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## Majoring in Renewable Energy

By [KEITH SCHNEIDER](#)

AS business and industry are taking more interest in renewable energy, academia is not far behind. Anticipating increased demand for new technical and design skills, colleges and universities across the nation are offering degree programs in the field.

The Oregon Institute of Technology has developed the country's first four-year undergraduate degree program in renewable-energy systems. This year the program is training 50 students and will graduate its first class.

The institute's degree requires basic knowledge in engineering, electrical circuits, motors and generators, thermodynamics, heat transfer and the language of computers. Then come specialized courses in photovoltaics ([solar energy](#) research and technology), wind, biomass (the recycling of biological material), hydropower and geothermal energy development.

Robert Bass, 33, the assistant professor who directs the program, said his students would be applying their new bachelor of science degrees in a range of design, engineering, installation, auditing and programming careers in the region's expanding green-power sector.

"We're constantly getting phone calls from renewable-energy companies who advertise jobs," said Dr. Bass, adding that two of his graduating students were already employed full time. "A student graduating from this program has a range of choices about where they want to start their careers. And starting salaries are very good."

Such promising career prospects have helped make the renewable-energy degree the most sought after at the Oregon Institute of Technology's campus in Portland, and similar undergraduate and graduate programs are emerging around the country.

In 2006, the [State University of New York](#) in Canton started a four-year degree program in alternative and renewable energy. In September, Illinois State University in Normal will establish a four-year degree program in renewable energy. Appalachian State University in Boone, N.C., offers an undergraduate degree in appropriate technology, an environmentally and socially responsible approach to engineering, with coursework in the design and construction of solar-powered buildings, drafting, design, woodworking, metalworking, computer literacy, architecture and green construction.

More community colleges are offering one-year certificates and two-year associate degrees in building and installing clean-energy systems. Lane Community College, in Eugene, Ore., trains renewable-energy technicians in a two-year program that teaches students how to improve the energy efficiency of homes and businesses and install solar-power and wind-power systems.

San Juan College, in Farmington, N.M., which has a program that specializes in designing and installing

solar-energy systems, awards one-year certificates and two-year degrees. Bronx Community College, part of the [City University of New York](#), also offers solar-electric training.

Starting salaries nationally, say students and faculty members, typically range between \$35,000 to \$45,000 for graduates of two-year programs and \$45,000 to \$60,000 for graduates of four-year programs.

Renewable energy can be approached from various academic angles, from economics to public policy. “[Stanford University](#) has established several energy and environment research and teaching programs — almost all of these programs are interdisciplinary,” said James L. Sweeney, director of the Precourt Institute for Energy Efficiency at Stanford and a professor of management science and engineering there. Stanford emphasized that point this month when it dedicated the \$118 million [Jerry Yang](#) and Akiko Yamazaki Environment and Energy Building, which houses many disciplines in an energy-saving facility.

Nationally, students view these programs as gateways to good jobs. “There’s all sorts of stuff out there for us,” said Mac Lewis, a 30-year-old student from Cedaredge, Colo., who has a B.S. in chemistry from Mesa State College in Grand Junction, Colo., and is about to graduate with a second degree in renewable energy from the Oregon Institute of Technology.

“We can go into energy auditing, solar design, energy modeling,” he said. “There are engineering firms looking for people like me. Photovoltaic manufacturers are coming here. Wind energy companies. There are nonprofit groups that are interested. And that’s just what’s going on around Portland.”

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