Ecological Engineering

The Ecological Engineering (EcoE) program at OSU was the first-of-its-kind in the nation, and the discipline is rapidly developing as an important emerging area of engineering. Ecological Engineering blends engineering and scientific principles/problem-solving techniques to optimize the design of sustainable systems (natural, urban, and agricultural) that integrate human activities into the natural environment to the benefit of both. EcoE graduates are highly employable and have found work in a variety of employment sectors, including:

- Engineering design & consulting firms
- Government agencies (federal, state, local)
- Natural resource management/ restoration firms
- Sustainable farms & vineyards
- Surveying & ecological modeling firms
- Water and wastewater treatment facilities

Your Bachelor’s Degree (BS) in the College of Engineering

A minimum of 180 credits are required for graduation; 60 must be upper division (300 and 400-level courses).

A maximum of 135 credits earned at a community college may be applied toward a bachelor's degree at OSU.

Some courses can count towards your major and the Baccalaureate Core. Advisors can assist in selection.

More info at bee.oregonstate.edu/biological-and-ecological-engineering/ecological-engineering-undergraduate-program

Courses Required for Ecological Engineering Major

This list is comprehensive. Speak with OSU advisor for more information.

<table>
<thead>
<tr>
<th>Ecological Engineering Core Requirements</th>
<th>OCCC Equivalent Course</th>
<th>OSU Course</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological Engineering I</td>
<td>ENGR 101</td>
<td>BEE 101</td>
<td>Starting Fall 2021, will be offered at OSU as ENGR 100</td>
</tr>
<tr>
<td>Ecological Engineering II</td>
<td>None</td>
<td>BEE 102</td>
<td>Starting Winter 2022, will be offered at OSU as ENGR 102; can sub this course with additional elective if both ENGR 101 and ENGR 114 taken at OCCC</td>
</tr>
<tr>
<td>Ecological Engineering III</td>
<td>ENGR 114</td>
<td>BEE 103</td>
<td>Starting Spring 2022, will be offered at OSU as ENGR 103</td>
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<tr>
<td>Fundamentals of Eco Engr.</td>
<td>None</td>
<td>BEE 221</td>
<td></td>
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<tr>
<td>Ecological Engr. Computation</td>
<td>None</td>
<td>BEE 222</td>
<td></td>
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<tr>
<td>Ecology for Engineers</td>
<td>None</td>
<td>BEE 270</td>
<td></td>
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<tr>
<td>Statics</td>
<td>ENGR 211</td>
<td>ENGR 211</td>
<td></td>
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<tr>
<td>Strength of Materials</td>
<td>ENGR 213</td>
<td>ENGR 213</td>
<td></td>
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<tr>
<td>General Chemistry (with lab)</td>
<td>CH 221</td>
<td>CH 231/261</td>
<td></td>
</tr>
<tr>
<td>General Chemistry (with lab)</td>
<td>CH 222</td>
<td>CH 232/262</td>
<td></td>
</tr>
<tr>
<td>General Chemistry (with lab)</td>
<td>CH 223</td>
<td>CH 233/263</td>
<td></td>
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<tr>
<td>Differential Calculus</td>
<td>MTH 251</td>
<td>MTH 251</td>
<td></td>
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<tr>
<td>Integral Calculus</td>
<td>MTH 252</td>
<td>MTH 252</td>
<td></td>
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<tr>
<td>Vector Calculus I</td>
<td>MTH 254</td>
<td>MTH 254</td>
<td></td>
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<tr>
<td>Applied Differential Equations</td>
<td>MTH 256</td>
<td>MTH 256</td>
<td></td>
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<tr>
<td>Intro to Matrix Algebra &amp; Series</td>
<td>MTH 253+MTH 261</td>
<td>MTH 264+MTH 265</td>
<td>MTH 261 transfers as general MTH credit, BEE will honor towards our matrix algebra requirement</td>
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<tr>
<td>Intro to Statistics for Engineers</td>
<td>None</td>
<td>ST 314</td>
<td></td>
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<tr>
<td>General Physics (with Calculus)</td>
<td>PH 211</td>
<td>PH 211</td>
<td></td>
</tr>
<tr>
<td>General Physics (with Calculus)</td>
<td>PH 212</td>
<td>PH 212</td>
<td></td>
</tr>
<tr>
<td>General Physics (with Calculus)</td>
<td>PH 213</td>
<td>PH 213</td>
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</tbody>
</table>

Revised as of November 2020
Complete one course in each Perspective category with no more than two in the same department.

Full listing of OCCC courses that fulfill Bacc Core requirements: admissions.oregonstate.edu/baccalaureate-core-course-equivalencies-portland-community-college

**SKILLS COURSES**
- Math
- Writing I
- Writing II
- Speech (Writing III)
- Fitness

Completed as part of the major
WR 121. Required to transfer.
Completed as part of the major
Completed as part of the major
HE 295 (lecture) + PE 295 (physical activity course)

**PERSPECTIVE COURSES**
- Biological Science
- Physical Science
- Additional Biological or Physical Science
- Cultural Diversity
- Literature and the Arts
- Social Processes and Institutions
- Western Culture

Completed as part of major
Completed as part of major
Completed as part of major
Choose one course from BaccCore link above
Choose one course from BaccCore link above
Completed as part of major
Can be completed as part of major: see advisor

**DPD COURSE**
- Difference, Power, & Discrimination

Choose one course from BaccCore link above

**SYNTHESIS COURSES**
- Contemporary Global Issues
- Science, Technology, & Society

Upper division course, take through OSU
Upper division course, take through OSU

**Advising Contacts**

Academic advisors at your community college and OSU are available to answer your questions and assist you in creating a transfer plan. See your community college advisor first and use this Transfer Guide to help you plan. It is important to speak with your OSU academic advisor early on, and often, to ensure correct course selection and sequencing. See visitosu.oregonstate.edu/visit-campus to schedule your personalized visit.

**Oregon Coast Community College**
oregoncoastcc.edu/advising/

**OSU Ecological Engineering**
Rachel Jones: rachel.jones@oregonstate.edu

**OSU College of Engineering Main Office**
askengineering@oregonstate.edu