

ECOLOGICAL ECONOMICS

<http://www.uvm.edu/giee/>

OVERVIEW

Ecological Economics examines the relationships between ecological and economic systems while working to solve humanity's environmental challenges. It is based on the understanding that the economy is a subsystem of a larger ecological life support system, and it strives to create an ecologically sustainable, socially equitable, and economically efficient future. The certificate is a problem-based, interdisciplinary program focused on developing a practical framework for integrating economic and ecological systems. Students will acquire a theoretical and pragmatic basis to carry these skills into the world of practice.

DEGREES

- Ecological Economics CGS (<http://catalogue.uvm.edu/graduate/ecologicaecon/ecologicaeconomicscgs/>)

FACULTY

Erickson, Jon; Professor, Gund Institute; PHD, Cornell University

Farley, Joshua C.; Professor, Department of Community

Development and Applied Economics; PHD, Cornell University

Ricketts, Taylor H.; Professor, Rubenstein School of Environment and Natural Resources; PHD, Stanford University

Courses

NR 220. Landscape Ecology. 3 Credits.

The course examines the critical role of landscape pattern in determining ecological process and dynamics, as well as human-ecological interactions. Includes field labs. Prerequisites: NR 103 or BCOR 102; Senior/Graduate standing.

NR 228. Ecosystems Ecology. 3 Credits.

Examination of the structure and function of terrestrial ecosystems focusing on carbon and nutrient cycles. Laboratory sessions involve spatial modeling and data analysis. Prerequisites: NR 103, BCOR 102, PSS 161, or Graduate student standing. Cross-listed with: FOR 228.

NR 242. Adv Geospatial Techniques. 1-3 Credits.

Advanced course encompassing a wide range of topics in GIS, remote sensing, GPS, modeling, and visualization designed to provide technical expertise in geospatial techniques. Topics vary by offering; periodic offering at intervals that may exceed four years. Prerequisite: NR 143, GEOG 184, NR 343, NR 146, NR 346, or GEOG 185.

NR 243. GIS Practicum. 3 Credits.

An applied course in geospatial technology with a focus on ESRI's ArcGIS software suite. Prerequisite: NR 143 or NR 343.

NR 250. Limnology. 0 or 4 Credits.

Ecology of lakes and reservoirs, including their origin, physics, chemistry and biology, and the effects of anthropogenic perturbations. Field and laboratory experience. Prerequisites: BIOL 001 and BIOL 002 or BCOR 011 and BCOR 012, and CHEM 023 and CHEM 026 or CHEM 031 and CHEM 032, and NR 103 or BCOR 102.

NR 268. Soil Ecology. 0 or 4 Credits.

Underlying concepts and theory of modern soil ecology will be reviewed including spatial and temporal distributions, sampling methods, biogeochemical cycles, and ecological functions of soil. Prerequisites: BCOR 102 or NR 103, Prerequisites: BCOR 102 or NR 103, and PSS 161. Cross-listed with: PSS 268.

NR 280. Stream Ecology. 0 or 4 Credits.

Ecology of streams including hydrodynamics, morphology, sediment transport, chemistry, biology and human impacts. Field and laboratory experience. Prerequisites: BIOL 001 and BIOL 002 or BCOR 011 and BCOR 012, and CHEM 023 and CHEM 026 or CHEM 031 and CHEM 032, and NR 103 or BCOR 102.

NR 288. Ecol Design & Living Technol. 0 or 3 Credits.

The course explores the potential for ecological design to shape a sustainable future. It analyzes living technologies for food production, waste management and environmental restoration. Prerequisite: Junior standing.

NR 289. Advanced Ecological Design. 3 Credits.

A problem-based, cross-disciplinary design course in which existing conditions are integrated with the redesign of place and system in alignment with ecological design principles. Prerequisite: NR 288.

NR 306. Envisioning a Sust Future. 2 Credits.

Seminar orienting graduate students to RSENR and providing frameworks for collaborative leadership, whole systems thinking, and intercultural competency.

