

11/25/2024

DATE

☒ REQUIRED COURSE
☒ ELECTIVE COURSE

TEC DIVISION
☒ NEW COURSE
☐ REVISION

Lake Land College

Course Information Form

COURSE NUMBER:	TEC-057		TITLE: (30 Characters Max)		Intro to Renewable Energy						
SEM CR HRS:	3	Lecture:	3		Lab:	0			ECH:	3	
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	Work-based Learning:	0	WBL ECH:	0	
COURSE PCS #	12 - 15.1701		IAI Code		N/A		Contact Hours (Minutes/Week)				
Repeatable (Y/N):	Y	Pass/Fail (Y/N):	N	Variable Credit (Y/N):	N	Min:	Max:	16 Wks	150	8 Wks	300
Prerequisites:	None										
Corequisites:	None										
Catalog Description: (40 Word Limit)	This course provides students with an introduction to forms of renewable energy as well as how it is produced and utilized. Topics include photovoltaic, solar and wind energy production. (Repeatable 3 Times)										

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Introduction to renewable energy	1			
Energy sustainability and energy use	4			
Geographical considerations and renewable energy	4			
Nature and variability of solar radiation	2			
Solar thermal processes	3			
Photovoltaic applications	4			
Biomass, biofuels and biogas	6			
Hydro power	4			
Wind energy	6			
Geothermal energy	3			
New markets for renewable energy supplies	2			
Environmental considerations relating to renewable energy	2			
Integration of renewable sources into the power supply	4			
TOTAL		45	0	0

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

COURSE MATERIALS	
TITLE:	Alternative Energy: Sources & Systems
AUTHOR:	Donald L. Steeby
PUBLISHER:	Delmar Cengage Learning
VOLUME/EDITION/URL:	1st edition
COPYRIGHT DATE:	2012

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		<i>The student will be able to:</i>
Introduction to renewable energy	1	1. Identify forms and sources of renewable energy.
Energy sustainability and energy use	4	2. Describe the relationship between current energy use and sustainability.
Geographical considerations and renewable energy	4	1. Recognize the relationship between sources of energy and what is geographically feasible.
Nature and variability of solar radiation	2	1. Recognize the relationship between climate, solar radiation and forms of renewable energy.
Solar thermal processes	3	1. Recognize the relationship between solar radiation and solar thermal processes.
Photovoltaic applications	4	1. Describe solar power and solar power applications.
Biomass, biofuels and biogas	6	1. Describe the sources of biomass and the biological and physical processes that produce energy.
Hydro power	4	1. Describe the relationship between geography, climate and hydro energy.

Wind energy	6	1. Describe the relationship between geography and wind energy.
Geothermal energy	3	1. Describe the relationship between geology and geothermal processes.
New markets for renewable energy supplies	2	1. Recognize the relationship between basic economic considerations, geography and infrastructure.
Environmental considerations relating to renewable energy	2	1. Identify differences between conventional energy sources and renewable energy production.
Integration of renewable sources into the power supply	4	1. Describe social, environmental and infrastructure issues relating to renewable energy.
	45	

Outcomes*		At the successful completion of this course, students will be able to:
Course Outcome	Identify and explain the different forms of renewable energy.	
Course Outcome	Discuss how forms of renewable energy are produced.	
Course Outcome	Demonstrate a knowledge of common issues relating to geography, climate and infrastructure relating to renewable energy production.	
Course Outcome	Summarize the advantages and limitations of renewable energy production.	
Primary Laker Learning Competency		
Secondary Laker Learning Competency		

*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.