

Arkansas State University-Newport's mission is to provide an accessible, affordable, quality education that transforms the lives of our students, enriches our communities, and strengthens the regional economy.

ECT2243: Advanced HVACR Systems Diagnostics

Course Description: This course will allow students to develop skills needed to properly diagnose high-efficiency heating and air conditioning equipment. System diagnostics will be discussed and calculated on the advanced electrical wiring schematics in order to achieve optimum efficiency ratings of various types of equipment. Students will be trained to use diagnostic tools that pinpoint precise system refrigerant calculations and airflow to increase SEER Ratings of the equipment.

Course Type:

Instructor Name:

Office:

Office Phone:

Email:

Office Hours:

Department Information

Course Department:

Academic Department:

Academic Coordinator:

Email:

Associate Dean:

Associate Dean Contact Number:

Email:

Materials: Required and Optional

Required Text(s):

1. Modern Refrigeration and Air Conditioning 20th Edition, Althouse, Turnquist, Bracciano, ISBN: 9781631263545
2. *Arkansas Mechanical Code*. International Code Council.
3. *Arkansas Fuel Gas Code*. International Code Council. ISBN 978-1-58001-565-3,
4. *2014 National Electrical Code*. National Electric Code Committee, National Fire Protection Agency

Optional Text(s): None

Required Materials: Pencils, Paper, Basic Scientific Calculator, ASUN Campus Email and —My ASUN Portal Username and Password (same for email and Portal)

Optional Materials: None

Institutional Learning Outcomes

Upon graduating from ASU-Newport with any Associate Degree, a student will be proficient in the following:

ILO1: Communication

Goal: Students will express ideas, knowledge, and concepts in a clear and concise manner.

- a) Written
- b) Verbal
- c) Interpersonal

ILO2: Reasoning

Goal: Students will apply reasoning skills in a variety of environments, which demonstrates problem-solving and applied knowledge.

- a) Explore
- b) Locate
- c) Interpret
- d) Evaluate
- e) Apply

ILO3: Responsibility

Goal: Students will participate in service activities that instill in them a sense of social responsibility.

- a) Civic
- b) Academic
- c) Financial

Institutional Grading Scale

Grading Scale:

- A: 90-100
- B: 80-89
- C: 70-79
- D: 60-69
- F: 0-59
- S: Satisfactory
- U: Unsatisfactory

Americans with Disabilities Act Compliance

In order to obtain appropriate disability related accommodations and services to which they are entitled, students with documented disabilities should voluntarily and confidentially provide the Office of Disability Services (870-512-7838 or disabilityservices@asun.edu) with appropriate medical documentation regarding the nature and extent of their disability, make their needs known to this Office and follow established procedures for acquiring needed services and accommodations in the classroom or online.

Information Technology Services

If you experience any problems or issues with the Portal or other equipment, please contact ITS at 870-512-7783 or <http://its.asun.edu> ASU-Newport provides a number of different services to assist students in areas that directly impact their academic success. The following direct websites will help you get in touch with those services that may be needed during your time as an ASUN student.

Academic Support Center: <http://academicsupport.asun.edu>

Financial Aid: <http://financialaid.asun.edu>

Career Pathways: <http://pathways.asun.edu>

University Police: <http://cpd.asun.edu>

Information Technology Services: 512-7783 or its@asun.edu

Disability Services: http://www.asun.edu/disability_services

Admissions: <http://admissions.asun.edu>

Academic Dishonesty (As found in the [ASUN Student Handbook](#))

ASU-Newport enthusiastically promotes academic integrity and professional ethics among all members of the ASU-Newport academic community. Violations of this policy are considered serious misconduct and may result in disciplinary action and severe penalties. Cheating in any form-including plagiarism, turning in assignments prepared by others, unauthorized possession of exams-may result in the student being dropped from the class with an “F” and/or being suspended from the College. Students who feel they have been unfairly accused of cheating may appeal to the Division Chair and the Vice Chancellor for Academic Affairs.

Campus Safety Information

What to know and do to be prepared for emergencies at ASUN:

- Opt-in to receive ASUN’s School Messenger notifications regarding weather closings, emergencies, and other important notifications. All currently enrolled students will receive an email within the first two weeks of the semester prompting them to Opt-in to the messaging system.
- Know the safe evacuation route from each of your classrooms. Emergency evacuation routes are posted in on-campus classrooms.
- Listen for and follow instructions from your instructor or other designated authorities.
- For additional emergency information see the ASUN Emergency Response Guide in the Portal under “More” then select “Department of Safety”.
- Know the emergency phone number for ASUN Campus Police or dial 911.
- Report suspicious activities and objects found on campus.
- Keep your permanent address and emergency contact information current in My Campus.

Inclement Weather

In the event of inclement weather, class cancelation is left to the discretion of the Chancellor. You will be notified of class cancelation on the university website, through news media, and through our school messaging system.

Children in the Classroom:

ASUN classroom policy requires that the learning environment should be free of distraction in order to provide the highest learning opportunity for all students. In this light, students should not bring children to the classroom. If you must bring a child on campus, please have your child properly supervised in the public gathering areas.

Course Learning Outcomes

Upon the successful completion of this course, students will be proficient in the following:

ECT 2243 Course Learning Outcomes

Learning Outcomes	Assessment
Demonstrate procedure for calculating heat loads and proper system sizing	<ul style="list-style-type: none"> • Manual J Calculation Exam
Apply critical charging techniques; determine net cooling capacity of a system, checking temperature split difference indoors	<ul style="list-style-type: none"> • Lab Demonstration Using Proper Tools And Techniques
Understanding fuel combustion basics, conducting testing procedures, calculating temperature rise, and manifold gas pressures	<ul style="list-style-type: none"> • Written exam that will test the knowledge of the students after each section of the National Electrical Code Book
Measuring airflow across supply and return grilles. Calculating cooling and heating CFM requirements	<ul style="list-style-type: none"> • Written exam that will test the knowledge of the students after each section of the Arkansas Law and Rules and Regulations
Complete a total system efficiency check	<ul style="list-style-type: none"> • MSA Comprehensive Exam

Course Policies and Procedures

Academic Calendar

Disclaimer

This syllabus and all documents associated with the syllabus are considered a contract between the student and the instructor. Students are expected to carefully read and review the syllabus and all associated documents in order to be familiar with course expectations and policies. This syllabus is subject to change at the discretion of the instructor, who will inform students of any changes. Students are responsible for keeping up with any changes.