



## CEC200 Heat Loads and Duct Sizing Syllabus

### Course Information

Credits	4
Campus	Washburn Institute of Technology
Address	5724 SW Huntoon
City/State/Zip	Topeka, Kansas 66604
Office Fax	785-273-7080

### Description

The course will teach students to analyze heat flow characteristics as they study heat loss and heat gain factors as it pertains to residential HVAC design. Topics will include the effects of selected materials and the layout of the system for the purpose of trouble shooting, load estimation and duct sizing.

### Textbooks

ACCA Manual J 8 Abridged Edition 2.5, ISBN 978-1-89-276526-0

ACCA Manual D (2014), ISBN 978-1-89-276550-5

Carter Stanfield & David Skaves, *AHRI Fundamentals of HVACR*, Edition: 3rd, ISBN: 978-0-13-401616-0

### Student Learning Outcomes:

- A. Communicate effectively
- B. Integrate technology
- C. Learn effectively
- D. Demonstrate cooperative teamwork skills
- E. Apply safety in the workplace
- F. Think critically and creatively
- G. Demonstrate responsible work ethics

### Competencies

1. Describe velocity and volume as it pertains to air flow through a duct system.
2. Identify the various types of duct systems.
3. Describe the installation of fittings and transitions used in duct systems.
4. Explain the use of diffusers, register, and grills.
5. Explain the use of dampers, insulation, and vapor barriers used in duct systems.
6. Perform load calculations using the ACCA J-Manual.
7. Perform duct sizing calculations using the ACCA D-Manual.
8. Analyze heat flow through various construction designs.

9. Analyze air flow through various duct designs.
10. Explain the process of selecting equipment

## Guidelines for Success

### Assessment Plan

Assessment is an integral part of the educational process at Washburn Tech and accurate feedback is an important tool in continuously improving the institution's technical programs. Students can expect to participate in assessment activities prior to entry into programs, within specific courses and following program completion for specific fields of study.

### Grading Scale

92 - 100%	= A
85 – 91%	= B
84 – 78%	= C
77 – 70%	= D
<70%	= F

### Attendance

Classroom attendance is required. Material missed must be made up with the instructor.

### Disability

The Americans with Disabilities Act (ADA) Office is responsible for assisting in arranging accommodations and for identifying resources at Washburn Institute of Technology for persons with disabilities. Qualified students with disabilities **MUST** self-identify by completing an application. In addition students must provide appropriate medical documentation to the ADA coordinator to be eligible for accommodations. New requests for accommodations should be submitted at least two months or more prior to the date the accommodations are needed. However, please contact the ADA office as soon as a need may arise. Depending on the accommodation request, four to eight weeks lead time may be needed for timely and effective provision of accommodations.

The ADA Office coordinates and assists in arranging accommodations it deems appropriate for eligible students on a case-by-case basis. If you are a student with a disability that may substantially limit your ability to participate in any of our classes and you believe that you will need accommodations, it is your responsibility to contact: ADA Coordinator, 785.670.3365 or Gloria.christian@washburn.edu.

Washburn University prohibits discrimination on the basis of race, color, religion, age, national origin, ancestry, disability, sex, sexual orientation, gender identity, genetic information, veteran status, or marital or parental status. The following person has been designated to handle inquiries regarding the non-discrimination policies: Dr. Pamela Foster, Equal Opportunity Director/Title IX Coordinator, Washburn University, 1700 SW College Ave, Topeka, Kansas 66621, 785.670.1509, eodirector@washburn.edu