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Northeast Wisconsin Technical College

Land Acknowledgement Statement

The region served by NWTC **occupies the ancestral home** of the Menominee Nation, who have **persisted here** in Northeast Wisconsin from **before recorded history** to the present day. The College's Green Bay campus exists **upon lands ceded from the Menominee Tribe to the Oneida Nation**. We acknowledge this land we stand upon today as sacred, historical, and significant to the Menominee and Oneida Nations as are the **lands of all First Nations People**.

See more detail at <https://tinyurl.com/244wh3xf>

COMMERCIAL HVACR SYSTEMS ANALYSIS SYLLABUS

Catalog #**10-481-109** & Class #**81836**

Starts: **10/18/2023** Ends: **12/13/2023**



Welcome to NWTC! It is a privilege to be your College of choice. Our staff and faculty are excited for what is ahead of you. We welcome your unique perspectives and experiences and ask that you respect the backgrounds and experiences of others as we learn together. College can be challenging at times so please reach out to our staff and faculty. We are here to help you learn and support your success. We believe you can be successful!

INSTRUCTOR INFORMATION & RESPONSIBILITIES

Instructor Leon Charnetski
Office BC106B
Telephone (920) 498-7185
Email leon.charnetski@nwtc.edu
Availability By Appointment

To help you be successful, I will

- Maintain an inclusive, safe learning environment
- Provide open and frequent communication regarding your progress in this class.
- Reply to communications within 48 business hours. (Before your next class meeting)
- Grade assignments regularly and provide feedback to guide you toward improvement of your coursework.
- Communicate changes due to student and instructor needs, class cancelations, or college closures in a timely manner.

CLASS INFORMATION

Class Schedule & Meeting Location: This class meets in Green Bay, Room **BC114** as described below. Our class is delivered in an in-person format.

- *In-Person – Classes will meet on campus at specific dates/times with your instructor, fellow students, and you in face-to-face small class settings.*

This class meets on the following days/times:

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY |
|---------------------|---------|---------------------|----------|--------|----------|--------|
| 12:30pm – 4:20pm | | 12:30pm – 4:20pm | | | | |

Course Description: Identify commercial HVAC system types and the general energy use impact of each type. Calculations of system equipment efficiencies will be used to determine EER, SEER, AFUE, COP, combination and seasonal efficiency in boilers, balance point partial efficiency.

Credits: 3

Pre-requisites/Corequisites: 10-481-114, Intro to Energy Management

Textbooks:

Energy Management W/MyHVACLab AC, Charnetski

Supplies/Technology:

You need access to a computer or tablet. Many assignments will be submitted through Cantas online.

Course Competencies: Upon successful completion of this course, you will be able to:

1. Review heat transfer principles for buildings.
2. Describe thermodynamic processes in buildings.
3. Analyze the psychrometrics of HVACR systems.
4. Analyze the heating and cooling loads of buildings.
5. Analyze types of heating equipment for buildings.
6. Analyze types of cooling equipment for buildings.
7. Analyze types of duct systems for HVACR equipment in buildings.
8. Develop strategies to operate HVACR systems efficiently.
9. Analyze the vapor compression cycle of a refrigeration system.

Employability Skills: In addition to specific job-related training, NWTC has identified the following transferrable employability skills reaching beyond the context of a specific course:

1. Communicate Effectively
2. Work Cooperatively and Professionally
3. Think Critically and Creatively
4. Solve Problems Effectively
5. Value Individual Differences and Abilities
6. Demonstrate Personal Accountability
7. Demonstrate Community and Global Accountability

See the Employability Skills rubric for the HVAC Program through the Canvas link on the home page.

[HVAC Employability Skills](#)



Course Engagement:

Tardiness or leaving early (tardiness is an accumulating deduction).

- 1st tardy = -0.1 points (you get one "almost free" tardy per course).
- 2nd tardy = -3 points for that occurrence.
- 3rd tardy = -6 points for that occurrence.
- 4th tardy = -9 points for that occurrence and so on... (additional 3 pts. deducted every time).

Absence policy (absences are an accumulating deduction).

- 1st absence = -0.2 points (you get one "almost free" absence per course).
- 2nd absence = -10 points for that occurrence.
- 3rd absence = -20 points for that occurrence.
- 4th absence = -40 points for that occurrence and so on... (deduction doubles every time).

SAFETY AND DRESS CODE:

- Safety glasses must be worn while anyone is doing lab work in the classroom.
- No horseplay or messing around, AT ALL, or you will be excused for the remainder of the class.
- No Shorts You must wear long pants
- No Sandals You must wear closed toe durable shoes
- No Saggy pants Keep your pants pulled up
- No loose dangling Jewelry
- A professional and clean appearance is expected at all times!

Estimated number of hours required to be successful in the class, (class hours and outside hours for homework, readings, etc.) In a lecture class, for every one hour in-class, you are expected to spend two hours of outside effort; in a lab class, for every two hours in-class, you are expected to spend one hour of outside effort.

