

**FO 8143 – ADVANCED FOREST ECONOMICS****TENTATIVE COURSE SYLLABUS**

Contact Information	Course Details
<b>Instructor:</b> Dr. Robert K. Grala <b>Office:</b> 343 Thompson Hall <b>Phone:</b> 325-7039 <b>Office Hours:</b> Tuesday and Thursday, 1-3 pm or by appointment	<b>Schedule:</b> 9:30 am -10:45 am Tuesday & Thursday <b>Location:</b> 215 Thompson Hall <b>Credits:</b> 3

**Required Readings:** readings include journal and USDA Forest Service publications that are listed at the end of this syllabus in “Required Readings” section. Other materials will placed on FO 8143 myCourses webpage. These publications can accessed via Mississippi State University’ Library and USDA Forest Service Web sites.

**Additional Required Items:**

- A scientific calculator with a power function.
- Access to a computer with a high-speed internet connection.

**Course Description:** (Mississippi State University’s Bulletin): Three hours lecture. Application of current theory and techniques of economics of forestry. Emphasis is on the use of quantitative tools to improve decision making in forest resource management.

**Material content:** The course will start with discussion of basic economic concepts in terms of forestry and review of financial analysis. Significant part of the course will be devoted to economic tools used to evaluate forest projects and methods used to account for risk and uncertainty. In addition, you also will learn about timberland valuation, timberland investment, and valuation of non-market forest good and services. Finally, you will study the role of U.S. forestry in global forest markets.

**Course Learning Outcomes:** The primary goal of this course is to help you expand your understanding of theoretical concepts related to forest economics and their applications in decision making related to the use and management of forest resources. Concurrently to theoretical aspects you also will study recent trends in applied research to examine how effective various economic tools are in solving forestry-related problems. By the end of this course you should achieve the following:

1. Be able to apply basic and advanced forest economic concepts and theoretical models to solve problems related to the management, allocation, and utilization of forest resources.
2. Understand economic relationships between forestry and other sectors and be able to determine potential shifts in management of forest resources in response to changes in

these sectors.

3. Be able to select and use appropriate financial criteria to compare forest investments, conduct complex sensitivity analyses, and generate recommendations based on the management objectives
4. Identify and account for risk and uncertainty associated with forest investments and conduct long-term economic analyses.

The course outline below presents topics that will be instructed during the semester. Modifications to the course content might be needed during the semester and they will be announced in a timely manner. Numbers in square brackets indicate publications listed in the “Required Readings” section.

Week	Date(s)	Topic(s)	Required Readings
1	Jan. 14 & 16	<b>Course orientation and introduction to forest economics:</b> features distinguishing forestry from other industries and their implications to economic analysis.	
2	Jan. 21 & 23	<b>Review of forest investment financial analysis:</b> valuing forest investments over time, interest rates, time preferences, compounding and discounting.	[1] [2] [3] [4] [5]
3 & 4	Jan. 28 & 30 Feb. 4	<b>Review of forest investment financial analysis:</b> accounting for inflation, nominal and real rates of return, and interpretation of return rates.	[6] [7] [8] [9] [10]
	Feb. 6	<b>Term-paper topics:</b> students will present their proposed term paper topics.	
5 & 6	Feb. 11, 13 & 18	<b>Review of capital budgeting:</b> guiding criteria of accepting or rejecting forest investments and ranking of forest investments.	[11] [12]
	<b>Feb. 20</b>	<b>EXAM 1</b>	
7 & 8	Feb. 25 & 27	<b>Timber demand and supply, pricing of forest products, and trends in timber prices:</b> derived demand for timber, short and long-run timber supply, timber sales, and long-run projections of timber supply and prices.	[13]
	Mar. 1 & 3	<b>Term paper progress:</b> students will present their progress on proposed term papers.	
9	Mar. 11 & 13	<b>SPRING BREAK</b>	
10	Mar. 18 & 20	<b>Concept of optimal rotation:</b> optimal financial and biological forest rotations and their relation to timber supply, and influence of various economic and biological factors on optimal rotation length.	[14] [15]