NR 311. Leadership for Sustainability. 3 Credits.

Provides an experiential and theoretical orientation to foundational practices, principles, and skills of sustainability leadership with an emphasis on ecological/systems thinking, sustainability, and leadership.

NR 312. Power Privlge & Catalyz Change. 3 Credits.

Focuses on leadership skills and systems frameworks for engaging with issues of diversity, power, and privilege and the implications of these topics on leaders' capacity. Designed to meet the RSENR graduate diversity requirement. Prerequisite: NR 311.

NR 333. Professional Writing Essential. 1 Credit.

Basics of good writing, essay and report writing, as published in both popular and professional journals in the environment and natural resources. Prerequisite: Graduate standing. Cross-listed with: PBIO 333.

NR 334. Professional Writing AdvTopics. 1 Credit.

Writing workshop that explores essay and report writing, as published in both popular and professional journals that examine the natural world and its resources. Prerequisite: Graduate standing. Cross-listed with: PBIO 334.

NR 341. Ecological Economic Theory. 3 Credits.

A transdisciplinary study of the economic system as embedded and interdependent on social institutions and environmental systems. Prerequisite: Graduate standing.

NR 342. Ecosystem Services. 3 Credits.

Examines the economic and other benefits nature provides to people. Covers the ecological foundations of quantifying ecosystem services, the economics of valuing them, and the practical issues involved with putting them to work for conservation. Prerequisites: Graduate standing; Instructor permission.

NR 343. Fndmntls of Geog Info Systems. 0 or 3 Credits.

Concepts and methods in Geographic Information Systems (GIS) presented at an accelerated pace for Graduate students using ArcGIS software. Prerequisite: Graduate standing.

NR 372. Transdisc Leadshp & Creatvty. 3 Credits.

Explores the theoretical and practice-based fields and lineages associated with transdisciplinary leadership and creativity while providing a solid structural and relational grounding for students in the Transdisciplinary Leadership, Creativity and Sustainability PhD Program.

NR 373. Transdisc Mthds&Modes of Inqry. 3 Credits.

Focuses on practices for engaging with inquiry, methods, and practice as students develop more clarity about the research questions, practices, structure, methods, and lineages that will inform their dissertation proposal and research.

NR 376. Graduate Teaching Practicum. 2 Credits.

Natural Resource teaching practicum for doctoral students in the Rubenstein School. Course is required if students are following the academic option. Should be taken concurrently or one semester in advance of completion of the doctoral teaching requirement. Prerequisite: Doctoral standing.

NR 384. Independent Study in NR. 1-18 Credits.

Readings, with conferences, to provide graduate students with backgrounds and specialized knowledge relating to an area in which an appropriate course is not offered.

NR 388. Ecological Leadership Seminar. 3 Credits.

Explores emerging topics and themes related to the theory and practice of ecological leadership. Can be taken in successive semesters (up to 2 times), as learning module topics will change.

NR 389. Ecological Ldership Practicum. 3 Credits.

An advanced exploration of ecological/systems thinking, sustainability, leadership skills, and leveraging change; offering students the opportunity to integrate these concepts and skills through an applied leadership practicum. Prerequisite: NR 388.

NR 390. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

NR 391. Master's Thesis Research. 1-18 Credits.**NR 392. Master's Project Research. 1-12 Credits.****NR 394. Independent Graduate Research. 1-18 Credits.**

Graduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

NR 395. Advanced Special Topics. 1-18 Credits.

Graduate topics and material that may eventually develop into a regular course offering.

NR 474. Creative Practice & Dissertatn. 3 Credits.

For PhD students nearing the end of dissertation research and beginning the integration, diffraction, synthesis, and meaning-making process essential to their dissertation. Provides structure, support and feedback in the creative act of crafting a dissertation. Prerequisites: NR 372, NR 373.

NR 490. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

NR 491. Doctoral Dissertation Research. 1-18 Credits.**NR 494. Independent Graduate Research. 1-18 Credits.**

Graduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

NR 496. Advanced Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.