Use of Technology in Class:

Every assignment, lab, and test will likely be done through via technology. This is new to many of our students and we work through issues together as a group. You need to ask questions as we go. You need to stay on task and do things as instructed.

- You must maintain professional conduct with social media. (Employers check social media sites when conducting background checks.)
- Students are expected to respect others' views and display common courtesy when posting their views to online discussions.
- It is important that everyone understands how to use online course tools in a way that ALL students feel safe and supported.
- There is reserved class time for **phone usage... Break time.** (There are deductions if I see your phone in class.)
- Talking and texting is prohibited in the lab and lecture room during class hours.
- Inappropriate use of a mobile device is grounds for removal from the program.
- The iPad will be used for HVACR applicable educational purposes, only.
- If I see your phone at any time in the classroom, you will lose 1 employability point for each occurrence per the employability skills rubric.

Campus Closure Day(s) Procedure: In the event of a campus closure,

Save the date: **12/18/2023** for potential make up due to emergency closure in this 8-week session.

Syllabus Changes: Instructors may make changes to the syllabus based on the timeline of the class, feedback from learners and/or logistical issues. You will be informed as soon as a change is made. A current copy of the course syllabus will be maintained by the division office.


Grading Policy:

- No late work is accepted. All late work will receive a "0" in the gradebook. This is automatic.
- Assignments are due at midnight the day prior to the next class.
- No make-up work is accepted.
- No extra credit (except what is available from employability skills).
- This course is graded using a points system. There are no weighted grades.

Tests:

- Tests will be proctored through Canvas in the classroom on the iPads.
- All tests must be taken to pass this course.
- Tests must be taken on the day and at the time they are offered to receive full credit.
- Taking a test late will deduct 10% from the score you earned. (NO Exceptions)

Labs, Assignments, & Pearson MyHVACLab Content:

- Lab projects may consist of a combination of hands-on/tasks, written documentation, worksheets, and lab reports submitted through Canvas.
- Labs cannot be made up and receive a "0" if not completed when offered.
-  Pearson MyHVACLab content is accessed through Canvas and has required activities.
- These grades are transferred from Pearson directly into Canvas within 1 hour of completion.

Grading Scale:

A "D" is considered unacceptable and you will not move on to the next course without further discussion between instructor(s) and academic advisor.

| HVACR Program Grade Scale | |
|---------------------------|-------|
| Percentage (%) | Grade |
| 92 – 100 | A |
| 84 – 91.99 | B |
| 76 – 83.99 | C* |
| 73 – 75.99 | D |
| <72.99 | F |

* C is the minimum passing grade for this class.

Course Calendar:

| CANTAS Learning Plan | ASSIGNMENTS, ACTIVITIES, AND ASSESSMENTS | COMPETENCIES | POINTS |
|---|--|--------------|------------------------------|
| 1 | Check Box When Submitted | | LP TOTAL POINTS = 31 |
| Introduction to HVAC | <input type="checkbox"/> Worksheet Unit 1 | 2 | 10 |
| | <input type="checkbox"/> Pearson Test Online Unit 1 | 2 | 21 |
| 2 | Check Box When Submitted | | LP TOTAL POINTS = 181 |
| Heat Transfer and Building Loads | <input type="checkbox"/> Worksheet Chapter 2 Unit 8 | 1,2,5 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 3 Unit 9 | 1,2,5 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 4 Unit 10 | 1,2,5 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 16 Unit 70 | 1,2,5 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 17 Unit 71 | 1,2,5 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 18 Unit 72 | 1,2,5 | 10 |
| | <input type="checkbox"/> Pearson Test Online Unit 8, 9, 10, 70, 71,-72 | 1,2,5 | 121 |
| 3 | Check Box When Submitted | | LP TOTAL POINTS = 158 |
| Cooling Systems | <input type="checkbox"/> Worksheet Chapter 5 Unit 11 | 2, 4, 6 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 6 Unit 12 | 2, 4, 6 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 19 Unit 76 | 2, 4, 6 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 24 Unit 81 | 2, 4, 6 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 27 Unit 84 | 2, 4, 6 | 10 |
| | <input type="checkbox"/> Pearson Test Online Unit 11, 12, 76, 81, 84 | 2, 4, 6 | 78 |
| | <input type="checkbox"/> LP3 GLEE Cooling Lab | 2, 4, 6 | 30 |

