

Economics and Natural Resources Management

ESPM 3261 / 5261

Course Syllabus

Spring Semester 2017

Course Meeting Location/Time/Credits/Prerequisites:

Location: Green Hall, Room 110
Days: Mondays and Wednesdays
Meeting Time: 11:45 a.m. - 1:40 p.m.
Credit Hours: 4 credits
Prerequisites: 1 semester of college algebra or statistics or equivalent

Course Instructor: Mike Kilgore, Professor and Interim Head
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Phone: 612-624-6298
E-mail: mkilgore@umn.edu
Office hours: Monday & Wednesday 2:00-4:00 (or by appointment)

Teaching Assistants:

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Office hrs (both):	M,W,Th,F 10:00-11:30 am	Tu 11:45 am-12:45 pm
	(or by appointment)	

Course Text

There is no textbook to purchase. To access the course readings, click on the “*Access Course Readings*” link at the top of the Moodle website for this course. The course readings are freely available to all students. As part of the Partnership for Affordable Content project, I worked with librarians from the University Libraries to replace the previous commercial (and more costly) textbook. The textbook readings draw from several different authors in the fields of economics, finance, and natural resource and environmental economics. There are also a number of outside readings assigned (listed immediately below the textbook reading(s) assigned to each lecture topic). Most of these readings are peer-reviewed journal articles; a few are from non-peer reviewed sources.

Course Description and Focus

This course is designed to give you a better understanding of and appreciation for the role economics plays in the management, use, and protection of natural resources. Its focus is to develop your capacity to understand and apply economic decision-making criteria in natural resources decision-making. The course emphasizes practical applications of economic principles and concepts to natural resource management problems. It also expands your understanding of: 1) the fundamental interdependency of humans and natural resources for a variety of uses and values; 2) strategies for sustainable natural resource management; and 3) alternative perspectives on these strategies.

The first third of the course develops your understanding of basic microeconomic concepts. This may be a bit of review if you’ve already had a post-secondary college microeconomics coursework. However, I’ve found students retain very little from their previous microeconomics course(s). The middle third of the course exposes you to tools and techniques for valuing natural resources and management strategies. The last part of the course applies these economic concepts, tools, and techniques to a variety of natural resource management problems (e.g., forests, fisheries, land management). While there is a math prerequisite for this course, basic algebra is all that’s required. All the problems can be solved using a pocket calculator or using Microsoft Excel (see below).

CLE Social Sciences Core and Environment Theme Certification

For ESPM 3261 students, this course fulfills a portion of your liberal education requirements. It has been certified by the University's Council on Liberal Education as meeting both the Social Sciences Core and Environment Theme requirements. This dual designation means you will explore natural resource management issues from both an economic perspective as well as your personal observations. The course will discuss a number of contemporary issues regarding the management, use, and protection of natural resources and the environment, at scales ranging from local to global. These discussions will increase your understanding of the important challenges facing society and raise important ethical considerations regarding the role economics plays (or should play) in solving environmental and natural resource problems. The intent of these discussions is to help you develop your capacity to frame, critically analyze, and develop solutions to important issues affecting natural resources and the environment. With a specific focus on economics as a discipline within the social sciences context, the course will also expose you to "economic ways of thinking" and set the discipline of economics within the broader context of societal behavior, norms, and institutions. Specifically we will discuss the role economics plays in solving natural resource management and environment problems. This discussion will give you a greater appreciation of how economics and the environment are interconnected, and the importance of incorporating economic decision-making criteria in solving natural resource management and environmental problems.

Learning Outcomes

Specific student learning outcomes of the course are to develop an understanding of:

- 1) The fundamental interdependency of humans and natural resources.
- 2) The role of natural systems in the production and consumption of market- and amenity-based natural resources goods and services.
- 3) The scientific principles, ethical considerations, and societal values that shape natural resource management.
- 4) Consumption preferences and utility theory.
- 5) How producers determine an economically-efficient level of production.
- 6) Price elasticity of supply and demand and factors influencing changes in supply and demand.
- 7) Supply and demand interactions to determine market price, causes of market disequilibrium, and market adjustments to disequilibrium.
- 8) Why markets fail and market failures commonly associated with natural resources.
- 9) Property rights and land tenure arrangement affecting natural resource management.
- 10) Policy tools used by government to correct market failures in natural resource management.
- 11) The time value of money and its influence on natural resource management decisions.
- 12) Methods for conducting financial/economic analyses of natural resource projects and/or policies; use of economic tools for evaluating project efficiency.
- 13) Non-market goods and services associated with natural and environmental resources, and methods for estimating the value of these goods and services.

