Course  
ME 42100 - Heating and Air Conditioning I

Type of Course  
Elective for ME program

Catalog Description  

Credits  
3

Contact Hours  
3

Prerequisite Courses  
ME 32100

Corequisite Courses  
None

Prerequisites by Topics  
Heat Transfer

Textbook  

Course Objectives  
To review the principles of thermodynamics, fluid mechanics, and heat transfer as they apply to the thermal conditioning of spaces and to give students a general introduction to the principles of HVAC analysis and design.

Course Outcomes  
Students who successfully complete this course will have demonstrated an ability to:
1. Perform heating load calculations. (1)
2. Perform cooling load calculations. (1)
3. Size and design duct and pipe distribution systems. (1,2)
4. Apply the knowledge gained in items 1-3 to a real-life structure, such as an office building or residence and communicate the results. (2,3)
5. Learn about new and current technology in the field of heating and air conditioning and report finding. (3,7)

Lecture Topics  
1. Introduction, systems, costs
2. Thermodynamics/heat transfer review
3. Psychrometrics
4. Design conditions/comfort and health
5. Heating/cooling loads
6. Energy usage and calculations
7. Ducts and pipes
8. Air and water systems
9. Paper presentations

Computer Usage	Medium

Laboratory Experience	None

Design Experience	Medium

Coordinator	Donald Mueller, Ph.D., P.E.

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