

SYLLABUS
PART I
EDISON COMMUNITY COLLEGE
HVA 121S HEATING SYSTEMS
3 CREDIT HOURS

COURSE DESCRIPTION

Introduction to the basic concepts of all heating systems found in light commercial applications. Course includes roof top package systems, heat pumps, packaged low-pressure boiler systems, packaged unitary heaters, and the fundamentals of heat generation in water-based heating systems including low-pressure hot water steam generation.

COURSE GOALS

The student will:

Bloom's Level		Program Outcomes
3	1. Utilize proper combustion, venting and ventilation tables.	5
1	2. Identify components of an air-to-air heat pump.	3
1	3. Identify components of a geothermal system.	3
3	4. Apply a manometer, psychrometer and other air analysis instruments to determine proper air flow.	1, 4
2	5. Explain the application, selection, and installation of hydronic system components.	3, 7
2	6. Explain the operation of a hydronics system.	3, 7
1	7. Identify the components of a hydronics system.	3
4	8. Select major components of a hydronics system.	5
3	9. Review and test safety controls for hydronic systems.	1, 6
2	10. Explain the application, selection, and installation of low pressure steam systems.	3, 7
1	11. Identify basic low pressure steam system components and designs.	3
1	12. Review state codes related to boilers and piping.	3, 7
2	13. Explain the operation of a steam system.	3, 7
2	14. Identify and explain safety controls for low pressure steam systems.	3, 6, 7
4	15. Troubleshoot and service heating systems.	1, 4
3	16. Check furnace and boiler components.	2
3	17. Check and adjust: incoming gas manifold pressure, blower systems, and fan control.	1, 2
4	18. Perform combustion analysis and combustion air tests.	5
3	19. Verify operation of safety circuits.	2, 6
3	20. Remove and replace all applicable components.	1, 2

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. Forced Air
2. Hydronic Systems
3. Low Pressure Steam Systems
4. Heating Systems Troubleshooting