

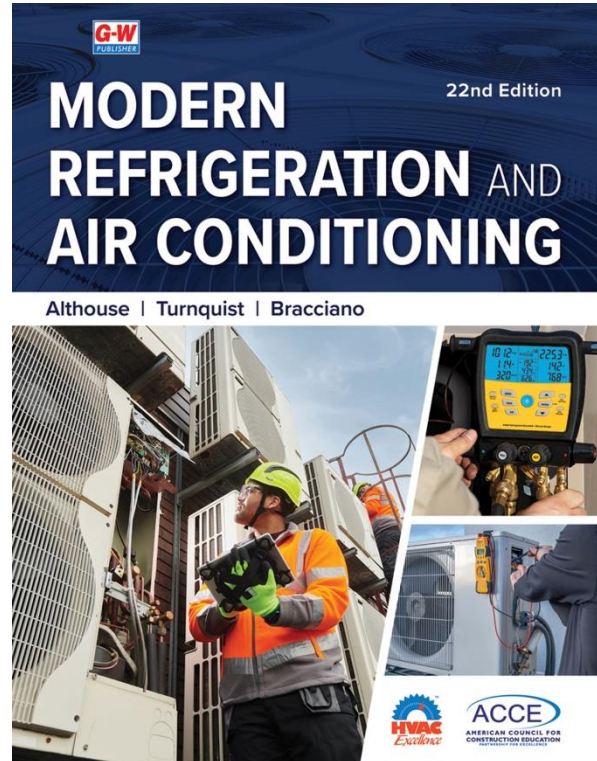


Correlation of
Modern Refrigeration and Air Conditioning, Althouse, Turnquist, Bracciano
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 to
AHRI Curriculum Guide XXII. Refrigerants and Lubricants

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



XXII.A. Refrigerants	
Knowledge	Textbook Chapter(s)
1. Explain the different classes of refrigerants:	
a. CFC refrigerants	Chapter 10
b. HCFC refrigerants	Chapter 10
c. HFC refrigerants	Chapter 10
d. HC refrigerants	Chapter 10
e. other refrigerants	Chapter 10
f. azeotropic mixtures (ASHRAE 500 series)	Chapter 10
g. zeotropic blends (ASHRAE 400 series)	Chapter 10

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XXII.A. Refrigerants (continued)	
Knowledge	Textbook Chapter(s)
2. Explain physical and chemical properties:	
a. flammability and toxicity	Chapter 10
b. materials compatibility	Chapter 10
c. miscibility and oil return	Chapter 10
d. pressure and temperature data	Chapter 10
e. refrigerant temperature glide	Chapter 10
f. environmental properties (ODP, GWP, and TEWI)	Chapter 10
g. bubble point	Chapters 10, 22
h. dew point	Chapters 10, 22
3. Define <i>pure refrigerants</i> and <i>azeotropic mixtures</i> .	Chapter 10
4. Define <i>zeotropic mixtures</i> .	Chapter 10
5. Define <i>zeotropic blends</i> .	Chapter 10
6. Identify the color and classification of refrigerants by Pantone Matching System (PMS) color number.	Chapter 10
7. Explain fractionalization of blends.	Chapter 10
Tasks	Textbook Chapter(s)
1. Look up saturation pressure and temperature:	
a. single element refrigerant	Chapter 10, Appendix B
b. azeotropic	Chapter 10, Appendix B
c. zeotropic	Chapter 10, Appendix B
d. blends	Chapter 10, Appendix B
2. Identify when saturation pressure and temperature do not match the refrigerant.	Chapters 4, 10, 11, 12, Appendix B
3. Calculate superheat and subcooling.	Chapters 4, 10, 11, 12, Appendix B
4. Calculate superheat and subcooling glide.	Chapters 4, 10, 11, 12, Appendix B

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XXII.B. Lubricants	
Knowledge	Textbook Chapter(s)
1. Explain the function of lubricants in systems.	Chapters 10, 43
2. Explain the different types and applications of lubricants:	
a. alkylbenzenes (AB)	Chapter 10, Appendix B
b. mineral oils	Chapter 10, Appendix B
c. polyolesters (POE)	Chapter 10, Appendix B
d. polyglocols (PAG)	Chapter 10, Appendix B
3. Explain properties of lubricants:	
a. materials compatibility	Chapter 10, Appendix B
b. miscibility and oil return	Chapter 10, Appendix B
c. pour point and flash point	Chapter 10, Appendix B
d. viscosity	Chapters 10, 43, Appendix B
e. water absorption	Chapter 10, Appendix B
f. rust and oxidation inhibitors	Chapter 10, Appendix B
4. Describe proper oil disposal.	—
Tasks	Textbook Chapter(s)
1. Draw oil sample from system.	Chapters 10, 21, 50
2. Demonstrate proper handling of POEs.	Chapter 50
3. Use acid test kit for mineral oil and AB.	Chapters 21, 50
4. Demonstrate proper use of a refractometer or oil sample test.	Chapters 49, 50