NEW COURSE SYLLABUS

Tunxis Community College

Education That Works For a Lifetime

Course Title:	Building Efficiency Auditing	**Date submitted:**	Fall 2016 (AAC: 16-52)
Department:	Business & Technology Department		
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*131
Course Type:	X/D

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

AH: Art History E: English FA: Fine Arts G: General
HI: History HU: Humanities LA: Liberal Arts
FL: Foreign Language M: Math S: Science
SS: Social Science

Credit Hours:	3
Developmental: (yes/no)	No
Contact Hours: Lecture:	2
Clinical:	0
Lab:	2
Studio	0
Other:	0
TOTAL:	4
Class Maximum:	24
Semesters Offered:	Sp

Prerequisites:

Placement into Introductory Algebra (MAT*094) AND placement into Composition (ENG*101) or higher, or permission of Program Coordinator.

Corequisites:

None

Other Requirements:

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:

Provides the basic knowledge for students to conduct energy audits of residential and small commercial buildings. Course content is planned to help students successfully pass the BPI and RESNET entry level certification exams.

Topical Outline: List course content in outline format.

1. Principles of Energy and Building Science
2. The Energy Audit Process
3. Building Shell and Thermal Envelope
4. Airflow Basics
5. Moisture Management
6. Air Quality

	7. Combustion Safety and CO Monitoring 8. Building Systems: HVAC, Lighting, Appliances, and DHW 9. Diagnosing Common Building Problems 10. Blower Door Testing 11. Combustion Testing and Safety 12. HERS Rating 13. Computer Modeling
Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.	• apply the fundamentals of Building Science to real life building situations • demonstrate the ability to use energy and financial calculations to recommend strategies to achieve sustainable, energy efficient, safe and healthy homes and buildings • Field-analyze and report on the energy efficiency, health and safety of structures according to BPI Building Analyst requirements
	PROGRAM: *(Numbering reflects Program Outcomes as they appear in the college catalog)* 1. evaluate energy use patterns of residential buildings 2. recommend energy efficiency and renewable energy solutions for high energy consuming buildings 3. understand 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.** use problem-solving techniques & mathematics to transform concepts into energy related projects
	GENERAL EDUCATION: *(Numbering reflects General Education Outcomes as they appear in the college catalog)* **2. Critical Analysis/ Logical Thinking -** Students will be able to organize, interpret, and evaluate evidence and ideas within and across disciplines; draw reasoned interferences and defensible conclusions; and solve problems and make decisions based on analytical processes. **Demonstrates**: Identifies the issue(s); formulates an argument; explains and analyzes relationships clearly; draws reasonable inferences and conclusions that are logical and defensible; provides support by evaluating credible sources of evidence necessary to justify conclusions. **Does Not Demonstrate:** Identifies few or no issues; formulates an argument without significant focus; provides an unclear explanation of analysis and relationships; drawing few reasonable inferences and conclusions that are illogical and indefensible; provides little to no support using credible sources of evidence necessary to justify conclusions.
Evaluation: List how the above outcomes will be assessed.	**Assessment will be based on the following criteria:** 1. Class participation 2. Homework, Activities, Quizzes 3. Field projects 4. Midterm and Final Exam

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.	**Required:** None **Desired:** None
Textbook(s)	Recommended, latest versions of: Residential Energy: Cost Savings and Comfort for Existing Buildings, by John Krigger & Chris Dorsi; 6th Edition Preferred (5th Ed. OK) Saturn Energy Auditor Field Guide, by John Krigger and Chris Dorsi;