



## DEGREE SHEET / 2017-2018 CATALOG

Student Name:

Eagle ID:

Eagle Email:

Phone:

### ASSOCIATE OF APPLIED SCIENCE in RENEWABLE ENERGY

Renewable energy careers are an integral part of our new and emerging economies. New Mexico is known for its vast natural resources, and today it is also becoming a center for the development of alternative energies.

Northern's AAS in RENEWABLE ENERGY is a hands-on program that emphasizes the basic science and technology of alternative/renewable energy resources, and develops the primary skills needed for a variety of alternative energy careers, including energy conservation and management, and design, installation, and maintenance of alternative energy systems focusing on solar thermal, solar photovoltaic, wind and geothermal energy.

Students in the program will be invited to explore industrial certifications in Project Management to boost their employment qualifications. Program graduates who are interested in pursuing a bachelor's degree may transfer all of their credits to our Bachelor's in ELECTROMECHANICAL ENGINEERING TECHNOLOGY program.

GENERAL EDUCATION REQUIREMENTS (28 Credits)	SEMESTER	GRADE
<b>AREA I: COMMUNICATIONS (9 Credits)</b>		
ENG 111 English Composition I (3) <i>Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation</i>		
ENG 116 Technical Writing (3) <i>Pre-requisite: ENG 111</i>		
SPCH 130 Public Speaking (3) <i>Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation</i>		
<b>AREA II: MATHEMATICS/COMPUTERS/LABORATORY SCIENCE (6 Credits)</b>		
ENGR 110 Introduction to Engineering (2) <i>Pre-requisite: None</i>		
ENGR 115 Basic Math for Engineering Applications (4) OR <i>Pre-requisites: MATH 100</i> MATH 130 Intermediate Algebra (4) <i>Pre-requisites: MATH 100</i>		
<b>AREA III: LABORATORY SCIENCE (4 Credits)</b> Choose either PHYS 121/L (4 credits) or ENGR 121L (2 credits) and ENGR 215 (2 credits)		
PHYS 121/L Applied Physics with lab (4) <i>Pre-requisite: MATH 130</i>		
ENGR 121L Introductory Math for Engineering Applications I (2) <i>Pre-requisite: MATH 150 or adequate score on the Course Placement Evaluation</i>		
ENGR 215 Physics for Engineers I (2) <i>Pre-requisite: ENGR 121L</i>		

<b>AREA IV: SOCIAL/BEHAVIORAL SCIENCES (3 Credits)</b> <i>Students must complete a minimum of 15 credit hours spread between areas IV and V.</i>		
Elective (3) You must select courses from the approved list in the Catalog for GenEd		
<b>AREA V: HUMANITIES and FINE ARTS (3 Credits)</b> <i>Students must complete a minimum of 15 credit hours spread between areas IV and V.</i>		
Elective (3) You must select courses from the approved list in the Catalog for GenEd		
<b>AREA VI: FIRST YEAR EXPERIENCE (3 Credits)</b>		
FYE 101 First Year Experience (3) <i>Pre-requisite: None</i>		
<b>PROGRAM REQUIREMENTS (33-35 Credits)</b>		
<b>General (3 Credits)</b>		
RE 103 Renewable Energy Introduction and Overview (3) <i>Pre-requisite: ENG 108 and MATH 100N</i>		
<b>Solar Heating (8 Credits)</b>		
ADOB 107 Passive Solar Heating (3) <i>Pre-requisite: ENG 108 and MATH 100N</i>		
RE 108 Active Solar Heating (3) <i>Pre-requisite: RE 108L</i>		
RE 108L Solar Energy Lab (2) <i>Pre-requisite: RE 108 or ADOB 107</i>		
<b>Renewable Electric and Electronics (20 Credits)</b>		
ELEC 110 Introduction to Solar Electricity (1) <i>Pre-requisite: None</i>		
ELEC 110L Introduction to Solar Electricity Lab (2) <i>Pre-requisite: None</i>		
ELEC 140 Electrical Theory I (3) <i>Pre-requisite: None</i>		
ELEC 141 Electrical Code I (3) <i>Pre-requisite: None</i>		
ELEC 150 Electrical Theory II (3) <i>Pre-requisite: ELEC 140 Electrical Theory I</i>		
ELEC 151 Electrical Code II (3) <i>Pre-requisite: ELEC 141 Electrical Code I</i>		
ELEC 190 Solar and Wind Systems in Electric Code (2) <i>Pre-requisite: None</i>		
RE 111 Beginning Photovoltaic Installation (3) <i>Pre-requisite: None</i>		
<b>Renewable Electric and Electronics Electives (2-4 Credits)</b>		
RE 127 Geothermal Systems for Heat and Power (4) <i>Prerequisite: RE 103</i>		
RE 128 Biomass Systems for Heat, Power, and Cogeneration (4) <i>Prerequisite: RE 103</i>		
RE 129 Trends and Emerging Energy Sources (2) <i>Prerequisite: RE 103</i>		
RE 160 Renewable Electric Power Systems (3) <i>Prerequisite: RE 103</i>		
RE 207 Wind Electric System Design and Installation (4) <i>Prerequisites: ENG 108N, MATH 100N, RE 103</i> <i>Co-requisite: ELEC 190 (2)</i>		

RE 208 Photovoltaic System Design and Installation (4) <i>Prerequisites: ENG 108N , MATH 100N , RE 103 and ECET 160.</i> <i>Co-requisite: ELEC 190</i>		
RE 212 Advanced Photovoltaic Installation (3) <i>Pre-requisite: RE 111</i>		
<b>TOTAL CREDITS 61-63</b>		
<b>ADVISOR APPROVAL</b>	<b>DATE</b>	

## SUGGESTED SEQUENCE OF COURSES

### **FIRST SEMESTER (14 Credits)**

ENG 111 English Composition I (3)  
FYE 101 First Year Experience (3)  
ENGR 110L Introduction to Engineering (2)  
ELEC 140 Electrical Theory I (3)  
RE 103 Renewable Energy Introduction and Overview (3)

### **SECOND SEMESTER (16 Credits)**

ELEC 110 Introduction to Solar Energy (1)  
ELEC 110L Introduction to Solar Energy Lab (2)  
ENGR 115 Basic Math for Engineering Apps (4) or MATH 130 Intermediate Algebra (4)  
ELEC 150 Electrical Theory II (3)  
ELEC 141 Electrical Code I (3)  
ADOB 107 Passive Solar Heating (3)

### **THIRD SEMESTER (15 Credits)**

ELEC 151 Electrical Code II (3)  
ELEC 190 Solar and Wind Systems in Electric Code (2)  
ENG 116 Technical Writing (3)  
PHYS Elective (4)  
RE 111 Beginning Photovoltaic Installation (3)

### **FOURTH SEMESTER (16-18)**

SPCH 130 Public Speaking (3)  
RE Elective (2-4)  
RE 108 Active Solar Heating (3)  
RE 108L Solar Energy Lab (2)  
SBS Elective (3)  
HFA Elective (3)

# EDUCATIONAL PLANNING FORM (Semester)

<b>FALL SEMESTER</b>	<b>SPRING SEMESTER</b>	<b>SUMMER</b>
<b>Total Units</b>	<b>Total Units</b>	<b>Total Units</b>
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