

SYLLABUS
PART I
EDISON COMMUNITY COLLEGE
HVA 141S HVAC INSTALLATION TECHNIQUES & PRACTICES
4 CREDIT HOURS

COURSE DESCRIPTION

In-depth study of the practices required for new installation and replacement of HVAC equipment. Includes an introduction to sheet metal skills, along with copper and black pipe plumbing. Hands-on skills and code requirements are stressed along with good safety practices. Also includes the installation of a complete residential HVACR system. Prerequisite: HVA 101S

COURSE GOALS

The student will:

Bloom's Level		Program Outcomes
1P	1. Identify and perform soldering and brazing procedures including a nitrogen purge.	2
1	2. Identify different soldering and brazing materials.	3
3P	3. Join materials with low-temperature solder.	2
3P	4. Join materials with high-temperature brazing.	2
3P	5. Join ferrous and non-ferrous materials.	2
2	6. Discuss the proper use of piping materials, fabrication, and application.	3, 7
1	7. Identify different types of piping and tubing.	3
3P	8. Demonstrate proper techniques for bending and connecting tubing and piping.	2
3P	9. Demonstrate proper fabrication of tubing.	2
1	10. Identify and use proper tubing and piping fittings.	2
3P	11. Perform leak detection procedures.	1, 4
2	12. Explain common leak detection techniques (i.e. the soap bubble, inert gas, electronic and fluorescent dye techniques).	3
3P	13. Install refrigeration and air conditioning equipment to local and state codes.	1, 2, 8
3P	14. Demonstrate sheet metal layout and fabrication procedures.	2
1P	15. Identify and install residential forced air heating systems.	1, 5
3P	16. Fabricate and install a distribution system.	2
3P	17. Install a gas, electric and oil heating system.	1, 2, 8
3P	18. Apply cutting and sheering, bending and folding, forming and assembly, and sealing and insulation procedures.	2
1	19. Identify various methods of fastening sheet metal and different methods of fastening and hanging.	3
3P	20. Assemble duct work in accordance to the appropriate manufacturer's specification.	2, 8
1	21. Identify different types of duct materials.	3

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

SYLLABUS
PART I
EDISON COMMUNITY COLLEGE
HVA 141S HVAC INSTALLATION TECHNIQUES & PRACTICES
4 CREDIT HOURS

learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

TOPIC OUTLINE

1. Piping Fundamentals
2. Soldering and Brazing
3. Piping and Leak detection
4. Installation Techniques
5. Sheet metal/Duct work
6. Ohio Mechanical Code