<b>10</b>	Mar. 25 & 27	<b>Forest management under risk and uncertainty:</b> differences between risk and uncertainty, risk preference, risk and uncertainty associated with natural disturbance events and market fluctuations, and risk management (strategies for minimizing the risk).	[16]
<b>11</b>	Apr. 1 & 3	<b>Forest management under risk and uncertainty:</b> methods of incorporating uncertainty and risk into financial analysis of forest investments, evaluating investment strategies by using risk adjusted discount rates, certainty equivalents, expected values.	[17] [18]
<b>12</b>	Apr. 8 & 10	<b>Forest valuation and timberland investment:</b> calculating value of timberland, timber and bare land, appraisal methods, timberland investment options, stand-alone timberland investing, investment portfolio diversification, and investment strategies.	[19] [20] [21] [22] [23] [24]
<b>13</b>	Apr. 15	<b>Forest nonmarket goods and services:</b> use and non-use forest values, positive and negative externalities, concepts of willingness-to-pay and willingness-to-accept, and valuation of forest nonmarket benefits using stated and revealed preference methods.	[25]
<b>Apr. 17</b>		<b>EXAM 2</b>	
<b>14</b>	Apr. 22 & 24	<b>Presentations:</b> students will present their term papers.	
<b>15</b>	Apr. 29	<b>U.S. and global forest markets:</b> international trade of forest products, competition trends in forest markets, major exporters and importers, aspects of globalization, production specialization, and comparative advantage.	[26]
<b>16</b>	<b>May 5</b>	<b>FINAL EXAM 8:00-11:00 a.m.</b>	

**Assigned Readings:** It is assumed that you have read the assigned readings before scheduled class. Doing so will help you better understand the topic and will enhance your learning experience. Also, it will help you identify areas particularly interesting or difficult, and help instructor facilitate lectures accordingly. Each student will be required to prepare a one-page summary of each assigned paper, short presentation, and list of topics for class discussion. The summary should briefly discuss major points of the paper, identify areas needing clarification, and suggest topics for classroom discussion. The summaries will be posted on myCourses and will be available to all students enrolled in the course to help you prepare for the exams. In addition paper discussion points will be posted on the course discussion board. Each student will be required to make at least four discussion posts for each discussed topic. Posts will be graded based on their relevance to the discussed paper or posts posted by other students.

**myCourses webpage:** This course has myCourses Web site that provides you with an access to various course materials such as class notes, discussion board, grades, announcements, e-mail, and calendar. Please, visit this Web site regularly as new documents will be added frequently. You can access myCourses Web site for this course at <https://mycourses.msstate.edu>.

**Exams:** There will be two period exams followed by the final exam. The period exams will be non-cumulative and cover topics as presented in the tentative course outline. The final exam will be comprehensive. There will be a review session before each exam to help you prepare for the exam and clarify difficulties with the course material.

**Term Paper:** As a part of this course each student is required to prepare a term paper on topic related to forest economics or finance. The topic of the paper must be approved by the instructor. The paper length should be between 8 and 10 pages – excluding title page, tables, figures, and references. Text should be double-spaced with 1” margin on each side. Font should be Times New Roman, size 12. Citations should follow “A Manual for Writers of Term Papers, Theses and Dissertations” by Kate L. Turabian. Students will be required to prepare a 20-minute PowerPoint presentation on her/his topic and present it to classmates (presentations will be posted online and available to other students). The term paper grade will be based on the quality of the paper, presentation, and answers to the questions. A 10% penalty per calendar day will be applied to all late papers without extension.

***Paper deadlines:***

February 6, 2014 – topic must be submitted to the instructor and approved.

April 10, 2014 – paper must be submitted to the instructor.

April 22 and 24, 2014 – paper will be presented to the class.

