

# START YOUR FUTURE **NOW**



Exciting careers blending engineering, science, and ecology. Making the world a better place for people and the environment.

*“Oregon State's Biological & Ecological Engineering program is an innovative program nested in a state where nature and human activities are both so diverse. To understand ecology with the depth of OSU sciences and engineering problem solving skills is unique. I hope to soon hire an ECOE graduate to help design and build plant systems that clean urban storm water and recharge aquifers while diversifying habitat to include endangered species. Where else could that set of skills be learned as an undergrad?”*

Lou Licht, President of Ecolotree, Inc.



## Ecological Engineering is:

- Ecosystem restoration and habitat design at multiple scales
- Watershed management and enhancement
- Integrated waste treatment systems and beneficial use of waste products
- Phytoremediation and bioremediation
- Industrial ecology
- Constructed wetlands and tidal marshlands
- Mitigation of non-point source contamination
- The application of engineering principles to enhancing human and natural systems

For more information, contact us...

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# Ecological Engineering

## Undergraduate Program

Engineering at the intersection of human and natural systems



[www.bee.oregonstate.edu](http://www.bee.oregonstate.edu)

Oregon State UNIVERSITY **OSU**

# OSU<sup>™</sup>

## Biological & Ecological Engineering

### What is Ecological Engineering?

Ecological Engineering is the **design of sustainable systems** in concert and consistent with ecological principles **that integrate human activities with the natural environment to the benefit of both.**



Ecological Engineering is focused on incorporating ecological principles into the design of both natural and human-dominated systems. This focus on incorporation of ecological principles in engineering design to promote development of robust, sustainable systems sets it apart from other engineering disciplines.

*“OSU has established a bold program that challenges many traditional means and methods in industrialized society. Ecological Engineering and Systems Thinking offer a new lens through which to view and solve these issues. As a student in this major we have the opportunity to positively affect the world in which we live.”*

**Ben Morelli, BEE Alumni**

## Degree Options in Ecological Engineering

The Ecological Engineering Undergraduate Program provides tracks in **General Ecological Engineering, Ecosystem Restoration Engineering and Water Resources Engineering.** All tracks lead to a B.S. and are heavily grounded in both engineering and ecological science. The Ecological Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org). Therefore, they can lead to a Professional Engineer license.



### General Ecological Engineering

The General Ecological Engineering track provides a flexible program emphasizing a broad integration of engineering and ecological sciences to prepare students for a variety of career options ranging from environmental consulting to design of sustainable technology. It emphasizes systems analysis and design of sustainable systems for a broad range of application areas.



### Ecosystem Restoration Engineering

Students completing this track will be prepared to address restoration issues of terrestrial and aquatic ecosystems, including



forests, rivers, lakes, wetlands, grasslands, and coastal environments. Students will leave the program with the tools for addressing

recovery in degraded systems to emulate the desired structure, function, diversity, and dynamics of a specific ecosystem.

### Water Resources Engineering

Students in this track will be able to integrate physical, biological, chemical, and socio-cultural elements of a watershed, work with stakeholders

to address divergent interests, and guide landscape management and conservation from both the



science and policy perspectives. You will be prepared for careers as managers, practitioners, and policy makers in this fundamental and enduring field.