

**Hagerstown Community College**  
**OFFICIAL MASTER SYLLABUS DOCUMENT**

**COURSE:** INT-107-N01

3 Credits

**INSTRUCTOR:**

Fall 2017

**COURSE DESCRIPTION:** this course will introduce the student to the fundamentals of Refrigeration and Air Conditioning. We will discuss refrigeration theory including heat transfer, boiling points, system components and their purpose. Also included will be discussions on ozone depletion, the Clean Air Act, and EPA regulations as they apply to the HVAC/R industry. We will also discuss federal energy regulations and how they impact the HVAC/R industry. Hands-on activities will include silver brazing, soft soldering, and flaring of copper tube. We will build a simple refrigeration system using techniques learned in class including how to determine the correct refrigerant charge, set superheats, and recover the refrigerant from the system when the project is complete.

**TEXTBOOK:** Modern Refrigeration and Air Conditioning 19<sup>th</sup> Edition

**STUDENT LEARNING OUTCOMES:**

After successfully completing the course, the student should:

- \*Understand refrigeration theory.
- \*Understand EPA regulations and refrigerant recovery process.
- \*Understand HVAC/R system components and how they work.
- \*Understand evacuation, leak testing, and charging procedures.
- \*Understand SEER and COP energy ratings and HVAC system design.

**Total Hours of Coursework:**

To earn one academic credit at HCC, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute “academic” hours) of coursework per semester.

Those hours of coursework may be completed through a combination of hours within the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of coursework per credit.

For most classes, students should expect to do at least 2 hours of coursework outside of class for each hour of in-class coursework. Some students may require more coursework outside the classroom than expected.

Assignment/Assessment	Clock Hours
In-class Instruction	45
Textbook Chapter Readings	15 hours
Study of Manuals for Hands-on Activities	15 hours
Chapter Review Questions and Answers	15 hours
Research Assignments	15 hours
Exam Preparation	20 hours
	<b>Total hours=125 hours</b>

**Services for Students with Disabilities:** Students may receive reasonable accommodations if they have a diagnosed disability and present appropriate documentation. Students seeking accommodations are required to contact the Disability Support Services (DSS) office as early as possible. Students may contact a DSS staff member for an appointment at [dss@hagerstowncc.edu](mailto:dss@hagerstowncc.edu) or at 240-500-2530.