

ASSOCIATE OF SCIENCE - RENEWABLE ENERGY AND RESOURCES EMPHASIS

This is an interdisciplinary emphasis that draws on courses in Engineering, Environmental Science, Geography, and Geoscience. The emphasis is designed for students seeking a broad exposure to the spectrum of renewable energy technologies and resources. Some specific components of the emphasis include:

1. understanding what constitutes a source of renewable energy and how renewable energy relates to the energy mix, currently dominated by the fossil fuels (coal, petroleum, and natural gas);
2. learning about the different types of renewable energy technologies, including the attributes and limitations of each; and
3. understanding the differences between renewable and nonrenewable resources and the implication their development has on global processes, including global climate change.

Students completing this emphasis will partially fulfill requirements for multiple baccalaureate degree programs at the University of Nevada, Reno (UNR), specifically in Engineering, Environmental Science, Geography, and Geology, and similar programs at other four year institutions. Completion of the emphasis can fulfill half the requirements for the renewable energy minor at UNR for any baccalaureate major.

Emphasis Outcomes

Students completing the emphasis will:

- Describe the various types of renewable energy technologies and renewable resources available and identify the attributes and limitations of each.
- Relate how sources of renewable energy and traditional sources of energy affect the environment locally and globally.
- Apply concepts learned in course work to laboratory activities and field studies that allow hands on learning simulating real-world investigations.

AA/AS degrees are designed for students who plan to transfer to a four-year college or university.

To earn an AA/AS degree, students must:

1. Maintain a minimum cumulative GPA of 2.0 (see requirements for graduation.)
2. Complete a minimum of 15 units within the college.
3. Satisfy General Education requirements for the AA/AS (<http://catalog.tmcc.edu/degrees-certificates/general-education/aa-as>).
4. Have no financial or library obligation to the college.

General Education Requirements

<i>English</i>	3-6
Required:	
Must include ENG 102 or ENG 114 ¹	
<i>Fine Arts</i>	3
<i>Humanities</i>	3
Recommended:	

CH 203	American Experiences and Constitutional Change (also satisfies U.S. and Nevada Constitutions)	
<i>Mathematics</i>		3
Required:		
MATH 127	Pre-Calculus II (or higher)	
<i>Science</i>		[6]
Required:		
CHEM 121	General Chemistry I	4
CHEM 122	General Chemistry II	4
<i>Social Science</i>		3
Recommended:		
GEOG 200	World Regional Geography (also satisfies Diversity)	
Additional College Requirements		
<i>Diversity</i> ²		[3]
Recommended:		
GEOG 200	World Regional Geography	
<i>Science</i>		[6]
Required:		
PHYS 151	General Physics I	4
or PHYS 180 & 180L	Physics for Scientists and Engineers I and Physics for Scientists/Engineers Lab I	
CHEM 121	General Chemistry I (additional unit satisfied through General Education)	[1]
CHEM 122	General Chemistry II (additional unit satisfied through General Education)	[1]
<i>U.S. and Nevada Constitutions</i> ²		[3]
Recommended:		
CH 203	American Experiences and Constitutional Change	
Degree Requirements		
ENV 101	Introduction to Environmental Science	3
ENGR 110	Introduction to Renewable Energy	3
GEOG 121	Climate Change: the Science Basis	4
GEOL 206	Geology of Geothermal Energy Resources	3
GEOG 210	Introduction to Geotechnology	3
NRES 210	Environmental Pollution	3
STAT 152	Introduction to Statistics	3
Elective Requirements		
Select 8-11 units from the following:		8-11
Course(s) from BIOL, ENGR, ENV, GEOG, GEOL, or MATH		
Recommended:		
GEOL 100	Earthquakes, Volcanoes and Natural Disasters	
or GEOL 101	Geology: Exploring Planet Earth	
Total Units		60
¹ If you place into ENG 102 or ENG 114 the additional 3 required units will become elective units.		
² Course may also count toward degree requirements. Please consult with Academic Advisement.		
Course	Title	Units
1st semester		
Elective ⁴		3

ENG 101	Composition I	3
or ENG 113	or Composition I for International Students	
ENGR 110	Introduction to Renewable Energy	3
Fine Arts ³		3
MATH 127	Pre-Calculus II (or higher)	3
Semester Total		15
2nd semester		
CHEM 121	General Chemistry I	4
ENG 102	Composition II	3
or ENG 114	or Composition II For International Students	
ENV 101	Introduction to Environmental Science	3
GEOL 206	Geology of Geothermal Energy Resources	3
STAT 152	Introduction to Statistics	3
Semester Total		16
3rd semester		
CHEM 122	General Chemistry II	4
GEOG 210	Introduction to Geotechnology	3
Humanities/U.S. and Nevada Constitutions ⁴		3
NRES 210	Environmental Pollution	3
Social Science ⁴		3
Semester Total		16
4th semester		
Elective ⁴		5
GEOG 121	Climate Change: the Science Basis	4
PHYS 151	General Physics I	4
or	or Physics for Scientists and Engineers I <i>and</i>	
PHYS 180	Physics for Scientists/Engineers Lab I	
<i>and</i>		
PHYS 180L		
Semester Total		13
Total Units		60

³ See approved General Education list for the AA/AS Degree. (<http://catalog.tmcc.edu/degrees-certificates/general-education/aa-as>)

⁴ See program recommendations or requirements.