



# Energy Systems Engineering, B.S.

Energy Systems Engineering will allow you to contribute to the important work of deploying sustainable energy systems that help combat climate change. This new field of engineering incorporates elements commonly included in Civil, Environmental, Mechanical, and Electrical engineering disciplines. The program will be focused on energy-related infrastructure, devices, planning, and operations.

## Experience Your Learning

As an Energy Systems Engineering student, you'll build on a solid foundation of engineering fundamentals so you can engage with project-based and interdisciplinary courses.

The Renewable Energy Student Union is a campus club that has done hands-on energy projects together since 2004. One project is operating a solar radiation monitoring station on the library roof that is part of a national network.

Students have been involved with the research related to wind energy, including internships with Native American tribes, the Redwood Coast Energy Authority, the Schatz Energy Research Center, and more.

First-year, first-time students who major in Environmental Resources Engineering, Mechanical Engineering, and Energy Systems Engineering will be automatically enrolled in Baduwa't to Bay. One of several place-based learning communities at Humboldt, this year-long program focuses on engineering design within the Baduwa't (Mad River) Watershed, and supports success in first year courses.

### X Did you know?

- **Our program will be one of only a few Energy Systems Engineering degrees in the California State University system and our graduates will be prepared to be leaders in this new field.**
- **Students will learn how to design solar energy systems, make buildings more efficient, and program microgrid control hardware that's integrated into an advanced grid simulation system.**



# Academics & Options

## Energy Systems Engineering, B.S.

In the first two years, all students in the School of Engineering who are interested in Environmental Resources, Energy Systems, or Mechanical Engineering will take a core set of foundational courses together. These fundamentals provide a well-rounded basis in natural sciences, humanities, math, computational science, data analysis, and engineering design.

At the upper division, students will choose a major pathway and complete specialty engineering courses that go deep in that area of expertise. These courses take a project-based and interdisciplinary approach.

Students will learn to consider how energy systems are situated in social, ecological, and economic contexts, and cover key topics including thermodynamics, transport phenomena, building energy efficiency, renewable energy generation, electricity grids, and community energy planning.



## Careers

The Energy Systems degree prepares you for a career in developing, designing, operating, and analyzing clean energy systems.

- **Energy Engineer**
- **Environmental Engineer**
- **Public Works Engineer**
- **Utility Engineer**
- **Energy Policy Advocate**
- **Building Energy Efficiency Analyst**
- **HVAC Engineer**
- **Wind Power Analyst/Engineer**
- **Solar Power Engineer**
- **Energy Storage Systems Engineer**
- **Energy Policy Analyst**
- **Energy Manager**

