



Course Syllabus

Course #: AAD 2660 Course Name: Air Conditioning & Heating

Division: Engineering and Industrial Technologies

Class Days: Class Time:
Location: Classroom: Laboratory:
Credit Hours: Contact Hours: Lab Hours: Lecture Hours:

Instructor: Office Location:
Phone: Email Address:

Office Hours: TBD

Division Office/Location: Engineering Building Division Fax: 419-334-2300

Full-time Contact Person: Jayne Bowersox Phone(s): (419) 559-2410

Course Description:

To give the student a basic understanding of the air conditioning systems used on mobile equipment, their components, the structure and function of each component as well as the technical procedures needed for diagnosis, maintenance, repair of the system, retrofitting systems and new laws concerning type of product and recovery.

Prerequisite(s): None

Corequisite(s): None

Entry Level Skills and Knowledge:

Required Texts, Supplies and Equipment:

Text: "Automotive Air Conditioning" by Boyce H. Dwiggin

Other: Safety glasses or goggles

Grading:

10% = Attendance <Note, more than 10 minutes late (unless excused) or leaving early,(unless excused) will lower that day attendance grade by 50%>

15% = Test and Quizzes

20% = Lab Work <Lab work grade are made up of the following:

- 1. Safety as you work
2. Neatness of work & clean-up of work area
3. Usage of tools
4. Proper procedure
5. Understanding of task or work performed. Your grade for this part also drives the grade you receive for the final lab test.

Note: If you need to use the school safety glasses more than four times in this class,

your lab grade will be lowered by 35%

15% = Lab task, The number of tasks that was the average for the class, all paper work must be turned in.

20% = Final Lab test <"Hand on test", without this test you maybe unable to take written test. This test will also be used to calculate the lab work grade>

20% = FINAL WRITTEN EXAM

Quizzes must be made up within one week from time the quiz is given unless other arrangements are made. All lab papers and worksheets must be turned in by a date set by the instructor.

Learning Outcomes:

General Education

1. **Communicate effectively**
2. **Evaluate arguments in a logical fashion**—Competence in analysis and logical argument are explicit learning goals for most general education programs, although these skills go by a variety of names (e.g., critical thinking, analysis, logical thinking, etc.). **Students will be able to demonstrate competence in problem solving in communication, mathematics, and in team settings.**
3. **Employ the methods of inquiry characteristic of natural sciences, social sciences, mathematics, and the arts and humanities;** general education introduces students to methods of inquiry in several fields of study and thereby prepares students to integrate information from different disciplines.

Assessment of Student Learning:

Assessment Project and Measurement in course (if any):

Plan of Work:

1. Changes of modern A/C systems R12 - R134 A
2. Government Laws and Restrictions of new products
3. Omnidata Simulator use
4. Manifold and gauge sets - Leak Detectors
5. Temperature- Pressure relationships
6. Temperature--Pressure relationships
7. Introduction and body comfort
8. Matter and heat
9. Pressure and principles of refrigeration
10. Refrigerants and special safety precautions
11. The refrigeration circuit and the electrical circuit
12. Refrigeration oil--Moisture
13. Moisture removal--Service valves
14. The receiver/dryer--The thermostatic expansion valve
15. The thermostat--The magnetic clutch
16. Pressure controls--Automatic temperature controls
17. MIDTERM

18. Electric and vacuum control devices—Introduction to system diagnosis
19. The compressor and condenser
20. The dehydrator and T.X.V.
21. The T.X.V. and thermostats
22. The thermostat--The S.T.V.
23. Ambient Switches 1979
24. The suction control devices
25. The systems
26. ASE Course OSHQ Laws
27. Exam 1 ASR 2 final exam

Course Requirements:

Complete all assignments as required

Daily participation in class and lab sessions, midterm, attitude, cooperation, and final exam will be parts of evaluating of the student for final grade. Each of the above characteristics count equally toward the final grade.

Policies

Course Withdrawing: If for any reason you need to withdraw from this course, be certain that you do so according to College procedure. It is your responsibility to know and follow this procedure. If you simply stop coming to class, without officially withdrawing from the course, your grade is an automatic “F.” Please follow official College procedure for withdrawing from this or any course.

College Academic Policies are located in the College Catalog. A copy of the current catalog may be picked up in any of the division offices or admissions. The list of college policies is also available online at <https://www.terra.edu/register/Collegecat/policies.asp>.

Support Services: The College offers a number of support services to assist in your success in this course and all courses. Among these services are the Writing & Math Center in B105, the Office of Learning Support Services, which coordinates the campus disability services and tutoring programs, the computer labs, and the computers in the atriums.

Any student who feels he/she may need an accommodation based on the documentation of a disability should contact the Office of Learning Support Services privately to discuss his/her specific issues. Please contact the OLSS at (419) 334-8400 X 208 or visit 100 Roy Klay Hall (Building A) to coordinate reasonable accommodations.

If you have a documented disability and are receiving academic accommodations through the Office of Learning Support Services, please schedule a meeting with your instructor in a timely manner so that we may discuss how these services will be arranged.

Tutoring services are available to students beginning the second week of every quarter. Students requesting tutoring services should obtain a tutor request form from the OLSS in 100 Roy Klay Hall (Building A) or online at the Terra website. Please note that instructor verification and acceptance of

the Student Learner Agreement is necessary for all tutoring requests. All requests should be submitted to 100 Roy Klay Hall (Building A).