

RENEWABLE ENERGY TECHNOLOGY, AAS

Program Code: AAS.RNEWNRGYTECH

The Renewable Energy Technology (RET) program provides technical training for employment in the field of manufacturing, installation and maintenance of renewable energy systems and products. Graduates will be prepared to integrate, install and make repairs related to equipment and controls. This program takes a broad-based approach to training renewable energy technicians, with emphasis on mechanical and electro-mechanical systems, fluid power, instrumentation and controls as well as systems troubleshooting. RET graduates will be prepared to work in the capacity of a technician with specialized skills in energy system measurement, energy efficiency, system design and electronic controls.

For information contact the Industrial Technology Department at 503-594-3318.

Outcomes

Related Instruction Outcomes

Computation

- 1 course - MTH-050 Technical Mathematics I
- Use appropriate mathematics to solve problems.

Communication

- 1 course - WR-101 Communication Skills: Occupational Writing
- Read actively, think critically, and write purposefully and capably for professional audiences.

Human Relations

- 3 credits - See [Related Instruction](#) for course list
- Engage in ethical communication processes that accomplish goals.

Physical Education/Health/Safety/First Aid

- 1 course - MFG-107 Industrial Safety & First Aid
- Use effective life skills to improve and maintain mental and physical well-being.

Program Outcomes

Upon successful completion of this program, students should be able to:

- communicate effectively through technical drawings to determine product and customer specifications in building systems, energy products and thermal components;
- diagnose and repair electromechanical systems;
- design, install and troubleshoot electrical and fluid power controls related to energy system integration;
- analyze potential energy sources and select appropriate technologies;
- perform a residential energy audit, recommend and implement remediation measures;
- communicate the pros and cons of renewable energy technologies to a diverse user base;
- determine the financial feasibility of a project through the mathematical analysis of thermal and electrical energy problems.

Requirements

Course	Title	Credits
First Year		
First Term		
MFG-109	Computer Literacy for Technicians	3
MFG-130	Basic Electricity I	3
MTH-050	Technical Mathematics I	4
RET-200	Renewable Energy Systems	4
RET-240	Alternative Fuels	4
Credits		18
Second Term		
EET-139	Principles of Troubleshooting I	2
MFG-107	Industrial Safety & First Aid	3
MFG-131	Basic Electricity II	3
MTH-080	Technical Mathematics II	3
RET-209	Renewable Energy I: Energy Efficiency	3
Credits		14
Third Term		
MET-170	Introduction to Manufacturing Processes	3
MFG-103	Machining for Fabrication & Maintenance	3
RET-211	Renewable Energy II: System Fundamentals	3
RET-280	Renewable Energy/CWE	2
WR-101	Communication Skills: Occupational Writing	3
Human Relations requirement		3
Credits		17
Second Year		
Fourth Term		
EET-239	Principles of Troubleshooting II	2
Select one of the following:		3-4
GEO-100	Introduction to Physical Geography	
GEO-110	Cultural & Human Geography	
GEO-130	Introduction to Environmental Geography	
GIS-201	Introduction to Geographic Information Systems	
IMT-104	Reading Schematics and Symbols	2
IMT-215	Electromechanical Systems I	2
RET-213	Renewable Energy III: Installation & Maintenance	3
Electives (p. 2)		3
Credits		15-16
Fifth Term		
IMT-223	Instrumentation & Controls	3
MFG-140	Principles of Fluid Power	3
MFG-209	Programming & Automation for Manufacturing	3
RET-215	Renewable Energy IV: Systems Design	3
Electives (p. 2)		3
Credits		15
Sixth Term		
EET-233	Programmable Logic Controllers I	3

Course	Title	Credits
MFG-221	Materials Science	3
RET-217	Renewable Energy Capstone Project	3
RET-280	Renewable Energy/CWE	2
WLD-150	Welding Processes	4
Electives (p. 2)		3
Credits		18
Total Credits		97-98

Electives

Any course with a **CDT**, **EET**, **GIS**, **MET**, **MFG**, **RET**, **SM**, or **WLD** prefix not included in the program.

Careers

Career opportunities include:

- residential/commercial energy systems integrator
- energy audit and efficiency technician
- energy systems installer
- photo-voltaic (PV) manufacturing and industrial maintenance technician
- wind turbine technician
- limited renewable technician
- PV, geothermal and solar thermal technicians