

**OCN 101: Introduction to the Environment and Sustainability**  
**Fall 2017**

**Instructor:** Dr. Michael Cooney (956 7337; [mcooney@hawaii.edu](mailto:mcooney@hawaii.edu)). Office hours @ POST 104B MW, 2:30 – 3:30, F 2:30-3:00, and by text confirmed drop in.

**Lecture Schedule:** Lectures (M, W), Active Learning Discussion (F). 1:30 – 2:20, Watanabe Hall 420

**Course Objective.** The environment is interdisciplinary; it embraces a wide variety of topics taken from a number of disciplines. Yet there are several major unifying constructs, or themes, that cut across the many topics included in the study of the environment. In particular the application of sustainability. The goal of this course is to provide students with a basic foundation in scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving or preventing them. More, this course is also designed to instruct students on how they can apply this knowledge to active careers pursuing sustainability in traditional degree disciplines.

**Course Description.** This course will introduce students to the core elements of the environment and its dependence upon sustainability on a global scale. The integrated natures of ocean, terrestrial and atmospheric systems will be introduced by first presenting the Earth's major ecosystems and biomes and then discussing their coupled contribution to global regulation of climate and atmosphere composition. The course will also cover causes of ecosystem and biome degradation including pollution, land use, coast degradation as well as means to mitigate these causes such as environmental law, environmental economics, and renewable energy. The course will integrate emerging concepts in the social science such as social and environmental justice as well as environmental law and economics. The concepts of sustainability will be infused throughout the course with particular emphasis on how students can use this knowledge to pursue their vision of sustainability in degree disciplines of their preference. Overall, this course will address the impact that 8 billion or more people are imposing upon the Earth's environment and how students can pursue environmental sustainability in any number of degree disciplines and careers.

**Materials:** Course notes, reading and lecture material will be posted via LauLima.

**Alignment with Manoa ILO's.** This course is strongly aligned with ILO 3c: Stewardship of the national environment (respect for natural resources and sustainability). Also, ILO 3a: Continuous learning and personal growth (life-long learning, ethical behaviors and judgements). Also ILO 2a: Think critically and creatively (applying questioning and reasoning, generating and exploring new questions, being information literate).

**Structure:** Two 1-hour lectures and one 1-hour active learning lecture/discussion per week.

**Grading:** Letter, two midterms, one cumulative quiz (spread out over the Friday Sustainability Active Learning Unit Training sessions), and one final. The quizzes will cover the material in the Monday, Wednesday lectures.

Midterm 1:	25%
Midterm 2:	25%
Quizzes:	25%
Final:	25%

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**Syllabus**

8/21, M. 8/23, W. 8/25, F.	Lecture 1: Science of the Environment Lecture 2: Ecosystem Productivity (mass and energy flows) <b>Sustainability Active Learning Unit Training (SALUT) 1: Sustainability</b>
8/28, M. 8/30, W. 9/1, F.	Lecture 3: Natural Resources Lecture 4: Human Population Growth: The key catalyst for sustainability <b>SALUT 2: Human population growth</b>
9/4, M. 9/6, W. 9/8, F.	Labor Day Lecture 5: Principles of Ecology <b>SALUT 3: Ecological Succession</b>
9/11, M. 9/13, W. 9/15, F.	Lecture 6: The Atmosphere Lecture 7: The Atmosphere <b>SALUT 4: Global Warming</b>
9/18, M. 9/20, W., 9/22, F.	Lecture 8: The Oceans Lecture 9: The Oceans <b>SALUT 5: Oceans and Human Health</b>
9/25, M. 9/27, W. 9/29, F.	Lecture 10: Natural Biogeochemical Cycles Lecture 11: Water and Energy Cycles <b>SALUT 6: Resource Recycling and Sustainability</b>
10/2, M. 10/4, W. 10/6, F.	Lecture 12: Ecosystems Lecture 13: Ecosystems <b>SALUT 7: Ecosystems and Sustainability</b>
10/9, M. 10/11, W. 10/13, F.	Lecture 14: Ecosystem Services Lecture 15: Biomes <b>SALUT 8: Biomes and Sustainability</b>
10/16, M. 10/18, W. 10/20, F.	Exam I Lecture 16: Land Use & Degradation <b>SALUT 9: Cities &amp; Sustainability</b>
10/23, M. 10/25, W. 10/27, F.	Lecture 17: Biodiversity Lecture 18: The Biodiversity Crisis <b>SALUT 10: Carrying Capacity</b>
10/30, M. 11/1, W. 11/3, F.	Lecture 19: Energy Lecture 20: Energy Use <b>SALUT 11: Energy &amp; Sustainability</b>
11/6, M. 11/8, W. 11/10, F.	Lecture 21: Pollution <b>SALUT 12: Pollution and Sustainability of the Environment</b> Veteran's Day
11/13, M. 11/15, W. 11/17, F.	Lecture 22: Earth Systems Lecture 23: Coastal Degradation <b>SALUT 13: Resiliency vs. Coastal Development</b>
11/20, M. 11/22, W. 11/24, F.	Lecture 24: Environmental Economics <b>SALUT 14: Economics &amp; Sustainability: Jobs or the Environment?</b> Non Instructional Day (Thanksgiving weekend)
11/27 11/29 12/1	Lecture 25: The Anthropocene Era Lecture 26: Environmental Law & Social Justice Exam II
12/4 12/6 12/8	Review <b>SALUT 15: Pursuing Sustainability: Degrees and Careers</b> Study Week
12/11 – 12/15	Exam Week