

SYLLABUS
PART I
EDISON COMMUNITY COLLEGE
HVA 201S HVAC DESIGN AND APPLICATION
3 CREDIT HOURS

COURSE DESCRIPTION

In depth study of the load calculations needed for HVAC system sizing. Includes calculating heat loss/gain, net square footage, duct work sizing, unit sizing and placement. Also includes Ohio mechanical code requirements. Prerequisite: HVA 101S and HVA 121S.

COURSE GOALS

The student will:

Bloom's Level		Program Outcomes
2	1. Explain why load calculations are performed.	3, 7
1	2. Describe in general terms how to properly size a unit to maintain comfort.	3, 7
1	3. Describe how to configure ductwork to efficiently deliver the air flow required by an HVAC system.	3, 7
2	4. Explain the requirements for selecting the location of the air handler and the condensing unit.	3, 7
1	5. List and describe four different styles of duct systems.	3, 7
1	6. List various types of material used in duct fabrication.	3, 7
3	7. Calculate net square footage of the building envelope.	5
3	8. Calculate the solar heat gain on exterior building surfaces and calculate window heat loss/gain.	5
3	9. Calculate the heat produced by internal heat sources for building occupants, equipment and lighting.	5
1	10. Describe the primary concepts and general procedure for determining the size unit required to maintain comfort in a building.	3, 7
1	11. Describe the primary concepts and general procedures for determining the size and configuration of ductwork required to deliver the designed CFM.	3, 7
1	12. Describe the duct design process.	3, 7
2	13. Discuss general regulations applicable to appliance installation.	3, 7
4	14. Analyze building ventilation requirements.	5
1	15. Identify code regulations for the materials and methods used in duct construction and installation.	3
3	16. Determine the combustion air requirements for fuel burning appliances.	5
2	17. Discuss code requirements for fuel gas piping installation.	3, 7

CORE VALUES

The Core Values are a set of principles that guide in creating educational programs and environments at Edison. They include communication, ethics, critical thinking, human diversity, inquiry/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

TOPIC OUTLINE

1. Heat Loss and Heat Gain
2. Unit Sizing
3. Ductwork
4. Ohio Mechanical Code