| CANTAS Learning Plan | ASSIGNMENTS, ACTIVITIES, AND ASSESSMENTS | COMPETENCIES | POINTS |
|---|--|---------------|------------------------------|
| 4 | Check Box When Submitted | | LP TOTAL POINTS = 68 |
| Psychrometrics | <input type="checkbox"/> Worksheet Chapter 7 Unit 42 | 1, 2, 3 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 8 Unit 43 | 1, 2, 3 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 9 Unit 44 | 1, 2, 3 | 10 |
| | <input type="checkbox"/> Pearson Test Online Unit 42, 43, 44 | 1, 2, 3 | 38 |
| 5 | Check Box When Submitted | | LP TOTAL POINTS = 153 |
| Heating Systems and Efficiency Ratings | <input type="checkbox"/> Worksheet Chapter 10 Unit 50 | 1, 2, 4, 5, 8 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 11 Unit 51 | 1, 2, 4, 5, 8 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 12 Unit 61 | 1, 2, 4, 5, 8 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 13 Unit 64 | 1, 2, 4, 5, 8 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 25 Unit 82 | 1, 2, 4, 5, 8 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 26 Unit 83 | 1, 2, 4, 5, 8 | 10 |
| | <input type="checkbox"/> Pearson Test Online Unit 50, 51, 61, 64, 82, 83 | 1, 2, 4, 5, 8 | 63 |
| | <input type="checkbox"/> LP5 GLEE Heating Lab | 1, 2, 4, 5, 8 | 30 |
| 6 | Check Box When Submitted | | LP TOTAL POINTS = 104 |
| Duct Systems | <input type="checkbox"/> Worksheet Chapter 20 Unit 77 | 3, 4, 5, 8 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 21 Unit 78 | 3, 4, 5, 8 | 10 |
| | <input type="checkbox"/> Worksheet Chapter 22 Unit 79 | 3, 4, 5, 8 | 10 |
| | <input type="checkbox"/> Pearson Test Online Unit 77, 78, 79 | 3, 4, 5, 8 | 38 |
| | <input type="checkbox"/> LP6 Placeholder | 3, 4, 5, 8 | 15 |
| | <input type="checkbox"/> Employability Skills | - | 21 |

Student Services to Support You: Being in college is an exciting time to develop skills, further your career path, and build community. We want to make certain that financial, physical and mental health, or technology challenges do not get in your way! Our staff and faculty at NWTC are ready to support your needs to help keep you on track with your studies and educational goals.

We encourage you to visit www.nwtc.edu/current-students or click on the Student Resources button in your Course Home Page on Canvas to learn more about the resources available to you, ranging from student involvement and personal counseling to academic, financial aid, and career advising, to food pantry, housing assistance, and transportation services.

Many students use these resources and services on a daily and weekly basis. Services are included in your tuition and are free to use! To access services, please contact your instructor or academic advisor via Starfish, or by calling (920) 498-5444.

Academic Coaching and Tutoring: Academic Coaching and Tutoring provides an additional layer of support to ensure you achieve your academic goals. Academic Coaching is committed to serving all students as an academic resource to promote student growth and success. Students who use Academic Coaching and tutoring receive course specific help along with practical experience with study skills, organization skills, time management, and confidence. We understand that school can be challenging; let us help you reach your academic goals at www.nwtc.edu/academiccoaching

Technology Skills & Assistance: Everyone comes to class with a variety of technology skills and experience. If you have questions about the technology needed to be successful in this course, reach out to me. As your instructor, I will provide an overview of needed technologies and connect you to additional resources. You can also visit the Technology Resources at <https://www.nwtc.edu/current-students> or click on the Student Resources button in your Course Home Page on Canvas for information on Canvas, printing and copying, and software or get technical assistance by calling the Student Help Desk at (920) 498-6900 or 1-866-235-5037.

The Library is a great resource for learning how to navigate your classes. Visit the Library during [open hours](#) or schedule an [appointment](#).

NWTC All College Policies: In addition to your course policies, there are policies and procedures that apply to all students taking classes at NWTC. Please refer to the NWTC Student Handbook to raise your awareness and understanding of the College's expectations. The Handbook can be found at <https://www.nwtc.edu/current-students> or click on the Student Resources button in your Course Home Page. Policies you may want to learn about more include:

- Academic Integrity (includes Plagiarism, cheating and collusion)
- Drop from a Class or Program
- Student Academic Grievance
- **Discrimination and Harassment Prevention:** We are committed to creating a respectful environment for each member of our college community. We prohibit discrimination and harassment in our educational programs and employment. Please reach out to us if you have any questions or concerns. You will find the contact information by following these links for questions or concerns related to [discrimination or harassment](#) or specifically related to [sexual harassment](#).
- **Disability Act Statement:** NWTC is committed to creating a learning environment that meets the needs of its diverse student body. NWTC complies with all provisions of the Americans with Disabilities Act and makes reasonable accommodations upon request. If you have a disability or experiencing difficulties with accessibility, please call Disability Services at (920) 498-6904 to begin a conversation regarding the support services available to you or to request an official accommodation.

Student Academic Calendar: Visit the [Academic Calendar](#) for important College dates like registration, campus closings, and graduation. Add these important dates to your personal calendar.