

FOR533 – Natural Resource Managerial Economics

Spring 2013
MWF 8:00 – 9:20
212 Marshall

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Prerequisites: 1) Graduate Student, 2) FOR207 or an equivalent microeconomic course, 3) APM105 or an equivalent calculus course, or 4) permission of the instructor.

Required

Texts: Wagner, J.E. 2012. *Forestry Economics: A Managerial Approach*. Routledge Textbooks in Environmental and Agricultural Economics. Routledge Press, London

Wagner, J.E. 2013. *Forestry Economics: A Managerial Approach – Handouts and Lecture Notes*. SUNY-ESF, Syracuse, NY. (Available from the ESF Business Office)

Purpose: Courses like biology, ecology, physics, chemistry, silviculture, pathology, entomology, hydrology, soils, genetics, and etc. provide the necessary basis for understanding the interrelationships between the various biological and physical inputs and the outputs they are used to produce (e.g., paper, water, recreation, wildlife, timber, or biodiversity, etc.) that society demands. However, the above courses do not examine the costs and benefits of allocating scarce resources to produce these outputs given various resource inputs coming from forest and similar ecosystems.

The purpose of this course is to address the question: “How to use economic information to make better business and management decisions?” Managers of natural resources, whether associated with profit and not-for-profit businesses and organizations, are faced with making business decisions daily. These decisions require identifying alternative means of achieving given objective(s), and then to select the alternative that accomplishes the object(s) in the most resource effective and efficient manner given the goals of the business or organization. Economics is

the study of how *individuals choose*, with or without the use of money, to employ *scarce productive resources* that have *alternative uses*, to *produce* various commodities and *distribute* them for *current or future consumption* among various persons and groups in society (Wagner 2011). Economics provides a systematic approach for analyzing the costs and benefits of achieving the goal(s) and objective(s) of these different businesses and organizations.

Objectives: There are six main objectives of this course: 1) identify and define the economic information that can be used to make better business and management decisions; 2) apply the principles and methods of benefit-cost analysis to natural resource business and management problems at various temporal and geographic scales; 3) identify the techniques for nonmarket evaluation and identify the situations when different techniques can be applied; 4) use quantitative optimization and other economic analytical tools and models as aids in decision-making; 5) systematically analyze economic models used in natural resources management; and 6) explain and interpret economic models and analyses applied to natural resources management in written and verbal communication. The last is to analyze critically, using economics, policies concerning the natural resource management decisions. This class is designated as an intensive writing course.

The grade you earn on any homework, term paper, term project, or exam will be based on your ability to demonstrate an analysis level of knowledge. Table 1 illustrates Bloom's six cognitive levels of knowledge. They increase from the lowest level of definition to the highest level of evaluation.

Note: To demonstrate an analysis level of knowledge, you will have to use definition, comprehension, and application.

Table 1. Bloom's Cognitive Levels of Learning^s

Cognitive Level	Activities
Knowledge	Remembering facts, data, terms, concepts, definitions, principles; Memorize and Recall
Comprehend	Explain, predict, interpret, infer, summarize, translate, give examples of the meaning of material to an intelligent person with no formal training in economics, forestry, managerial economics
Apply	Apply, solve, show make use of, modify, demonstrate, compute problems unlike those described in class
<i>Analyze</i>	<i>Breakdown material into component parts to describe, explain, and interpret interrelationships; compare & contrast</i>
Synthesize	Produce something new or original from component parts, design, construct, develop, formulate
Evaluate	Make a judgment based on a pre-established set of criteria, appraise, evaluate, justify, judge

[§]Bloom, B.S., ed. 1956. *Taxonomy of Educational Objectives, Vol. 1: Cognitive Domain*. McKay, NY.

I will provide you with in-class examples and exercises of how this is done. This skill will be very useful in answering exam questions, completing homework assignments, and writing your critical analysis and term paper.

Economic

Terms: You need to understand the jargon and terms that economists use to be able to explain these concepts to an intelligent person with no formal training in economics or forestry economics. Therefore, you are responsible for knowing the definitions of all economic terms; I will not cover these in class. My advice is to create a glossary of economic terms.

Exams: There are 2 (two) midterm exams and 1 (one) final exam. The midterm exams are worth 100 points each and composed of definitions, short answers, and longer answer problems. The final exam is worth 200 points and has the same format as the midterms. In addition to covering the material from the last 5 weeks of class, it will also cover material from the two midterm exams.

