Program Educational Objectives

The ACRT program provides its graduates with the necessary knowledge, abilities, skills, and attributes that qualify them to achieve within 2-3 years of graduation the following objectives:

1. Perform satisfactorily as technicians in the field of HVAC&R engineering technology (Dismantle, assemble, install, operate, test, troubleshoot, and maintain HVACR equipment/systems);
2. Solve problems related to the workplace through application of their technical capabilities in HVAC&R engineering technology;
3. Communicate effectively in oral, written, and graphical forms;
4. Demonstrate professional and ethical behaviour as well as respect for diversity; and
5. Pursue life-long learning through higher education, continuous professional development, and in-service training.

The Graduate's Occupational Duties

An occupational analysis of the program produced the following duties of its graduates after a few years of working in the field:

Design basic HVACR systems; Study drawings; Review design to site conditions; Estimate materials and equipment quantity; Start site preparation; Install, commission, and operate HVAC systems; Maintain systems; Troubleshoot HVAC Systems; and Repair components.

The program's student outcomes strengthen these occupational duties through the curriculum and allow the graduates to achieve these duties thoroughly after afew years of working in a specific field of the labour market.

About the ACRT Program

This program is preparing its graduates to work in the field of refrigeration and A/C. The program integrated study and training qualifies the graduates to deal with refrigeration systems and equipment as well as air-conditioning systems and air distribution systems. In addition, the program graduates are prepared to:

- Select the proper equipment for residential, commercial, and industrial refrigeration and air-conditioning applications.
- Select control devices and systems, air ducts and outlets, different types of pipe networks, pumps, filters, and electrical circuits used in the refrigeration and air-conditioning systems.
- Use different measuring and metering devices.

Career Opportunities

Graduates of ACRT program may choose from a wide variety of work applications in the following sectors:

Oil Sector: Kuwait national petroleum company – Kuwait oil company – Industrial petrochemical company – Equate – KafCo - Oil tanker company.

Government Sector: Ministry of Electricity, Water and Renewable Energy- Communication towers – Ministry of Public Works – Governmental hospitals – The big state mosque – Maintenance workshops at different ministries and Military forces – Civil aviation.

Private Sector: In addition to the above sectors, there are many opportunities in private sector companies such as A/C and Refrigeration dealers and Factories for A/C and Refrigeration equipment.

Public Authority for Applied Education and Training
College of Technological Studies
Kuwait

Department of
Mechanical Power & Refrigeration Technology

Program of Air Conditioning & Refrigeration Technology (ACRT)

Diploma/Degree Requirements

In order to earn a diploma degree in the ACRT program, student has to pass a minimum of 75 credits and has to have a minimum grade of C. The curriculum for this program includes numerous theoretical courses (40%) and practical courses (60%). These courses can be completed in five semesters of regular study which are covered in about 108 hours (courses: 92 hours, field training: 16 hours).

Degree offered: Associate Degree.

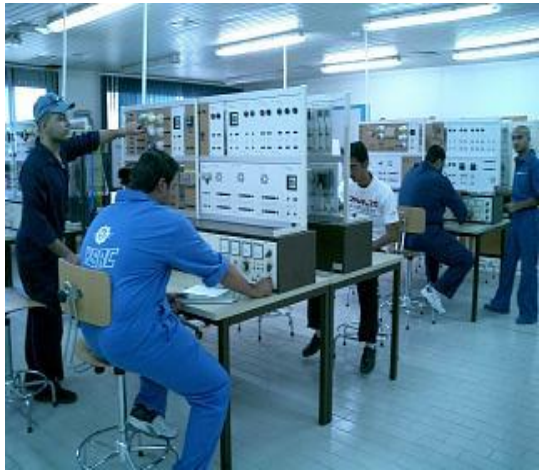
Duration of study: 5 semesters.

Student Outcomes

The ACRT program helps the students to attain by the time of graduation the following capabilities:

I. General Student Outcomes:

1. Ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering technology problems.
2. Ability to design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes.
3. Ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature.
4. Ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results.
5. Ability to function effectively as a member of a technical team.



II. Program Criteria:

2. Basic HVAC&R principles, including heat transfer, fluid mechanics, combustion, air conditioning and refrigeration processes, cooling load calculations, electrical circuits, and controls.
2. Application of HVAC&R principles for well-defined technical activities, including sizing of pipe and duct, analysis of ladder logic diagrams, evaluation of equipment performance, and use of computerized tools for energy calculations and equipment selection.
3. Application of HVAC&R principles for system operations, including troubleshooting, servicing, and maintenance tasks.

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