### RENEWABLE ENERGY INTRODUCTION AND OVERVIEW

<table>
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<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credit Value (Breakdown of theory and lab credits)</th>
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</thead>
<tbody>
<tr>
<td>RE 103</td>
<td>RENEWABLE ENERGY INTRODUCTION AND OVERVIEW</td>
<td>3, 3T+0S</td>
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**Catalog Course Description**

In this course you will view the past, present, and future fields of renewable energy used to: heat, light, and cool buildings; produce domestic hot water; power, heat, and cool industrial processes; provide transportation; and provide communications. You will cover many systems: passive, active, and photovoltaic solar; wind; micro-hydro; wave; geothermal; biomass; fuel cells; human and animal power; and hydrogen. You will also cover vehicle fuels, such as ethanol, biodiesel, CNG, along with electric and hybrid systems, regenerative braking, and flywheels. Classes will be conducted both on- and off-campus. **Prerequisite:** ENG 108N and MATH 100N. (3, 3T+0S)

**Student Learning Outcomes/Objectives/Competencies of the Course**

- List and generally explain the main sources of energy and their primary applications in the US, and the world.
- Describe the challenges and problems associated with the use of various energy sources, including fossil fuels, with regard to future supply and the environment.
- Discuss remedies/potential solutions to the supply and environmental issues associated with fossil fuels and other energy resources.
- List and describe the primary renewable energy resources and technologies. Describe/illustrate basic electrical concepts and system components.
- Convert units of energy—to quantify energy demands and make comparisons among energy uses, resources, and technologies.
- Collect and organize information on renewable energy technologies as a basis for further analysis and evaluation.

**College-Wide Student Learning Outcomes**

- Cultural Competence