

# Alternative Energy Systems

Career Cluster	STEM
Course Code	21060
Prerequisite(s)	None
Credit	.5
Program of Study and Sequence	Foundational Courses, Cluster Courses, Pathway Courses, Capstone Experience
Student Organization	None
Coordinating Work-Based Learning	None
Industry Certifications	None
Dual Credit or Dual Enrollment	TBD
Teacher Certification	STEM Cluster Endorsement; Energy Pathway Endorsement; 7-12 Technology Education Endorsement
Resources	Teaching Renewable Energy: <a href="http://www.ucsusa.org/sites/default/files/legacy/assets/documents/clean_energy/renewablesready_fullreport.pdf">http://www.ucsusa.org/sites/default/files/legacy/assets/documents/clean_energy/renewablesready_fullreport.pdf</a> National Renewable Energy Laboratory: <a href="http://www.nrel.gov/docs/gen/fy01/30927.pdf">http://www.nrel.gov/docs/gen/fy01/30927.pdf</a> <a href="http://www.nrel.gov/education/educational_resources.html">http://www.nrel.gov/education/educational_resources.html</a>

## Course Description:

This course serves as an introductory course in alternative energy. This is a survey of wind, biomass, solar, geothermal, and other non-traditional energy sources.

## Program of Study Application

This is a STEM Pathway Course for the Energy Pathway, preceded by a Foundational Course(s) and a Cluster Course(s).

**Course Standards**

<b>Indicator # AES 1 Understand the historical development of alternative energy systems</b>		
<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
<b>Level 3: Strategic Thinking</b>	AES 1.1 Understand the historical background of alternative energy generation	
<b>Level 3: Strategic Thinking</b>	AES 1.2 Analyze the role of society in the use of energy generation	
<b>Level 4: Extended Thinking</b>	AES 1.3 Analyze the cultural, socioeconomic and political effects of alternative energy technologies	
<b>Level 3: Strategic Thinking</b>	AES 1.4 Understand the environmental impact of energy production and consumption	
<b>Indicator # AES 2 Understand the types of major energy systems</b>		
<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
<b>Level 3: Strategic Thinking</b>	AES 2.1 Analyze the characteristics of wind energy generation systems	
<b>Level 4: Extended Thinking</b>	AES 2.2 Analyze the characteristics biomass energy generation systems	
<b>Level 4: Extended Thinking</b>	AES 2.3 Analyze the characteristics of solar energy generation systems	
<b>Level 4: Extended Thinking</b>	AES 2.4 Analyze the characteristics of geothermal energy generation systems	

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<b>Level 2: Skill/Concept</b>	AES 2.5 Analyze the characteristics of traditional energy generation systems	
<b>Level 4: Extended Thinking</b>	AES 2.6 Model an alternative energy system	
<b>Indicator # AES 3 Research alternative energy careers and trends in energy development</b>		
<i>Webb Level</i>	<i>Sub-indicator</i>	<i>Integrated Content</i>
<b>Level 3: Strategic Thinking</b>	AES 3.1 Identify careers in alternative energy	
<b>Level 1: Recall</b>	AES3.2 Identify future energy resources	