

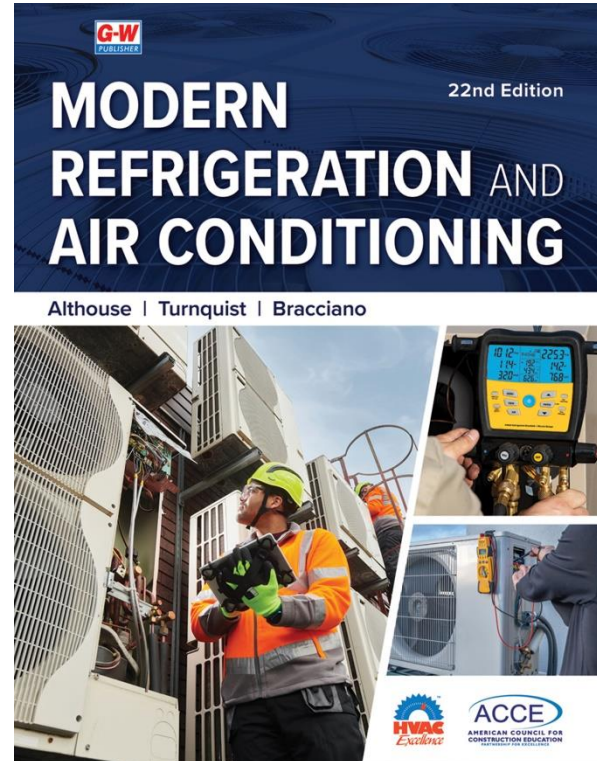


Correlation of
Modern Refrigeration and Air Conditioning, Althouse, Turnquist, Bracciano
(Goodheart-Willcox Publisher ©2025)
 to
AHRI Curriculum Guide V. Piping and Piping Practices

Goodheart-Willcox is pleased to partner with the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) and the American Council for Construction Education (ACCE) by correlating *Modern Refrigeration and Air Conditioning* to the AHRI Curriculum Guide. The following chart correlates *Modern Refrigeration and Air Conditioning* to a section of the Curriculum Guide developed by AHRI used for ACCE (formerly PAHRA) accreditation.

The chart lists the Curriculum Guide’s knowledge and task competency objectives in the left column and the corresponding chapter numbers from *Modern Refrigeration and Air Conditioning* in the right column.

For more information on the American Council for Construction Education (ACCE) and related accreditation, please visit: www.acce-hq.org



V.A. Piping Material and Fabrication	
Knowledge	Textbook Chapter(s)
1. Identify types of pipe and tubing used in refrigeration work.	Chapters 5, 23, 25, 47
2. Identify various types of fittings.	Chapters 5, 23, 25, 47
3. Describe methods of insulating pipe and tubing.	Chapters 5, 23, 25, 47
4. Identify soldering and brazing alloys used in HVACR.	Chapters 5, 47
5. Explain applications of soldering and brazing alloys.	Chapters 5, 47
6. Describe heat sink methods.	Chapters 5, 47
7. Describe heat exchange techniques.	Chapters 5, 47

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V.A. Piping Material and Fabrication (continued)	
Knowledge	Textbook Chapter(s)
8. Describe the applications and installation of vibration eliminators.	Chapters 43, 47
9. Identify types of torches.	Chapters 5, 47
Tasks	Textbook Chapter(s)
1. Flare copper tubing.	Chapter 5
2. Swage copper tubing.	Chapter 5
3. Bend copper tubing.	Chapter 5
4. Solder and braze copper tubing.	Chapter 5
5. Cut and thread steel/iron pipe.	Chapter 5
6. Solder aluminum tubing.	Chapter 5
V.B. Pipe Sizing and Troubleshooting	
Knowledge	Textbook Chapter(s)
1. Explain capacities of refrigerant lines.	Chapters 5, 47, 48, 50, 51, 52
2. Explain effects of refrigerant velocity in lines.	Chapters 5, 47, 48, 50, 51, 52
3. Explain equivalent lengths of piping for fittings.	Chapters 5, 47, 48, 50, 51, 52
4. Explain use of traps in vapor risers.	Chapters 5, 38, 47, 48, 50, 51, 52
5. Explain the effects of pressure drop in the refrigeration system.	Chapters 5, 47, 48, 49, 50, 51, 52
6. Explain gas piping.	Chapters 5, 33
Tasks	Textbook Chapter(s)
1. Calculate total effective length of pipe runs.	Chapters 5, 47, 51, 52
2. Calculate amount of refrigerant in lines.	Chapters 5, 47, 51, 52
3. Size piping using manufacturers' installation instructions.	Chapters 5, 23, 25, 47, 51, 52
4. Calculate pressure drop in liquid line risers.	Chapters 5, 47, 51, 52
5. Size liquid and vapor lines.	Chapters 5, 47, 51, 52
6. Calculate gas piping sizes to multiple units, fed from a single meter.	Chapters 5, 33

**Correlation of *Modern Refrigeration and Air Conditioning* to AHRI Curriculum Guide:
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V.C. Sheetmetal	
Knowledge	Textbook Chapter(s)
1. Explain use of bending tools.	Chapters 30, 31
2. Explain use of cutting tools.	Chapters 30, 31
3. Explain the types of ductwork and fittings.	Chapters 30, 31
Tasks	Textbook Chapter(s)
1. Demonstrate the use of tin snips left, right, and straight.	Chapters 4, 30
2. Identify the different pressures of ductwork.	Chapters 30, 31
3. Identify the different types of connections.	Chapter 30