COURSE IDENTIFICATION

Course Code/Number: ENRG 218
Course Title: Energy Control Strategies

Division: ☒ Workforce Development (WD)
          ☐ Applied Science (AS)  ☐ Liberal Arts (LA)
          ☐ Health Care (HC)    ☐ Lifetime Learning (LL)
          ☐ Nursing             ☐ Developmental

Credit Hour(s): Three (3)

Effective Date: SP2009/Fall2013

Assessment Goal Per Outcome: 70%

COURSE DESCRIPTION

This course includes building system control theory and devices, including electric, pneumatic, and digital controls. An emphasis is placed on identifying and understanding control strategies related to energy using systems and methods to estimate energy savings. Hands-on labs reinforce device identification.

MINIMUM REQUIREMENTS/PREREQUISITES AND/OR COREQUISITES

ENRG 106 Residential HVAC Systems Analysis
ENRG 212 Methods of Energy Calculation

TEXTS

The official list of textbooks and materials for this course is found on Inside NC.

http://www.neosho.edu/ProspectiveStudents/Registration/CourseSyllabi.aspx

GENERAL EDUCATION OUTCOMES

1. Practice Responsible Citizenship through:
   • identifying rights and responsibilities of citizenship,
   • identifying how human values and perceptions affect and are affected by social diversity,
- identifying and interpreting artistic expression.

2. Live a healthy lifestyle (physical, intellectual, social) through:
   - listing factors associated with a healthy lifestyle and lifetime fitness,
   - identifying the importance of lifetime learning,
   - demonstrating self-discipline, respect for others, and the ability to work collaboratively as a team.

3. Communicate effectively through:
   - developing effective written communication skills,
   - developing effective oral communication and listening skills.

4. Think analytically through:
   - utilizing quantitative information in problem solving,
   - utilizing the principles of systematic inquiry,
   - utilizing various information resources including technology for research and data collection.

COURSE OUTCOMES/COMPETENCIES (as Required)

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

1. Demonstrate an understanding of building system control theory.
2. Identify system control devices.
3. Identify the types of control devices and appropriate uses for each.
4. Demonstrate an understanding of control strategies related to energy using systems and how to estimate energy savings.
5. Complete an energy efficiency control calculation project.

MINIMUM COURSE CONTENT

The following topics must be included in this course. Additional topics may also be included.

1. Introduction
2. Types of Controls
3. Appropriate Controls for specific systems.
4. Application
5. Calculation of energy savings
6. Cost analysis

STUDENT REQUIREMENTS AND METHOD OF EVALUATION

INSTRUCTIONAL METHODS

1. Lecture
2. Audio-Visual aids
3. Example and demonstration
4. Class discussions
5. Field trips and guest speakers
6. Tests (written)
7. Skills tests (performance-based)

STUDENT REQUIREMENTS

Evaluation of student performance is determined primarily from results of written tests to validate mastery of course competencies.

GRADING SCALE

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ASSESSMENT OF STUDENT GAIN

Students will be assessed through written testing. Comparison will determine the extent of student gain.

Attendance Policy

1. NCCC values interactive learning which promotes student engagement in the learning process. To be actively engaged, the student must be present in the learning environment.

2. Unless students are participating in a school activity or are excused by the instructor, they are expected to attend class. If a student’s absences exceed one-eighth of the total course duration, (which equates to one hundred (100) minutes per credit hour in a face-to-face class) the instructor has the right, but is not required, to withdraw a student from the course. Once the student has been dropped for excessive absences, the registrar’s office will send a letter to the student, stating that he or she has been dropped. A student may petition the chief academic officer for reinstatement by submitting a letter stating valid reasons for the absences within one week of the registrar’s notification. If the student is reinstated into the class, the instructor and the registrar will be notified. Please refer to the Student Handbook/Academic Policies for more information.

3. Absences that occur due to students participating in official college activities are excused except in those cases where outside bodies, such as the State Board of Nursing, have requirements for minimum class minutes for each student. Students who are excused will be given reasonable opportunity to make up any missed work or receive substitute assignments from the instructor and should not be penalized for the absence. Proper procedure should be followed in notifying faculty in advance of the student’s planned participation in the event. Ultimately it is the student’s responsibility to notify the instructor in advance of the planned absence.

ACADEMIC INTEGRITY
NCCC expects every student to demonstrate ethical behavior with regard to academic pursuits. Academic integrity in coursework is a specific requirement. Definitions, examples, and possible consequences for violations of Academic Integrity, as well as the appeals process, can be found in the College Catalog, Student Handbook, and/or Code of Student Conduct and Discipline.

ELECTRONIC DEVICE POLICY

Student cell phones and other personal electronic devices not being used for class activities must not be accessed during class times unless the instructor chooses to waive this policy.

NOTE:
Information and statements in this document are subject to change at the discretion of NCCC. Students will be notified of changes and where to find the most current approved documents.

NOTE:
If you are a student with a disability who may need accommodation(s) under the Americans with Disabilities Act (ADA), please notify studentdevelopmentteam@neosho.edu, Chanute Campus, 620-431-2820, ext. 213., or Ottawa Campus, 785-242-2067 ext. 305, as soon as possible. You will need to bring your documentation for review in order to determine reasonable accommodations, and then we can assist you in arranging any necessary accommodations.

COURSE NOTES