

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.

## ECT2116: Refrigeration Systems

**Catalog Description:** This course will include the study of supermarket type refrigeration equipment. Both low temperature and medium temperature systems will be covered. Refrigeration systems controls, components and applications will be discussed. The practical application will include electrical wiring installation, service, repair and operational check of systems with differing refrigerants. Recovery and recycle of refrigerants will also be performed. Students will demonstrate knowledge of system components and charging procedures

**Prerequisites:** ECT1123 Basic Electrical Circuits, ECT1133 Basic Electrical Circuits Lab, ECT1144 Introduction to Air Conditioning System

**Course Type:** Theory/Lab

**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 20<sup>th</sup> 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](mailto: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](mailto:its@asun.edu)

Disability Services: [http://www.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 2116 Course Learning Outcomes**

<b>Learning Outcomes</b>	<b>Assessment</b>
Identifying factors for compressor sizing Summarizing factors that affect heat transfer Sizing refrigerant lines	<ul style="list-style-type: none"> <li>• Lab Diagnostics and Written Exam, Participation, and Homework</li> <li>• See Course Policies and Procedures for grading</li> </ul>
Servicing Light Commercial Systems. Pumping systems down Safely remove and repair system components	<ul style="list-style-type: none"> <li>• Lab Diagnostics and Written Exam, Participation, and Homework</li> <li>• See Course Policies and Procedures for grading</li> </ul>
Installing Commercial Systems Determine system component mounting locations Leak test system Charge system	<ul style="list-style-type: none"> <li>• Lab Diagnostics and Written Exam, Participation, and Homework</li> <li>• See Course Policies and Procedures for grading</li> </ul>
Commercial System Preventive Maintenance Electrical connections Identifying restrictions System of operations	<ul style="list-style-type: none"> <li>• Lab Diagnostics and Written Exam, Participation, and Homework</li> <li>• See Course Policies and Procedures for grading</li> </ul>
Troubleshooting Commercial System Components Component testing Calculating critical charge	<ul style="list-style-type: none"> <li>• Lab Diagnostics and Written Exam</li> <li>• MSA</li> </ul>

**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.