

3/18/2025

DATE

☒ REQUIRED COURSE
☐ ELECTIVE COURSE

TEC DIVISION
☐ NEW COURSE
☒ REVISION

Lake Land College

Course Information Form

COURSE NUMBER:	HVC-066	TITLE: (30 Characters Max)		Refrigeration II								
SEM CR HRS:	4.0	Lecture:	3.0		Lab:	2.0	ICCB Lab:	2.0	ECH:	5.0		
Course Level:	<input type="checkbox"/> Gen Ed / IAI <input type="checkbox"/> Baccalaureate /Non-IAI				<input checked="" type="checkbox"/> Career/Technical <input type="checkbox"/> Dev Ed/ Not in Degree Audit		Clinical Practicum:	0.0	Work-based Learning:	0.0	WBL ECH:	0.0
COURSE PCS #	12 - 47.0201		IAI Code		N/A		Contact Hours (Minutes/Week)					
Repeatable (Y/N):	N	Pass/Fail (Y/N):	N	Variable Credit (Y/N):	N	Min:	Max:	16 Wks	250	8 Wks	500	
Prerequisites:	IND-043											
Corequisites:	None											
Catalog Description: (40 Word Limit)	This course covers compressors, valves and metering devices in domestic refrigerator and freezer systems. Recovery, leak detection, evacuation and charging procedures are also covered. The student will gain hands-on training in installation, troubleshooting, service and repair of domestic refrigerators.											

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Compressors	3			
Domestic refrigerators, freezers and window air conditioners	8			
Leak detection, system evacuation and system clean-up	6	2		
Refrigerant and oil chemistry and management: recovery, recycling, reclaiming and retrofitting	8	8		
System charging	10	10		
Evaporators, condensers and expansion devices	10	10		
TOTAL	45	30	0	0

EVALUATION			
QUIZZES <input checked="" type="checkbox"/>	EXAMS <input checked="" type="checkbox"/>	ORAL PRES <input type="checkbox"/>	PAPERS <input type="checkbox"/>
LAB WORK <input type="checkbox"/>	PROJECTS <input checked="" type="checkbox"/>	COMP FINAL <input type="checkbox"/>	OTHER <input type="checkbox"/>

COURSE MATERIALS	
TITLE:	Refrigeration & Air Conditioning Technology
AUTHOR:	Eugene Silberstein, Jason Obrzut, John Tomczyk, Bill Whitman, Bill Johnson
PUBLISHER:	Cengage
VOLUME/EDITION/URL:	9th edition
COPYRIGHT DATE:	2021

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		<i>The student will be able to:</i>
Compressors	3	1. Identify different compressor types. 2. Categorize compressors with different refrigeration systems.
Domestic refrigerators, freezers and window air conditioners	8	1. Identify domestic refrigerators, freezers and window air conditioner construction. 2. Explain control operation for units. 3. Examine service and troubleshooting techniques for domestic refrigerators, freezers and window air conditioners.
Leak detection, system evacuation and system clean-up	8	1. Inspect units for leaks. 2. Operate vacuum pumps. 3. Monitor micron gauges. 4. Discuss different system clean-up procedures.
Refrigerant and oil chemistry and management: recovery, recycling, reclaiming and retrofitting	16	1. Operate Recovery Equipment. 2. Discuss different refrigerants and oil types. 3. Describe recycle and reclaiming procedures.
System charging	20	1. Measure refrigerants into units. 2. Critique units for proper refrigerant charge.
Evaporators, condensers and expansion devices	20	1. Discuss evaporators and condensers. 2. Compare the operation of different metering devices.
	75	

Outcomes*	At the successful completion of this course, students will be able to:
Course Outcome 1	Measure freon in refrigeration systems.
Course Outcome 2	Practice evacuation procedures of refrigeration systems.
Course Outcome 3	Employ system leak testing practices.
Primary Laker Learning Competency	Creative Thinking & Problem Solving: Students think creatively to solve problems.
Secondary Laker Learning Competency	Critical Thinking: Students connect knowledge from various disciplines to formulate logical conclusions.

*Course and program outcomes will be used in the software for outcomes assessment and should include at least 1 primary and 1 secondary Laker Learning Competency. Limit to 3-5.