

COURSE SYLLABUS

Course Title:	Energy Accounting		Date submitted:	4/26/18 (18-21)
Department:	Business & Technology			
Curriculum:	Energy Management Program			
Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.	Course Code: (eg. ACC 101)	NRG*242	Prerequisites:	
	Course Type:	X/D	C- or better in Spreadsheet Applications (CSA*135) or permission of Program Coordinator	
	A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: Internship M: Seminar P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio			
	Elective Type:	G	Corequisites: None	
	AH: Art History E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science			
	Credit Hours:	3		
	Developmental: (yes/no)	No		
	Lecture:	1.5		
	Clinical:	0		
	Lab:	1.5		
Studio:	0			
Other:	0			
Contact Hours:	TOTAL: 3			
Class Maximum:	24	Other Requirements:		
Semesters Offered:	Sp	None		
Ability Based Education (ABE) Statement	At Tunxis Community College students are assessed on the knowledge and skills they have learned. The faculty identified the General Education Abilities critical to students' success in their professional and personal lives. In every class, students are assessed on course abilities, sometimes program abilities, and, in most classes, at least one General Education Ability. Students will receive an evaluation of the degree to which they have demonstrated or not demonstrated that General Education Ability.			
Catalog Course Description:	A comprehensive approach to energy cost reduction for commercial buildings. We will study advanced utility consumption analysis (trends, adjusted baselines, weather normalization, load factors, load shapes, baseload), the value of operation and maintenance improvements, energy saving capital improvement measures (energy conservation measures), measurement and verification of the operating conditions of energy-using equipment, and monitoring systems to maintain cost reduction, and methods of implementing energy conservation measure projects and explore different utility incentive programs.			
Topical Outline: List course content in outline format.	Intro to Energy Accounting Energy Accounting-EUI			

	<p>RE Lab: Energy Use Index Calculation Energy Accounting-EUI (part 2) Energy Trend Analysis. Trends: Annual and Monthly Weather Adjusting Lab: Scoping Walkthrough Bldg. Benchmarking End Use Split Lab: End Use Split Portfolio Manager</p> <p>RCM – Resource Conservation Manager Lab - Portfolio Manager</p> <p>Operations.& Maintenance Datalogging Lab: Datalogger Install O&M Opportunities Lab: Datalogger Retrieve O&M Opportunities 2 Lab: O&M Field Work</p> <p>Measurement & Verification Measure & Verify Lab: ECM Field Work</p> <p>Project Implementation Implementation DBB and DB</p> <p>Funding and Incentive Programs Incentive Programs</p> <p>Final</p>
<p>Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p>	<p>Upon successful completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> • utilize the conversion and calculation of energy units for analysis • gather data for energy accounting • demonstrate an understand utility rates and schedules • organize energy data • analyze and present energy data using adjusted baselines • make recommendations based on cost avoidance, load factors • demonstrate use of EPA's Portfolio Manager software. <p>PROGRAM: <i>(Numbering reflects Program Outcomes as they appear in the college catalog)</i></p> <ol style="list-style-type: none"> 1. evaluate energy use patterns of residential and commercial buildings 2. recommend energy efficiency and renewable energy solutions for high energy consuming buildings 3. demonstrate an understanding of the interaction between energy consuming building systems and based on that understanding make energy consumption recommendations 4. produce energy evaluation technical reports and make presentations leading to project implementation 5. develop and evaluate inferences and predictions that are based on collected data 6. read and analyze building blue prints including floor, mechanical, and electrical 7. use problem-solving techniques & mathematics to transform concepts into energy

	<p>related projects</p> <p>GENERAL EDUCATION: <i>(Numbering reflects General Education Outcomes as they appear in the college catalog)</i></p> <p>5. Information Literacy/Continuing Learning - Students will be able to use traditional and digital technology to access, evaluate, and apply information to the needs or questions confronting them throughout their academic, professional, and personal lives.</p> <p>Demonstrates: Collects and synthesizes relevant and authoritative information resources appropriate to need and audience and utilizes current technologies to solve problems, complete projects, and make informed decisions.</p> <p>Does Not Demonstrate: Does not collect and synthesize relevant and authoritative information resources appropriate to need and audience nor satisfactorily utilize current technologies to solve problems, complete projects, and make informed decisions.</p>
<p>Evaluation: List how the above outcomes will be assessed.</p>	<ul style="list-style-type: none"> • Assignments/Spreadsheets • Quizzes (2) • Final Exam / Project • Class Participation • Instructor Evaluation
<p>Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p>	<p>Required: Computer Classroom with Internet Access</p> <p>Desired: None</p>
<p>Textbook(s)</p>	<p>Energy-Efficient Operation of Commercial Buildings, Herzog.(purchase from Ginny, Office 252) ISBN 978-0070284685, McGraw-Hill</p>