

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY  
AIR 252 – AIR CONDITIONING SYSTEMS II (4 CR.)**

**Course Description**

Studies air conditioning, sizing selection, and application, servicing, repairing of coils and compressors. Includes troubleshooting the cooling system. Studies piping design and sizing, installation, condensers and water towers. Includes valves, strainers and accessories, duct systems and air distribution design and their relationship with volume, static pressure and velocity. Part II of II. Lecture 3 hours. Laboratory 3 hours.

**General Course Purpose**

Presents to the student the principles, practices, and procedures used in the installation and operation of air conditioning systems. Provides the student with a greater understanding of refrigeration and air conditioning systems. This course of study covers condensers water towers and their components. The course also covers the air delivery systems and its concepts of air balance and deliver, design, and installation procedures.

**Course Prerequisites/Corequisites**

Prerequisite: AIR 251

**Course Objectives**

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

- Demonstrate in-depth knowledge of the commercial Air Conditioning refrigeration cycle
- Analyze the operation of commercial evaporator DX coils and flooded systems
- Analyze commercial compressors and compressor capacity controls
- Maintain and diagnose water-cooled and air-cooled condenser operation
- Demonstrate diagnosis, installation and adjustment of thermostatic expansion valves
- Analyze and diagnose commercial air conditioning system control equipment and control systems
- Install, replace, and diagnose refrigeration accessories
- Analyze, diagnose, and maintain high and low pressure chilled-water systems
- Maintain and diagnose problems associated with cooling towers and pumps
- Troubleshoot problems specific to chilled-water systems

**Major Topics To Be Included**

- Water cooled condensers
- Water chillers
- Water towers
- Other heat rejection devices
- Air and air properties
- Air flow characteristics
- Air flow devices
- Duct construction and material
- Air flow balancing