PhD in Sustainability
The PhD program prepares students for careers in research, teaching, and academia.

Course Requirements
Students may be admitted to the PhD program with either a bachelor’s or a master’s degree. If admitted with a bachelor’s degree, students must complete a minimum of 84 semester hours (and have the opportunity to earn a master’s in passing). If admitted with a master’s degree, they must complete a minimum of 54 hours. In summary:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Admitted with a Bachelor’s</th>
<th>Admitted with a Master’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Courses</td>
<td>21</td>
<td>15*</td>
</tr>
<tr>
<td>Challenge Area Seminars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solutions Workshops</td>
<td>6</td>
<td>3*</td>
</tr>
<tr>
<td>Research</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Dissertation</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Electives</td>
<td>33**</td>
<td>12***</td>
</tr>
</tbody>
</table>

**Of which, a maximum of 6 hours can be at the 400-level or higher
***500-level or higher

Total Semester Hours Required
84

Core Courses and Challenge Area Seminars
The core courses are designed to provide students from diverse backgrounds with methods and theories for the study of sustainability. They explore the link between concepts of sustainability and systems approaches to knowledge, and develop the integrative methods needed to work across the disciplines on sustainability problems. Challenge-area seminars provide students with a strong foundation (content knowledge, big theory, and big studies) in the main themes of the School.

Required Core Courses
- SOS 510: Perspectives on Sustainability (Required for all students)
- SOS 598: Introduction to Research Design and Methods (Required for all students)

In addition to these two courses, students will need to take courses from the following two lists of courses to fulfill remaining core and challenge area seminar requirements:

Additional Core Courses
- SOS 511: Transformational Sustainability Research, OR
- SOS 591: Qualitative Methods for Sustainability Problems, OR
- SOS 591: Dynamic Modeling for Sustainability, OR
- SOS 512: Sustainable Resource Allocation, OR
- SOS 598: Microeconomics of Behavior, OR
- SOS 514: Human Dimensions of Sustainability, OR
- SOS 553: Ecological Anthropology, OR
- SOS 591: Applied Robustness Analysis in Social Ecological Systems, OR
- SOS 591: Seminar on Stochastic Modeling: Ecology & Hydrology, OR
- SOS 598: Mathematical Concepts and Tools in Sustainability
- SOS 598: Ecological (Sustainability) Economics
- SOS 591: Sustainability Science: Interactions Between Human and Environmental Systems, OR

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Admitted with a Master’s
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Dissertation
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12
Electives
33**
12***
Total Semester Hours Required
84
54

*Assuming relevant coursework at the master’s level.
SOS 591: Adaptation, Resilience and Transformation

* SOS 515: Industrial Ecology and Design for Sustainability, OR SOS 598 Life Cycle Assessment for Civil Systems

* SOS 516: Science, Technology, and Public Affairs, OR SOS 518: Uncertainty and Decision Making

* SOS 591: Environmental Ethics and Policy, OR SOS 598: Sustainability Ethics for Science and Engineering

SOS 513: Science for Sustainability

SOS 517: Sustainability and Enterprise

SOS 570: Fundamentals of CAS Science

SOS 591: Governance for Sustainability

Challenge Area Seminars

<table>
<thead>
<tr>
<th>SOS 530: International Development and Sustainability</th>
<th>SOS 591: Sustainability and Social and Family Welfare</th>
</tr>
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<tr>
<td>SOS 532: Sustainable Urban Dynamics</td>
<td>SOS 598: Urban Ecological Systems</td>
</tr>
<tr>
<td>SOS 533: Sustainable Water</td>
<td>SOS 598: Sustainable Futures Studio</td>
</tr>
<tr>
<td>SOS 534: Sustainable Energy and Material Use</td>
<td>SOS 598: Urban Infrastructure Anatomy and Social Development</td>
</tr>
<tr>
<td>SOS 535: Sustainable Ecosystems</td>
<td>SOS 598: Human and Social Dimensions of Global Climate Change</td>
</tr>
<tr>
<td>SOS 536: Food System Sustainability</td>
<td>SOS 598: Climate Science for Sustainability</td>
</tr>
<tr>
<td>SOS 591: Legal Issues in Sustainability</td>
<td>SOS 598: Sustainable Livelihoods &amp; Biodiversity Conservation in the Tropics</td>
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</table>

Solutions Workshops

Solutions workshops provide students with experience solving real-world problems that involve multiple sustainability challenges. They are problem-based and not specifically attached to a single main theme. Please check with the online schedule of classes for a current list of workshops offered (under SOS 594).

Research and Dissertation Hours

At least twelve hours of the approved PhD program must be SOS 792 Research, and at least twelve hours must be SOS 799 Dissertation.

Elective Courses

Electives should be chosen in consultation with the student’s chair. Electives can be taken outside of the School of Sustainability.

Comprehensive Exam, Dissertation Prospectus, and Candidacy

When students have completed or are close to completing the coursework, they may request permission to take the comprehensive exam. The PhD comprehensive exam is administered by the student’s supervisory committee. PhD. students achieve candidacy status after passing the comprehensive exam and successfully defending a dissertation prospectus.

Dissertation

A dissertation and final oral examination in defense of the dissertation is required.