### Renewable Energy - Student Learning Outcomes

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<th>Course</th>
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| RNEW 118 | Alternative Energies | 1. Describe the operation of Hydropower plants. (ILO1, ILO2)  
2. Explain the different types of combustion turbines. (ILO1, ILO2)  
3. Describe the fundamental blocks of Solar Energy systems and their architecture. (ILO1, ILO2)  
4. Describe the fundamentals of Geothermal, Ocean, Nuclear and Hydrogen Energy systems. (ILO1, ILO2) |
| RNEW 150 | Solar Energy Systems PV1 | 1. Identify the laws of solar energy, its effects and understand electrical power generation from solar energy. (ILO2, IL3)  
2. Explain the photovoltaic systems principles, applications, configurations, components, functions and sizing. (ILO1, ILO2)  
3. Understand photovoltaic systems protection, disconnects, grounding, installation, maintenance and troubleshooting utilizing National Electrical Code. (ILO2, ILO3) |
| RNEW 151 | Solar Electrical Systems PV2 | 1. understand photovoltaic system wiring, size wires, protection and grounding to NEC standards. (ILO2, ILO3)  
2. understand grid-tied photovoltaic system, with and without battery. (ILO2, ILO3)  
3. install photovoltaic systems, mounting and trackers. (ILO2, ILO3)  
4. demonstrate installation safety, maintenance, and troubleshooting. (ILO2, ILO3) |
| RNEW 152 | Solar Heating (SH) | 1. Understand and analyze various factors such as solar water and space heating system design, tank and pipe insulation, automatic controls, related water treatment, conservation, standby and distribution losses. (ILO2, ILO4, ILO5)  
2. Demonstrate knowledge and Critically evaluate and understand various solar collectors, by defining the operation and efficiency of each system. (ILO1, ILO2)  
3. Analyze and Identifying proper use of balance of system components and materials. (ILO1, ILO2, ILO5) |
| RNEW 165 | NABCEP Entry Level Exam Preparation | 1. Identify and accomplish preparation for taking NABCEP PV and SH Entry Level Exams. (ILO 1, 2, 3, 4) |