

# AIR CONDITIONING, REFRIGERATION AND HEATING CO-OP



## NOCTI certification available to all students

Air Conditioning and Refrigeration is a two year course designed to provide students with employable skills in the service and installation of residential and commercial air conditioning, heating, and refrigeration units. A student will attain a working knowledge of various components in numerous control systems, their operations separately and in combination with other controls. A student will be capable of troubleshooting a control system.

## UNITS OF STUDY

Estimating	Relays
Condensers	Contractors
Orientation	Starters
Measurements	Pressure and Pressure Systems
Installation	Circuit Protection and Problems
Duct Systems	Compressors and Compressor Cycles
Refrigeration	Domestic Refrigeration Servicing
Psychometrics	Commercial Refrigeration Servicing
Gases and Fluids	Domestic Air Conditioning Servicing
Service Problems	Domestic Refrigeration Installation
Heat Loss	Commercial Refrigeration Installation
Blueprint Reading	Domestic Air Conditioning Installation
Principles of Heat	Electronic Air Cleaning
Lubrication Systems	Systems
Circuit Installation	Humidification
Reciprocating Systems	De-humidification
Transformers and Motors	Reclaiming and Recycling of Refrigerants
Installation & Service of Standard & High Tech. Gas, Oil, Electric, and Hydronic Heating	

## STUDENT ACTIVITIES

The student will engage in a number of activities throughout the course. Students will perform various tasks, operations, experiments, diagnostics, and calculations in their work experiences. Students will also be given the opportunity to work on actual field equipment and modern environmental control systems.

The second year student will spend 72 classroom hours of field training with Air Conditioning and Heating companies in Niagara and Erie counties. If you are college bound, second year students will spend 12 hours of classroom time with a career mentor from the professional ranks. The mentors (engineers, project managers, design) also provide assistance from career decisions to resume writing, and in most cases, provide summer employment.

## **DEVELOPED STUDENT QUALITIES**

A student who successfully completes the course will have demonstrated the following:

1. A mathematical aptitude in the estimating, calculating, and performing of work tasks.
2. Mechanically inclined to work with simple hand tools and machines.
3. Possess a basic knowledge and understanding of blueprints.
4. Regularly attend classes.

## **SUGGESTED HOME SCHOOL COURSES**

The following is a list of courses that would be helpful:

Blueprint Reading  
Trade Math  
Electricity/Electronics  
Science

## **COLLEGE OPPORTUNITIES**

Northwestern College  
HV 101      Service & Procedures 1 – 6 credits