- 14) Methods for valuing natural resource lands and how real estate financing arrangements influence willingness to pay for natural resource lands.
- 15) Basic economic concepts, principles, decision-making criteria, and issues associated with sustainably managing natural resources (e.g., forests, wildlife, fisheries, recreation resources).
- 16) How economic principles and concepts help explain your own personal observations about the management, use, and protection of natural resources.

Course Format

My lectures are more like class discussions – there is a substantial amount of student engagement during each class period. Don't come to class expecting just to take notes – I expect all students to be active class discussion participants. There will be several times during the semester when the class will break into small discussion or problem solving groups. Since the class meets for nearly two hours, we'll take a short "comfort break" approximately midway through each class period.

Expectations of Students

To meet the course requirements of a four credit class, you are expected to spend an additional eight hours per week outside the classroom reading and reviewing course materials and preparing assignments to meet course requirements. **You should come to class having completed the assigned readings corresponding to the lecture topic.** If you do not come to class prepared, you will likely have a difficult time grasping the concepts discussed that day. Additionally, you are expected to meet all the course scheduling/due dates for quizzes, exams, homework, and papers (see "Assignment Policy" below).

What You Can Expect From Me

I will come to class prepared to lead in a discussion of the day's topic listed in the syllabus or announced prior to class. At the beginning of each class period, I will set aside time for you to ask questions regarding the material covered during the previous class session. Any material (e.g., data tables, graphs, etc.) I plan to use for that day's discussion will be posted the course Moodle website prior to class (usually at least 1 day in advance). Any changes in the lecture schedule will be announced prior to class. To help you understand all of the course material, the teaching assistants and I have set office hours each week (see 1st page for hours). We will also meet with you outside these hours by appointment. However, don't expect us to respond to e-mails the night before an exam asking for explanations of key concepts or lengthy explanations on how to solve problems...that's why we have office hours.

Contacting Us by Email

If you need to send me or the teaching assistants an email, use "ESPM 3261" in the subject line. Be sure to copy all three of us (me, Justin, Brian) on ALL correspondence. Also, please indicate which of us your email is directed to at the beginning of your message.

Special Needs

Anyone with a documented disability who needs to arrange reasonable accommodations should bring this to my attention and the Disability Services Office (<https://diversity.umn.edu/disability/>) at the beginning of the semester.

Course Website

Copies of supporting material used during lecture (e.g., data tables, charts, graphs, etc.) along with other course information (e.g., homework, reading assignments, and last year's exams) will be posted on the course Moodle website (<http://moodle.umn.edu>)

Note: I don't post my lecture notes on the course website. Consequently, regular class attendance is essential to be successful in this course.

Quizzes and Exams

There will be three on-line quizzes covering microeconomic principles and concepts. The quizzes will be given on Wednesdays of weeks 2–4 of the semester and available to take on-line from 2:00 pm. to midnight that day. The quizzes will consist of multiple choice questions and short problems. Their purpose is to evaluate your comprehension of key microeconomic principles. Each quiz will be worth 20 points. **The lowest score of your three quizzes will be dropped.**

ESPM 5261 students: you are not be required to take the quizzes, but are welcome to do so if you want to test your competencies in microeconomic principles and concepts. The scores you receive on any quizzes you take will not be included in calculating your final course grade.

Three mid-term exams will be given during the semester. An optional comprehensive make-up exam will be available for students who: a) missed one of the three regularly scheduled examinations due to an excused; or b) want the make-up exam to replace one of the mid-term exams. **The grade you receive on the optional make-up exam will replace your lowest mid-term exam score.** You will need a calculator for the quizzes and exams. Use of a laptop computer is not allowed during exams.

Homework

There will be four homework assignments during the semester. All homework assignments will be posted on the Moodle website. You will complete and submit each homework assignment through the Moodle website. Like the quizzes, all homework is automatically graded through Moodle. I've set the website up so that partial credit can be earned for some incorrect answers to most problems. If you want us to consider giving you partial credit for other incorrect answers, you will need to submit a paper copy of your homework when it is due (not later). Note that Moodle will not allow you to submit an assignment after the due date, so be sure keep this in mind when planning for completing these assignments.

