Repair heating, cooling, and refrigeration equipment.

No applicable SLOs.

Goal 6: Service heating, cooling, and refrigeration equipment.

GLO 6.1: Demonstrate awareness of the **servicing needs** of heating, cooling, and refrigeration equipment.

No applicable SLOs.

Goal 7: Describe and demonstrate the transferable **cross-curricular** knowledge and skills as they pertain to the refrigeration and air conditioning service and repair industry.

GLO 7.1: Demonstrate skills from **information and communication technology**.

No applicable SLOs.

GLO 7.2: **Read, interpret, and communicate** information relevant to the refrigeration and air conditioning service and repair industry.

No applicable SLOs.

GLO 7.3: Apply the knowledge and skills related to the refrigeration and air conditioning service and repair industry from **mathematics**.

No applicable SLOs.

GLO 7.4: Apply the knowledge and skills related to the refrigeration and air conditioning service and repair industry from the **sciences**.

No applicable SLOs.

Goal 8: Demonstrate awareness of **sustainability** as it pertains to the refrigeration and air conditioning service and repair industry.

GLO 8.1: Describe the impact of **human sustainability** on the health and well-being of refrigeration and air conditioning mechanics and society.

SLO 9.8.1.1 Demonstrate an understanding of human sustainability.

GLO 8.2: Describe the refrigeration and air conditioning industry's sustainability practices and impact on the **environment**.

No applicable SLOs.

GLO 8.3: Describe **sustainable business practices** within the refrigeration and air conditioning service and repair industry.

No applicable SLOs.

Goal 9: Demonstrate awareness of the ethical and legal standards as they pertain to the refrigeration and air conditioning service and repair industry.

GLO 9.1: Practise the **ethical and legal standards** as they pertain to the refrigeration and air conditioning service and repair industry.

No applicable SLOs.

Goal 10: Demonstrate **employability skills** related to the refrigeration and air conditioning service and repair industry.

GLO 10.1: Demonstrate **fundamental employability skills**.

- SLO 9.10.1.1 Demonstrate critical-thinking and problem-solving skills.
- SLO 9.10.1.2 Demonstrate regular attendance and punctuality.
- SLO 9.10.1.3 Demonstrate accountability by taking responsibility for their actions.
- SLO 9.10.1.4 Demonstrate adaptability, initiative, and effort.
- SLO 9.10.1.5 Demonstrate the ability to accept and follow direction and feedback.
- SLO 9.10.1.6 Demonstrate teamwork skills.
- SLO 9.10.1.7 Stay on task and use time effectively.
- SLO 9.10.1.8 Communicate respectfully and effectively with co-workers and customers.

GLO 10.2: Demonstrate an understanding of the business operation of a refrigeration and air conditioning service and repair facility.

No applicable SLOs.

Goal 11: Understand **career opportunities** in the refrigeration and air conditioning service and repair industry and associated professions.

GLO 11.1: Describe **education** and **career opportunities** and **professional organizations** in the refrigeration and air conditioning service and repair industry and associated professions.

No applicable SLOs.

Goal 12: Understand the **evolution, technological progression,** and **emerging trends** in the refrigeration and air conditioning service and repair industry.

GLO 12.1: Describe the **evolution, technological progression,** and **emerging trends** in the refrigeration and air conditioning service and repair industry.

No applicable SLOs.