**Grading:** Your course grade will depend on your performance in completing various course components. Partial point scores, final point score and final grade will be posted on FO 8143 myCourses Web site and will be based on the following point distribution:

<b>Item</b>	<b>Points</b>
Exams (100 points each)	300
Term paper	100
Term paper presentation	50
Assigned reading summaries	60
Discussion board posts	60
<b>Total</b>	<b>570</b>

Grading scale:

A	90-100%
B	80-89.99%
C	70-79.99%
D	60-69.99%
F	less than 60%

- Additional components such as graded practice exercises might be added during the semester.
- If you think that your partial grade posted on FO 4113/6113 Web site is incorrect, you have seven calendar days from the date the grade is posted to notify the instructor and discuss potential solutions. After that time, requests for grade change will not be considered.

**Attendance Policy:** Students are expected to attend all classes. A make-up exam might be given only if absence is considered excused by the university. Information on university policy on attendance and list of qualifying absences are provided in MSU Academic Operating Policy and Procedure Manual, Section 12.09, available online at <http://www.msstate.edu/dept/audit/PDF/1209.pdf> (access verified on January 11, 2014). Students will be asked to provide satisfactory evidence to be excused. A missed exam or assignment (if not excused) will result in a zero score. If an exam or assignment is missed due to excused absence, a student will be asked to complete a make-up assignment. If a period exam is missed due to excused absence, a student will be assigned the same grade as on the final exam. If the final exam is missed due to excused absence, the student will be assigned a grade of I (incomplete). Information on grade I and steps necessary to resolve this grade are presented in MSU Academic Operating Policy and Procedure Manual, Section 12.12, available online at <http://www.msstate.edu/dept/audit/1212.html> (access verified on January 11, 2014).

**Academic Accommodations for Students with Disabilities:** Students who require academic accommodations should contact the Office of Student Support Services, which will process their request. The office will need to be provided with documentation to evaluate the request. Additionally, the student should notify the instructor as needing academic accommodation. Every effort will be made to accommodate the request. Policy and steps for requesting such accommodations are outlined in MSU Academic Operating Policy and Procedure Manual, Section 12.35, available at online <http://www.msstate.edu/dept/audit/1235.html> (access verified on January 11, 2014). Additional guidelines related to documentation are included in MSU Academic Operating Policy and Procedure Manual, Student Affairs OP 91.130, available online at <http://www.msstate.edu/dept/audit/91130.html> (access verified on January 11, 2014).

**Academic Misconduct:** Students are required to follow MSU Honor Code:

**"As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."**

A full description of the code, its violations, and procedures for addressing them are outlined in

MSU Academic Operating Policy and Procedure Manual, Section 12.07, which is available online at the Student Honor Code Office Web site at <http://www.honorcode.msstate.edu/policy/> (access verified on January 11, 2014). Students are urged to familiarize themselves with the full text of the above document. Students will be required to sign acceptance of the Honor Code on every exams or assignment in order for these items to be graded.

**Professional Expectations for Students in the Forestry Program:** MSU Department of Forestry has adopted policy related to behavior expected from students in classrooms, Thompson Hall building, and during indoor and outdoor laboratories and activities. Handouts specifying these expectations and consequences for inappropriate behavior will be posted on FO 8143 Web site.

