

**University of Arkansas - Fort Smith**  
**5210 Grand Avenue**  
**P. O. Box 3649**  
**Fort Smith, AR 72913-3649**  
**479-788-7000**

## **General Syllabus**

### **ELEC 3413 Energy Auditing**

Credit Hours: 3

Lecture Hours: 2

Laboratory Hours: 2

Prerequisite: Junior standing or consent of department head

Effective Catalog: 2018-2019

#### **I. Course Information**

##### **A. Catalog Description**

The three major areas of Energy Auditing featured in this course – Insulation and Lighting, Passive Solar Heating and Ventilation and RESINET National Rater Certification – represent the most effective energy conservation options for achieving high levels of energy conservation and minimizing carbon emissions. It also prepares the student for green collar employment and certification in the Energy Auditing field.

##### **B. Additional Information - None**

#### **II. Student Learning Outcomes**

##### **A. Subject Matter**

Upon successful completion of this course, the student will be able to:

1. Explain the need for energy auditing.
2. Evaluate lighting and heating systems.
3. Evaluate insulation materials.
4. Perform energy auditing tests.
5. Research and apply the use of passive solar systems.
6. Complete a real-world energy auditing design.
7. Practice safety in the lab and the workplace.
8. Reference and comply with appropriate building codes, standards, regulations and laws.
9. Understand blue print reading

##### **B. University Learning Outcomes**

This course enhances student abilities in the following areas:

**Analytical Skills**

**Critical Thinking** - Students will analyze and troubleshoot the variances in energy efficient design utilized in both commercial and residential buildings by using the scenarios available in the UAFS Sustainable Conservation House and in-class lab panels.

**Quantitative Reasoning** - Students will apply mathematics to solve various application problems.

**III. Major Course Topics**

- A. Energy auditing
- B. Energy and power
- C. Residential and commercial structures
- D. Energy conservation
- E. Passive solar systems
- F. Green building
- G. Safety
- H. Building codes and compliance
- I. Understanding blueprints