You need to bring your own calculator to the exams. NOTE: A cell phone will not be allowed to be used as a calculator. NOTE: You may share calculators only after they have been given to myself or the GA to show us that you have cleared any and all memory. This will take time away from you working on the exam (an opportunity cost). Thus I would advise that everyone bring their own calculator.

Term Paper: The term paper is worth 100 points. The purpose of the term paper is to use the theories and techniques we have discussed to analyze critically at least one (1) article of your choice. More specific information is contained in the term paper assignment handout. *The term paper is due on the last day of class.*

Quizzes: Up to five (5) unannounced quizzes may be given during the semester. Each quiz is worth 20 points. These quizzes are used to help me determine if you are understanding the material presented. In addition, they are used to help you prepare for the examinations.

Homework: Various homework sets will be assigned during the semester. The work you turn in must be done in a professional manner. It is advisable to work with the other graduate students in the class when completing homework assignments: however, the final product you turn in must be your own. In other words, do not just copy someone else's answers.

Homework assignments are structured differently than exam questions. This is done on purpose. You have more time to answer homework assignments than exam questions and thus you can spend more time demonstrating an analysis level of knowledge (Table 1). Exam questions will focus primarily on definition and

comprehension (Table 1).

Rules for Turning in Homework:

1. As you will be professionals very soon and as a professional you *must* meet deadlines, the complete and compiled homework must be turned in at the beginning of class.
2. Homework is due at the start of class and will be collected by the Graduate Teaching Assistant. If the homework is not turned in at that time it will be considered late by 1 (one) day. **The penalty for turning homework in late is 50% per day for each day late.**
3. No electronic copies of the homework will be accepted.
4. If you turn in homework late, the homework must be physically given to the Graduate Teaching Assistant either during office hours or by appointment.
5. Do not hand in homework to Dr. Wagner.

Business
Plans

You are to develop a 10-year business plan for one (1) of the six (6) existing for-profit businesses managed by the Director of Forest Properties. You will provide two (2) hard copies of your plan plus a CD containing your plan and cash flow and income statement spreadsheets. Past business plans have been instrumental in managing these businesses; for example, hiring summer interns from this class to help manage these businesses. More detailed information is contained in the business plan assignment handout.

Plagiarism: If you are caught plagiarizing from any source on any type of assignment (e.g., homework, paper, exam, quizzes, or extra credit), you will receive a grade of zero (0) for that assignment.

Class

Participation: Class attendance is vital – absences, for any reason, do not relieve the student of the responsibility for assignments and lecture materials covered during the absence. Evidence shows that those who attend and participate in class discussions – on average – do better than those that do not. If you encounter a situation beyond your control in which you will be missing **three (3)** or more days of class, you can contact the Office of Career and Counseling Services (110 Bray, 315-470-6660, Fax: 315-470-4728) and they will contact all your instructors for you. Supportive documentation may be required.

Class

Notes: I will use PowerPoint slides to present the material. These slides will also be available on the Blackboard.

**Having the PowerPoint slides is not a substitute for coming to class.
I reserve the right to change my PowerPoint slides as I see fit.**

E-Mail: I will periodically e-mail you information by using your SU student e-mail

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address. Therefore, you should check your SU student e-mail.

Stump the
Chump:

This is the part of the class where you get to put me in the hot seat. The first part of the assignment is to find a news story or article from the popular press (not an academic journal) that you feel pertains to the study of managerial economics for environmental professionals. Briefly summarize the news story or article. The second part of the assignment is to develop at least one question, based on your reading, as to how economic information could be used to help make better business decisions in the given situation. I must demonstrate how economics information can be used to help make intelligent business decisions given the situation you summarize.

Final Grade: The final grade is based on the following weighting:

Final Exam	20%
1 st Exam	20%
2 nd Exam	20%
Homework & Quizzes	20%
Term Paper	20%
Total	100%

The final grade will be calculated as follows:

Grade	Range
A	100% – 95%
A–	94.999% – 90.000%
B+	89.999% – 86.667%
B	86.666% – 83.334%
B–	83.333% – 80.000%
F	79.999% – 0.000%

Learning
Advice:

This course will require, on average, three to four hours of study three times a week. The course uses material presented previously as a foundation for new material. Therefore, it is ill advised to try to cram for the exams. Work on understanding the definitions of the economic terms and concepts.