### Required Readings

- [1] W.D. Klemperer, Economic Analysis Applied to Forestry: Does It Short-Change Future Generations?, *Journal of Forestry*, **74** (1976) 609-611.
- [2] B.B. Foster, A Service Foresters' Guide to Investment Terminologies--Which Ones Are Most Easily Understood By Landowners?, *Southern Journal of Applied Forestry*, **8** (1984) 115-119.
- [3] P.A. Harou, A note on the real rate of discount, *Forest Science*, **29** (1983) 249-252.
- [4] B.B. Foster, G.N. Brooks, Rates of Return: Internal or Composite, *Journal of Forestry*, **81** (1983) 669-670.
- [5] C.H. Schallau, M.E. Wirth, Reinvestment Rate and the analysis of forestry enterprises, *Journal of Forestry*, **78** (1980) 740-742.
- [6] W.D. Klemperer, Interpreting the Realizable Rate of Return, *Journal of Forestry*, **79** (1981) 616-617.
- [7] C.H. Schallau, M.E. Wirth, "Interpreting the Realizable Rate of Return": A Reply, *Journal of Forestry*, **79** (1981) 618-618.
- [8] W.D. Klemperer, Realizable Rate of Return: A Rejoinder, *Journal of Forestry*, **79** (1981) 673-673.
- [9] S.H. Bullard, J.E. Gunter, M.L. Doolittle, K.G. Arano, Discount Rates for Nonindustrial Private Forest Landowners in Mississippi: How High a Hurdle?, *Southern Journal of Applied Forestry*, **26** (2002) 26-31.
- [10] H.M. Gregersen, Effect of inflation on evaluation of forestry investments, *Journal of Forestry*, **73** (1975) 570-572.
- [11] J.C. Fortson, R.C. Field, Capital Budgeting Techniques for Forestry: A Review, *Southern Journal of Applied Forestry*, **3** (1979) 141-143.
- [12] D. Rose, C.R. Blinn, G.J. Brand, A guide to forestry investment analysis, U.S. Dept. of

Agriculture, Forest Service, North Central Forest Experiment Station, St. Paul, MN, 1989.

[13] S.A. Barlow, I.A. Munn, D.A. Cleaves, D.L. Evans, The Effect of Urban Sprawl on Timber Harvesting: A Look at Two Southern States, *Journal of Forestry*, **96** (1998) 10-14.

[14] S. Calish, R.D. Fight, D.E. Teeguarden, How Do Nontimber Values Affect Douglas-fir Rotations?, *Journal of Forestry*, **76** (1978) 217-221.

[15] C.-H. Huang, G.D. Kronrad, The Effect of Carbon Revenues on the Rotation and Profitability of Loblolly Pine Plantations in East Texas, *Southern Journal of Applied Forestry*, **30** (2006) 21-29.

[16] W.G. Lewellen, Some observation on risk-adjusted discount rates, *Journal of Finance*, **32** (1977) 1331-1337.

[17] S.E. Celec, R.H. Pettway, Some observations on risk-adjusted discount rates: a comment, *Journal of Finance*, **34** (1979) 1061-1063.

[18] T.A. Thomson, Risk and Return from Investments in Pine, Hardwoods, and Financial Markets, *Southern Journal of Applied Forestry*, **16** (1992) 20-24.

[19] J.E. de Steiguer, Forestland Market Values, *Journal of Forestry*, **80** (1982) 214-216.

[20] M.E. Aronow, C.S. Binkley, C.L. Washburn, Explaining Timberland Values in the United States, *Journal of Forestry*, **102** (2004) 14-18.

[21] D.N. Wear, D.N. Newman, The Speculative Shadow over Timberland Values in the US South, *Journal of Forestry*, **102** (2004) 25-31.

[22] J.H. Beuter, R.J. Alig, Forestland Values, *Journal of Forestry*, **102** (2004) 4-8.

[23] W.L. Mills, Forestland: Investment Attributes and Diversification Potential, *Journal of Forestry*, **86** (1988) 19-24.

[24] F.C. Zinkhan, Forestry Projects, Modern Portfolio Theory, and Discount Rate Selection, *Southern Journal of Applied Forestry*, **12** (1988) 132-135.

[25] P.H. Pearse, T.P. Holmes, Accounting for Nonmarket Benefits in Southern Forest Management, *Southern Journal of Applied Forestry*, **17** (1993) 84-89.

[26] J.A. Turner, J. Buongiorno, S. Zhu, J.P. Prestemon, The U.S. forest sector in 2030: Markets and competitors, *Forest Products Journal*, **55** (2005) 27-36.