Use of Microsoft Excel

You will need to know how to use Microsoft Excel to complete the homework assignments. If you have not created or used Excel spreadsheets, a number of excellent (free) tutorial resources can be found at: <http://it.umn.edu/self-help-guide/excel>.

In-Class Assignments

Throughout the semester, you will be given a question, problem, or similar assignment in class that is to be completed and turned by the end of the class period. These will be short assignments, the sole purpose of which is to assess whether you are grasping the material covered in class that day. The assignments will be made during the class period – there will be no advance notice of these assignments. The number of points assigned to an individual in-class assignment will vary.

Analytic and Research Writing Assignments (5261 students only)

Graduate students registering for the ESPM 5261 version of the course will be required to prepare two writing assignments. Additional information about both writing assignments will be provided as the semester progresses.

Scholastic Dishonesty

All students enrolled in University courses are expected to complete coursework responsibilities with fairness and honesty. Failure to do so by seeking unfair advantage over others or misrepresenting someone else's work as your own, can result in disciplinary action. The University Student Conduct Code defines scholastic dishonesty as plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonest grades, honors, awards, or professional endorsement; altering forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or analysis. Anyone found to be scholastically dishonest can be assigned a penalty up to and including an "F" for the course and will be reported to the Office for Student Conduct and Academic Integrity. In practical terms, this means the work you turn in must be your own.

Course Grading

The course is offered only as A-F grading. For 3261 students, your final course grade is based on three exams, two quizzes, four homework problem sets, and several short in-class assignments. For 5261 students, your final course grade is determined by all of the above (except the quizzes) and two additional writing assignments. I don't "curve" the class. However, the highest cumulative total points earned at the end of the semester by a 3261 student becomes 100% when determining final course grades (this only applies to assigning final grades for 3261 students). Weighting of course assignments in determining the final course grade for 3261 and 5261 students is as follows:

<u>Evaluation Tool</u>	<u>-----3261 Students-----</u>		<u>-----5261 Students-----</u>	
	<u>Points</u>	<u>% Final Grade</u>	<u>Points</u>	<u>% Final Grade</u>
2 Quizzes (20 pts. each)	40	~ 7%		
In-Class Assignments	30	~ 5%	30	~ 4%
Homework Assignment #1	75	~ 12%	75	~ 10%
Homework Assignment #2	50	~ 8%	50	~ 6%
Homework Assignment #3	75	~ 12%	75	~ 10%
Homework Assignment #4	50	~ 8%	50	~ 6%
Exam 1	100	~ 16%	100	~ 13%
Exam 2	100	~ 16%	100	~ 13%
Exam 3	100	~ 16%	100	~ 13%
Writing Assignment #1			100	~ 13%
Writing Assignment #2			100	~ 13%
TOTAL:	620	~ 100%	780	~ 100%

The “+” and “-” grading symbols will be used on the final course grade. Course grades will be assigned as follows:

- A** Demonstrated achievement is outstanding relative to the level necessary to meet the course requirements. (100 – 90 percent)
- B** Demonstrated achievement is significantly above the level necessary to meet the course requirements. (89 – 80 percent)
- C** Demonstrated achievement meets the course requirements. (79 – 70 percent)
- D** Demonstrated achievement is worthy of credit even though it fails to fully meet the course requirements. (69 – 60 percent)
- F (N)** Represents failure (no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) not completed and no agreement between the instructor and student that the student would be awarded an I. (<60 percent)
- I** (Incomplete) Assigned at the discretion of the instructor when, due to extraordinary circumstances (e.g., hospitalization), a student is prevented from completing the work of the course on time. Requires a written agreement between the instructor and student specifying dates and conditions for completion of the make-up work.

Note: The above numeric standards for assigning grades may be adjusted downward (only downward) at the discretion of the instructor, depending on overall class performance.