General Guidelines for Reading the Text (Adapted from Dr. Stehman)

1. Focus, you only want to go through this once, so eliminate distractions. If you are trying to read while watching TV and you know that you really can't do both, then postpone one activity until later.
2. Make it active: have your calculator, pen or pencil, and paper handy. Don't just read it like you would a novel (it obviously isn't a novel). Copy

- definitions and formulas, calculate examples, and interpret results.
3. Read the examples and descriptive material for motivation. Why do the authors want you to know about this? Do they convince you that this is important? Are there related examples you can think of that are more relevant to what you care about?
 4. When you encounter a formula, copy it down. Repetition helps make the notation and formulas familiar. Write a word or words to indicate what this formula represents (e.g., Profit).
 5. Think about how to interpret and use the result. For example, the economic model of profit is a descriptor of human decision behavior.
 6. Look for information in the book that elaborates on the formula or application.
 7. Before you end your study session, conduct a brief mental review of what you covered, and note for future reference any difficult topics you may need to revisit or ask about in class.
 8. Reward yourself for accomplishing something. You had the discipline and patience to sit down and work on something that is not often inherently fun.

Work with the books (don't just read them) between each class. This will enhance your understanding of lectures, you will not fall behind, and you will not be faced with the onerous task of trying to do a whole 2-3 weeks work at once (and if you put it off that long, you probably aren't going to do the reading or work anyway). Consistency of effort is helpful with this type of material.

Maintaining a consistent approach to learning a subject is an important general element of learning (whether it is economics or anything else). A little bit of work every day over a long period of time results in major achievements. You will likely find that the hardest part is getting started. I have this problem all the time. When I'm really putting off getting to work, I will decide that if I work 15 minutes or so, I can stop. Sometimes the 15 minutes turns into an hour or two, sometimes it turns into 10 minutes. But whatever the case, 30 minutes is better than 15, 15 minutes is better than 10, 10 minutes is better than 5, and even 5 is better than nothing. The point is, do something!

Student
Support
Services:

If you are having difficulties, missing classes, or personal problems, as noted in the ESF Student Handbook, there are offices at both ESF and SU available to provide academic support, as well as career, and personal counseling. The ESF Office of Career and Counseling Services, 110 Bray Hall, 470-6660, can direct you to the proper source of help.

Confidentiality is assured

If you experience family or health emergencies, which will interfere with your ability to succeed in this or other courses, call the ESF Office of Career and Counseling Services (315-470-6660). This office can give official endorsement to

your need for accommodation and will also contact all your class instructors for you, should such an emergency require you to be absent from campus.

ESF

Student

Handbook: A PDF version of the ESF Student Handbook can be downloaded from <http://www.esf.edu/students/handbook/>. This handbook serves as an official guidebook for ESF students. It outlines many of ESFs policies and services such as Codes of Student Conduct, Academic Policies, and Academic Grievance Procedures, etc. The Codes of Student Conduct spell out a student's rights as well as responsibilities. Inappropriate behaviors that disrupt the classroom learning environment will not be tolerated.

ESF

Judicial

Handbook: A PDF version of the ESF Judicial Handbook can be downloaded from <http://www.esf.edu/students/handbook/>. This handbook outlines the policies, processes, and procedures of ESFs judicial system. It includes such topics as Philosophy of the Code, Student's Rights/Responsibilities, and Code of Student Conduct, etc. Student's Rights/Responsibilities spell out appropriate and inappropriate behaviors. Inappropriate behaviors that disrupt the classroom learning environment will not be tolerated.

Cell Phones

Beepers

Etc.: All cell phones, beepers, pagers, and similar electronic devices must have the ringer turned on *vibrate*. The only acceptable use of your electronic devices during class is to receive emergency messages. Texting friends, surfing the web, and listening to music, etc. do not constitute an emergency and will not be tolerated.

Class Video or Audio Recording

Policy: Students are prohibited from recording classes using any medium.

Observing Religious

Holy Days Please notify me as early as possible if any scheduled exam or homework assignment due date conflicts with observing a religious holy day. We will work with you to set up alternative times to take exams or turn in homework assignments.

