AEC 353: Introduction to Coastal and Marine Resource Economics

Instructor: Prof. David Kling  
Department of Applied Economics  
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Class meetings: TR 1000-1120

Office hours: TBD  
Note: If you are unable to make my office hours, email and we will arrange an alternative time to meet.

Credits: 3

Prerequisites: MTH 111 and one of the following: AEC 250, AREC 250, ECON 201 or ECON 201H

Course format: Lecture

Catalogue description: Introduces tools of economic analysis for understanding coastal and marine resource management. The course surveys a selection of current topics in the field, emphasizing innovation in production and stewardship, institutions, and sustainability. (Bacc Core Course)

Course description: Coastal and marine resources, ranging from harvested fish stocks to offshore hydrocarbons and coastal wetlands, provide a multitude of benefits to society. A still unresolved challenge is to manage individual resources in a way that unlocks their value sustainably. At the same time, emerging concepts of stewardship emphasize the interconnectedness of resources and the need to reconcile tradeoffs among competing uses. Coastal and marine resource economics is a field with an interdisciplinary orientation that focuses on predicting how humans will interact with resources and understanding how the coastal and marine context influences the fundamentals of resource allocation. This course introduces undergraduate students to core models used by economists to understanding coastal and marine resource use and conservation. The second half of the course surveys a selection of current topics, including aquatic invasive species management and spatial policies, with an emphasis on issues in the United States. Throughout, the course will highlight the role of science and technological change in shaping resource use and stewardship.
Baccalaureate Core: Introduction to Coastal and Marine Resource Economics (AEC 353) fulfills the Science, Technology, and Society (STS) component of the Baccalaureate Core.

Measurable student learning outcomes: On completion of the course, students will achieve the following learning outcomes. A subset of these outcomes center on themes of the Science, Technology, and Society component of the Oregon State University Baccalaureate Core as they relate to society’s use and conservation of coastal and marine resources:

1. Analyze relationships among science, technology, and society using critical perspectives or examples from historical, political, or economic disciplines.
2. Analyze the role of science and technology in shaping diverse fields of study over time.
3. Articulate in writing a critical perspective on issues involving science, technology, and society using evidence as support.

Additional learning outcomes will be measured through a student’s ability to:

4. Use basic economic concepts to interpret coastal and marine resource allocation processes or public policies.
5. Manipulate a selection of basic models of production from marine resources and understand their key theoretical predictions.
6. Demonstrate familiarity with a selection of current topics in coastal and marine resource economics and policy.

Course materials: Readings will be drawn from a variety of sources. The following texts are recommended:


Assigned readings will be made available either through Valley Library course reserves or via Canvas.

Student evaluation: Evaluation will be based on participation (5%), homework assignments (30%), a writing assignment (10%), a midterm examination (20%), and a final examination (35):
Participation: Students are expected to attend all lectures and to complete all assigned readings. Active and informed participation during lecture is required. To evaluate participation, I will select three lectures in which students will be asked to sign in. Absence from a selected lecture will result in the loss of 25% of participation points.

Homework: Homework assignments are designed to help students review concepts introduced in classes, develop problem solving skills, and prepare for examinations. Homework assignments will consist of economic problem solving and short written response questions. Homework will be assigned each week with the following exceptions: the week when the writing assignment is due and one week prior to an examination. Late homework will be penalized by 25% of the assignment grade if overdue by one day and by 50% if overdue by two days. Homework overdue by more than two days will not be accepted. Please see me if you are having trouble completing the assignments on time.

Writing assignment: Students in AEC 353 will draw on lecture materials and a minimum of two outside sources to write a short essay that provides a critical perspective on the relationship between science, technology, and coastal and marine resources. The writing assignment for Spring 2016 will focus on sustainability and technological change in the global aquaculture industry. Further details will be provided in lecture. Late writing assignments will be penalized by 25% of the assignment grade if overdue by one day and by 50% if overdue by two days. Writing assignments overdue by more than two days will not be accepted.

Midterm examination: Midterm exam time and date TBD

Final examination: Final exam time and date TBD

Make-up examinations: Make-up examinations will not be offered without documented evidence of a medical emergency.

Final grades: Letter grades will be awarded as follows (out of 100 possible points):

- A : \( \geq 93.0 \)
- B : 83-86.9
- C : 73-76.9
- D : 63-66.9
- A- : 90-92.9
- B- : 80-82.9
- C- : 70-72.9
- D- : 60-62.9
- B+ : 87-89.9
- C+ : 77-79.9
- D+ : 67-68.9
- F : \( \leq 60 \)
Course content overview: The table below lists topics covered in this AEC 353.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignment due</th>
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<tbody>
<tr>
<td>1</td>
<td>Coastal and marine resource economics: an introduction</td>
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<tr>
<td>2</td>
<td>Aquaculture</td>
<td>Homework 1</td>
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<td>3</td>
<td>Commercial fisheries I: production and sustainability</td>
<td>Homework 2</td>
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<tr>
<td>4</td>
<td>Commercial fisheries II: institutions and technological change</td>
<td>Homework 3</td>
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<tr>
<td>5</td>
<td>Seafood markets: sustainability, security, and innovation</td>
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<tr>
<td>6</td>
<td>Aquatic invasive species management</td>
<td>Midterm examination</td>
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<td>7</td>
<td>Natural hazards: risk and the coastal economy</td>
<td>Homework 4</td>
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<td>8</td>
<td>Biodiversity conservation</td>
<td>Homework 5</td>
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<tr>
<td>9</td>
<td>Coastal and marine ecosystem services</td>
<td>Writing assignment due</td>
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<tr>
<td>10</td>
<td>Ecosystem-based fisheries management</td>
<td>Marine spatial planning</td>
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Student accommodations: OSU’s statement regarding students with disabilities:
Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting me during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at (541) 737-4098.

Conduct: Students are expected to follow Oregon State University’s Student Conduct and Community Standards, which may be found online at http://oregonstate.edu/studentconduct/offenses-0