

COURSE SYLLABUS

DIVISION: Workforce Services

CURRICULA IN WHICH COURSE IS TAUGHT: Career Studies Certificate – Alternative Energy

COURSE NUMBER AND TITLE: ENE 100 Conventional Alternative Energy (4 Crs)

CREDITS: 4

HOURS/WEEK LECTURE: 4

HOURS/WEEK LAB: 2

LECTURE/LAB COMBINATION: 4 (2)

I. CATALOG DESCRIPTION:

Provides an overview of hydroelectric, coal, and nuclear energy production methods and renewable solar, geothermal, wind, and fuel cell technology. A complete system breakdown of conventional power production methods, efficiency, and sustainability when compared with solar, Lecture 3 hours. Laboratory 3 ours. Total 6 hours per week. 4 credits

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES IN WHICH IT IS TAUGHT: Course will provide a basic introduction to conventional Alternative Energy.

III. REQUIRED BACKGROUND: None

IV. COURSE CONTENT/COURSE OUTLINE

- Principles of renewable energy
- Essentials of Fluid Dynamics
- Heat Transfer
- Solar Radiation
- Solar Water Heating
- Buildings and other Solar Applications
- Photovoltaic Generation
- Hydro Power
- Wind Generated Power
- The Photosynthetic Process
- Biomass and Bio-fuels
- Wave Power
- Tidal Power
- Ocean Thermal Energy Conversion
- Geothermal Energy
- Energy Systems, Storage and Transmission
- Institutional and Economic Factors

V. LEARNER OUTCOMES:**VI. EVALUATIONS:**

<p>Upon completion of this course the student should be able to:</p> <ol style="list-style-type: none">1. Describe the differences between the forms of alternate energy systems.2. Explain the major components of each alternate energy systems, and their advantages and disadvantages.3. Discuss the various cost factors and gains from each system.	<p>Combination of attendance, class participation, lab exercises, homework, and test.</p>
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The course supports the followings student objectives:DCC Student Learning Outcomes

Communication
Critical Thinking
Cultural and Social Understanding
Personal Development
Information Literacy