Spring 2013			FOR333/533 Lecture Schedule - 16 Jan 2013					
Date	Day	Week	Lecture #	Topic	Textbook Readings	Case Study	Homework Due Date	
15-Jan	Tue	1	1	Introduction	Wagner, Chapt. 1			
17-Jan	Thur		2	Introduction & Discussion of Business Plan Assignment - Mr. Davis, Director Forest Properties	Wagner, Chapt. 1			
22-Jan	Tue	2	3	Production Systems	Wagner, Chapt. 2	1, 8, 12, 13	Economic Model	
24-Jan	Thur		4	Production Systems	Wagner, Chapt. 2			
29-Jan	Tue	3	5	Cost	Wagner Chapt. 3	1, 5, 9, 10, 11, 14	Production System	
31-Jan	Thur		6	Cost	Wagner Chapt. 3			
5-Feb	Tue	4	7	Revenue	Wagner, Chapt. 4	1, 9, 10, 11	Cost	
7-Feb	Thur		8	Revenue	Wagner, Chapt. 4			
12-Feb	Tue	5	9	Profit	Wagner, Chapt. 5	1, 9, 10, 11, 14	Revenue	
14-Feb	Thur		10	Profit	Wagner, Chapt. 5			
19-Feb	Tue	6		<u>Exam #1</u>				
21-Feb	Thur		11	Capital Theory: Introduction	Wagner, Chapt. 8	1, 3, 4, 6, 12, 13, 14	Profit	
26-Feb	Tue	7	12	Capital Theory: Introduction	Wagner, Chapt. 8			
28-Feb	Thur		13	Capital Theory: Introduction	Wagner, Chapt. 8			
5-Mar	Tue	8	14	Capital Theory: Investment Analysis	Wagner, Chapt. 8			
7-Mar	Thur		15	Capital Theory: Investment Analysis	Wagner, Chapt. 8			
12-Mar	Tue			<u>Spring Break</u>				
14-Mar	Thur			<u>Spring Break</u>				
19-Mar	Tue	9	16	Capital Theory: Investment Analysis	Wagner, Chapt. 8			
21-Mar	Thur		17	Forest Rotation Problem	Wagner, Chapt. 9			
23-Mar	Sat			Business Plan Field Trip #1 - Heiberg Forest (Mr. Davis)				
26-Mar	Tue	10	18	Forest Rotation Problem	Wagner, Chapt. 9			
28-Mar	Thur		19	Forest Rotation Problem	Wagner, Chapt. 9			
2-Apr	Tue	11		<u>Exam #2</u>				
4-Apr	Thur		20	Demand and Supply	Wagner, Chapt. 6	1		
6-Apr	Sat			Business Plan Field Trip # 2 - Heiberg Forest (Mr. Davis)				
9-Apr	Tue	12	21	Demand and Supply	Wagner, Chapt. 6			
11-Apr	Thur		22	Market Equilibrium and Structure	Wagner, Chapt. 7	1, 2, 4	Capital Theory	
16-Apr	Tue	13	23	Market Equilibrium and Structure	Wagner, Chapt. 7			
18-Apr	Thur		24	Taxes	Wagner, Chapt. 11			
23-Apr	Tue	14	25	Taxes	Wagner, Chapt. 11			
25-Apr	Thur		26	Estimating Nonmarket Values	Wagner, Chapt. 12	6, 7		
30-Apr	Tue	15	27	Estimating Nonmarket Values	Wagner, Chapt. 12			
				Final Exam			Business Plan	

Case Studies	
1	Becker et al. 2004. PNW-GTR-623
2	Brubaker et al. 2006. <i>North. J. Appl. For.</i> 23(4):234-240
3	Brukas et al. 2001.. <i>Forest Policy and Economics</i> . 2(2):143-156
4	Bullard et al. 2002. <i>South. J. Appl. For.</i> 26(1):26-31
5	Burdurlu et al. 2006. <i>Forest Products Journal</i> . 56(1):46-52
6	Calish et al. 1978. <i>Jour. of For.</i> 76:217-221
7	Canham. 1986. <i>Jour. of Env. Mgmt</i> . 23:335-339
8	Chang et al. 2005. <i>Forest Products Journal</i> . 55(10):49-55
9	Graham et al. 2006. <i>Jour. of For.</i> 104(7):94-100
10	Huyler. 2000. NE-RP-712
11	Lichtkoppler & Kuehn. 2003
12	Patterson and Xie. 1998. <i>Forest Products Journal</i> 48(1):76-80
13	Patterson et al. 2002. <i>Forest Products Journal</i> . 52(1):23-26
14	Wossink and Osmond. 2002. <i>Journal of Soil and Water Conservation</i> . 57(4):213-220