

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY AUT 236 - AUTOMOTIVE CLIMATE CONTROL (4 CR.)

Course Description

Introduces principles of refrigeration, air conditioning controls, and adjustment and general servicing of automotive air conditioning systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

General Course Purpose

This course is designed to help the student learn the theory and service procedures of automotive air conditioning. The student will develop an understanding of the operation of automotive air conditioning systems and logical, scientific methods of analysis of defects and necessary preventive or corrective maintenance requirements. The student will develop work habits, which will serve to preserve and protect their safety and the safety of others in the work area.

Course Prerequisites/Corequisites

Prerequisite: AUT 241. The ability to read, write, and speak the English language.

Course Objectives

Upon completion of this course, the student should be able to:

- Efficiently and intelligently analyze and repair automotive air conditioning and heating systems
- Take appropriate action to adjust or repair any defects
- Discuss findings with car owner and estimate the cost of repairs needed
- Understand the principles of air conditioning refrigeration, heating, and controls
- Identify component parts of heating and air conditioning systems and their functions
- Troubleshoot for defects, their cause, and how they affect system performance
- Develop a thorough knowledge of testing equipment and its use in determining air conditioning systems operating condition
- Understand the environmental implications of refrigerants and their safe handling

Major Topics to be Included

- Tools and equipment, system inspection
- Principles of heat exchange and applied thermodynamics
- Laboratory procedures and equipment familiarization, safety concerns
- Principles and technology of heating and air conditioning systems
- Air conditioning system: operation, diagnosis and servicing
- Refrigeration controls: operation, testing and service
- Airflow controls: operation, testing and service
- Air conditioning compressor: operation, testing and service