AREc 653: Spatial Economics of Natural Resources

Winter Quarter Syllabus (TuTh 2-3:20)
3 credits

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OH: by appointment

Description:

Although the temporal aspects of natural resource economics have long been recognized, the spatial aspects of resource management decisions have only recently come to the attention of economists. It is an exciting time for natural resource economists who are developing approaches to address the spatial characteristics of resource management in tandem with the natural scientists who develop spatial models of resource systems. In addition, natural resource economists are making methodological advances in order to take advantage of the increasing availability of spatially explicit data. This course introduces the tools of spatial economics—emphasizing modeling structure but introducing spatial econometrics as well—and demonstrates how those tools have been applied to various natural resources. In addition, the course will identify unexplored areas of spatial natural resource economics. Specific topics include the theory of spatial economics, spatial econometrics, and applications of spatial modeling to parks, fisheries, extractive reserves, and forests. Students will present their term papers in the last three weeks of the term. The course has a discussion-based format. Grading will be based on student discussion, presentations, and a term paper.

Prerequisite: AREc 651.

Objectives:

The course explores theoretical approaches to modeling the spatial aspects of economic problems and covers the basics of empirical methods to analyze spatial data and problems.

Student Learning Outcomes:

After successful completion of this course, students will be able to:

- read the spatial economics literature and understand how the spatial representation, spatial heterogeneity, spatial processes and production functions, and other spatial characteristics inform the process of the analysis and the results
• apply spatial modeling concepts to previously non-spatial analysis and determine
the impact of incorporating those concepts on modeling structure, solution
methods, data analysis, and results
• identify research topics within spatial resource economics and construct a
research approach to address those issues

Evaluation:

Students are expected to read the required papers before each class session and
participate in discussions during class (including during discussions of student
presentations). If the discussion is limited, I will give pop quizzes to augment
participation scores. Students will be evaluated based on the following:

25%: Leading and participating in discussions throughout the quarter
(supplemented by quizzes if necessary) (assessment of first and third SLOs)

30%: A 20 minute presentation followed by 10-20 minutes of Q&A/discussion on
the term paper described below. Because classmates will have read the article on
which you are basing your paper, you should spend very little time describing the
article itself. This presentation provides an opportunity to get input from
classmates and the professor before finalizing your term paper. (assessment of
second and third SLOs)

45%: A paper in which the student takes a non-spatial resource economics journal
article (not on the reading list) and describes how they would extend the paper to
include spatial aspects of the problem. At a minimum, the paper should describe:
the unstudied spatial issues in that article; why it is important to consider these
spatial issues; how the article’s modeling framework would be altered to address
the spatial components of the issue; how the inclusion of spatial components
would alter the methodology employed and/or data requirements; and how the
results are likely to differ from those in the original article. You do not need to do
any analysis, but the paper should lay out how the analysis would be done. Be
careful about choosing papers for which a closely-related spatial version already
exists! I suggest that you talk through your paper and idea with me before getting
too far into it. To avoid duplication by students, I must “clear” your choice of
journal article from which to work. When grading the papers, I will focus on the
additional insights that could be gained from adding a spatial dimension into the
analysis. In this regard, papers that simply re-estimate a model by adding spatial
autocorrelation will not be viewed favorably. (assessment of second and third
SLOs)
Students with Disabilities:

Accommodations are collaborative efforts between students, faculty, and Disability Access Services (DAS). If you are a student with accommodations approved through DAS, please contact me (faculty/instructor) prior to or 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 737-4098.

Statement on Expectations of Student Conduct:

Academic Integrity:

Students are expected to be honest and ethical in their academic work. Academic dishonesty is defined at Oregon State University as an intentional act of deception in one of the following areas:
- Cheating - use or attempted use of unauthorized materials, information or study aids.
- Fabrication - falsification or invention of any information.
- Assisting - helping another commit an act of academic dishonesty.
- Tampering - altering or interfering with evaluation instruments and documents
- Plagiarism - representing the work of others as one’s own.

In this class, I encourage students to work together and support each other in the pursuit of learning the material but each individual is responsible for their own work. Please review appropriate methods for citing and referencing other people’s work. Be very careful to attribute quotes and paraphrases of other people’s work because plagiarism is a serious offense.

Civility in the classroom:

The goal of Oregon State University is to provide students with knowledge, skill, and wisdom they need to contribute to society. Our rules are formulated to guarantee each student’s freedom to learn and to protect the fundamental rights of others. People must treat each other with dignity and respect in order for scholarship to thrive. Each student is expected to contribute to class discussion and we should all work to make sure that everyone feels comfortable asking questions and making their own points during our discussions.
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Reading List

A. Spatial Economics Background (first class session)


B. Urban Economics Background (1 class)


C. Fish (2-3 class sessions)


**D. Forests** (2 class sessions)


**E. Reserve Site Selection** (1 class session)


**F. Wildlife** (1 class session)


**G. Land Conservation** (2 class sessions)


**H. Spatial Econometric Methods and Applications to Natural Resource Economics** (2 class sessions, with Prof. Rosenberger)


I. **Non-timber Forest Products and Low-Income Country Forest Issues** (1-2 class sessions)


J. **Invasive Species** (1 class session)


**K. Water** (1 class session)


**L. Student Presentations** (2–4 class sessions)

Articles used as the basis for student presentations will be required reading for all class participants.

**M. Concluding Lecture** (1 class session)