

**DISL-121-HVAC** 3 CREDITS

**SYLLABUS**

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**CATALOG DESCRIPTION**

Theory and operation of mobile heating, ventilation, and air conditioning systems in on and off-highway applications. Students must be able to revive an EPA Section 609 MVAC Refrigerant Recovery and Recycling certification prior to successful completion of this course. Safety will be strictly enforced. A grade of "C" or better must be earned to receive credit for this course.

Prerequisites:           None

Semester Offered:     Fall

***Common Student Learning Outcomes***

*Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...*

**BROAD AND SPECIALIZED LEARNING**

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

**CRITICAL THINKING**

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

**CULTURAL AND CIVIC ENGAGEMENT**

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

**EFFECTIVE COMMUNICATION**

Students will exchange ideas and information with clarity in multiple contexts.

**INFORMATION LITERACY**

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

**INTEGRATING TECHNOLOGIES**

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

*Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.*

**Course Learning Outcomes**

Upon successful completion of the course, the student will be able to...

1. To provide the student with the techniques and procedures to adjust, diagnose, service, and repair fluid power and HVAC systems found on on-highway trucks and mobile construction equipment.

## Specific Learning Objectives

Upon successful completion of the course, the student will be able to...

1. Understand the thermodynamics behind HVAC systems.
2. Use thermodynamics to troubleshoot HVAC system complaints.
3. Identify system type and conduct performance test of the A/C system; determine needed repairs.
4. Leak test A/C system; determine needed repairs.
5. Evacuate, recover, and recharge A/C system using appropriate equipment.
6. Inspect and adjust A/C compressor drive belts and pulleys; repair or replace as needed.
7. Verify correct operation of refrigerant handling equipment.
8. Test recycled refrigerant for non-condensable gases.
9. Attain EPA 609 Certification.
10. Understand the operation of a heating system.
11. Be able to troubleshoot HVAC complaints including:
  - a. Improper air blend
  - b. Lack or air movement into the operating environment
  - c. Improper routing of conditioned air delivery
  - d. HVAC sourced fog on front screen
  - e. HVAC sourced smells