Quiz, Exam, and Homework Due Dates

Due dates for quizzes, exams, homework, and writing assignments are as follows:

<u>Activity</u>	<u>Due Date</u>
In-Class Assignments	On-going throughout the semester
Quiz 1	January 25
Quiz 2	February 1
Quiz 3	February 8
Exam 1	February 20
Homework Assignment 1	March 22
Homework Assignment 2	April 5
Writing Assignment 1 (5261 students only)	April 5
Exam 2	April 5
Homework Assignment 3	April 24
Homework Assignment 4	May 3
Writing Assignment 2 (5261 students only)	May 3
Exam 3	May 3
Optional comprehensive make-up exam	May 6

Assignment Policy

All quizzes and homework assignments need to be submitted through Moodle prior to their due date, as Moodle will not accept late assignments. The due date for each quiz is midnight on the day it is given. The due date for each homework assignment is the start of the class period on the day it is due. All writing assignments (grad students only) need to be turned in at the beginning of class on the date they are due. All exams must be taken on the day they are scheduled. The only exceptions to these policies are if you have a University-excused absence, legitimate, unavoidable conflict, verified illness, or personal emergency. Except for illness or personal emergency, you will need to make arrangements with me to make up the missed work **PRIOR** to the scheduled due date. For information about UMN policies for excused absences, see: <http://www.policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html>

For students registered for the 5261 version of this class, the following schedule will be used to determine the loss in total possible points (%) for writing assignments that are turned in after the beginning of class on the date they are due.

<u>Time Past Due Date</u>	<u>% Loss in Total Possible Points</u>
Up to 24 hours	25%
24 to 48 hours	50%
48+ to 72 hours	75%
72+ hours	100%

Extra Credit

There is no extra credit in this class. Allowing students to drop one of the three quizzes and providing an optional make-up exam to replace one of the mid-term exams provides ample opportunity for students to improve their grade.

Cell Phones and Electronics

Use of cell phones is not allowed in class. This includes sending or receiving text messages. If you need to be reachable during class time, turn your phone's ringer tone off and take any calls outside the classroom. Absolutely no electronic devices, including cell phones or headsets, can be visible during examinations. If you are found to be using an electronic device one during an exam, you will receive no credit for that exam – no exceptions.

University of Minnesota Policy on Sexual Harassment

Sexual harassment by or toward a member of the University community is prohibited.

Student Mental Health and Stress Management

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via <http://www.mentalhealth.umn.edu/>.

Helpful University of Minnesota Websites:

Library resources: <http://www.lib.umn.edu/course/ESPM/1000>

University Counseling and Consulting Services: <http://www.uccs.umn.edu/index.html>

Technology Training Center: <http://uttc.umn.edu/training/>

Office for Student Conduct and Academic Integrity: <http://oscai.umn.edu/>

Student Conflict Resolution Center: <http://www.sos.umn.edu/>

Course Lecture Schedule^{1, 2}
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Week	Dates	Topic
1	1/18	Course Orientation Natural Resources & Economics Overview
2	1/23 1/25	Principles of Demand Principles of Supply/Production and Cost Analysis Quiz 1
3	1/30 2/1	Production and Cost Analysis Price Elasticity Quiz 2
4	2/6 2/8	Supply - Demand Interaction Market Failures in Natural Resource Management Quiz 3
5	2/13 2/15	Market Failures in Natural Resource Management Policy Tools to Address Market Failures
6	2/20 2/22	Exam 1 Inflation & the Time Value of Money
7	2/27 3/1	Inflation & the Time Value of Money Inflation & the Time Value of Money
8	3/6 3/8	Analysis Tools, Investment Rules, Capital Budgeting Analysis Tools, Investment Rules, Capital Budgeting
SPRING BREAK		
9	3/20 3/22	Natural Resource Project Analysis Design Natural Resource Project Analysis Design
10	3/27 3/29	Non-Market Natural Resource Valuation Non-Market Natural Resource Valuation
11	4/3 4/5	Non-Market Natural Resource Valuation Exam 2

Week	Dates	Topic
12	4/10	Economics of Forest Management
	4/12	Economics of Forest Management
13	4/17	Economics of Fisheries and Wildlife Management
	4/19	Economics of Fisheries and Wildlife Management
14	4/24	Land Economics
	4/26	Wilderness Economics
15	5/1	Payments for Environmental Services
	5/3	Exam 3
	5/6	Optional Comprehensive Make-Up Exam (10:00 am - noon)

¹ Approximate

² Additional topics and/or readings may be assigned during the course of the semester