Wayne County Community College District

COURSE SYLLABUS

RET 140  Energy and Electricity

CREDIT HOURS:  3.00

CONTACT HOURS:  45.00

COURSE DESCRIPTION:
In this course, students will learn the fundamentals of energy and electricity and how they are utilized in renewable energy sources. Students will examine the power generation process, transmission techniques, and networks. Topics to be explored during this course include: prime energy sources, metering electricity, and disbursement of energy and electricity.

PREREQUISITES:  MAT 121

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

1. Understand the basic nature of energy, force, work and power
2. Understand fundamental concepts of electrical power
3. Discuss DC electrical systems, and system components/properties (loads, resistance, capacitance and inductance)
4. Discuss AC electrical systems, and system components/properties (loads, resistance, capacitance, inductance and frequency response)
5. Understand energy conversion methods, specifically to and from electric energy
6. Understand and discuss Single and Three phase electrical power
7. Describe electrical power transmission, and the transformers used for transmission
8. Discuss electrical power distribution and the power grid
9. Understand household electrical systems and power consumption
10. Describe alternate forms of power generation
11. Discuss methods of connecting alternate power/generation sources to the power grid

ASSESSMENT METHODS:
Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:
90%-100% = A
80%-89.9% = B
70%-79.9% = C
60%-69.9% = D
<60% = E