Instructor and Office Hours

Fred Cubbage  Professor, Room 3118 B Jordan Hall  fred_cubbage@ncsu.edu

Office Hours:  Tuesday Thursday, 10:00 – 10:30, Jordan Hall; or After Class, T-Th Gardner Hall

Teaching Assistant and Office Hours

Logan Richardson   lerichar@ncsu.edu   Office Hours: by appointment

Class Meeting Times

11:45 am - 1:00 pm, Tuesday and Thursday, 2213 Gardner Hall

Overview, Goals, and Objectives

At the completion of this course, students will be able to (1) estimate production functions, costs, returns, and profits for forestry operations; (2) develop physical and cash flow tables necessary to perform financial analyses of short- and long-term forestry investments; (3) perform financial and economic analyses necessary to estimate the investment returns of long-term forestry activities; (4) use capital budgeting criteria and tools correctly to make recommendations regarding forestry investments; (5) compute property tax and income tax effects on forestry investments; (6) evaluate returns for nontimber forest products and the value of nonmarket forest benefits; (7) understand forest products demand and calculate the effects of price on demand; and (8) understand partial equilibrium models and effects of external shocks on supply, demand and prices of forest products

Required Readings and Textbook


Some readings will be required and available at Sir Speedy, Mission Valley

Final letter grades will be assigned according to the following distribution.

(1) Homework Assignments (5 @5% each)  25%
(2) Class presentations of readings or problems  5%
(2) Exam #1  35%
(3) Exam #2  35%
For graduate students, a term paper will be required for 10% of the grade, and the tests will count 30% each. The graduate student term paper will be due December 4, 2018.

Grades will be based approximately on a conventional scale with 90 or better being an A; 80 and better a B; 70 or better a C; 60 or better a D; and less than 60 an F. Some adjustment will be made based on the final class distribution.

**Homework assignments** are labs that provide examples of the skills required for the class and the profession, with applications to forest resources.

**Exams** are tests of each student’s grasp of the material presented in the class, including readings, lectures, and applications.

**Graduate Term Papers** are expected to be 8 to 10 page papers covering an application of one of the subjects covered in class applied to a specific topic, such as an investment analysis of a complex timber management or investment problem, a nonmarket valuation of carbon, agroforestry, or any other relevant topic. It should include a clear objective, appropriate literature, the application, economic calculations, and conclusions. It should include sections on objectives, literature, methods, analysis, results, and conclusions. Alternatively, graduate students may perform a preliminary economic analysis of a problem related to their Master’s research.

**Forest Economics – FOR 319/519 Class Schedule 2018 Version #4; 15 September 2018 Including most confirmed speakers; subject to change based on availability**

August 23  
Introduction & Class Procedures

August 28  
Forest Economics Overview  
Class Readings: Cubbage et al. 2007, Wagner 2012, Chapter 1

**Topic 1: Production Functions and Economics - Principles**

August 30  
Stand and Stock Tables and Growth and Yield  
Readings: Wagner, 2012 Chapter 2  
*Homework Assignment – Lab 1: Stand and Stock Tables*

September 4  
Global Timber Investments, 2005-2017  
Reading: Cubbage et al. 2014

September 6  
Production Economics and Production Functions  
Readings: Wagner, 2011, Chapter 2

September 11  
Input-Output Relationships, Cost Functions, Relevant Costs  
Readings: Wagner, 2011, Chapter 3
September 13  
Class canceled due to Hurricane Florence

Lab 1 Due at 11:45 am on Moodle; bring hard copy to class on September 18

September 18  
Timber Price Reporting Data, Conversion Factors, Robert Bardon
Readings: Wagner 2011, Chapter 4, Bardon Handout
Homework Assignment – Lab 2 – Timber Stand Valuation

September 20  
Profits, Multiple Inputs, and Multiple Products
Reading: Wagner 2011, Chapter 5

**Topic 2: Capital Budgeting and Investment Analyses**

September 25  
Discounted Cash Flow Analysis and Capital Budgeting
Readings: Wagner 2011, Chapter 8, Cubbage et al. 2012, p 1-20

September 27  
Analyzing and Making Forest Investments for Timber Investment Management Organizations; Ernest (Bo) Dixon, Global Forest Partners

Lab 2 Due

Homework #3: Cash Flow Analyses & Capital Budgeting with Spreadsheets

October 2  
Discounted Cash Flow Analysis of Timber and Environmental Services: Silvopasture in North Carolina; Stephanie Chizmar, NCSU PhD Student
Reading: Chizmar et al. 2018

October 4  
Fall Break

October 9  
Nonmarket Valuation
Erin Sills, Professor
Reading: Wagner, Chapter 12

October 11  
Discount Rates, Risk, and Inflation
Reading: Cubbage et al. 2012 p. 20-38, Wagner 2011, Chapter 10

Homework #3 Due

October 16  
Capital Budgeting / Review for Exam 1

October 18  
Exam #1: All Material Covered through October 16

**Topic 3: Production Economics and Forest Operations**

October 23  
Hofmann Forest Visit (optional / weather and site conditions permitting)
Depart at 6:30 am, Biltmore Lower Lot
October 25  
Forest Operation Costs: Planting, TSI, Harvesting, Roads
Readings: Cubbage and Duncan 2001
**Homework #4: Estimating Timber Harvesting Costs with Spreadsheets and the Auburn Harvesting Analyzer**

October 30  
Forest Operation Costs: Planting, TSI, Harvesting, Roads
Readings: Review Wagner, Chapter 3; Aust and others various dates

**Topic 4: Timber and Land Taxes and Appraisals**

November 1  
Timberland Appraisals and Valuation I – Principles and Lecture

November 6  
Timberland Appraisals and Valuation II – Class Exercise
**Lab 4 Due**

November 8  
Federal Income Taxes
Readings: Wagner 2011, Chapter 11, IRS Form 1040
**Homework Assignment – Lab 5: Timber Income Taxes**

November 13  
Income Taxes for Timber - Greg Frey
Readings: van der Hoeven and Megalos 2009

November 15  
Property Taxes - Mark Megalos
Readings: Hamilton and Bardon 2007

**Topic 5: Supply, Demand, Regional Economics**

November 20  
Regional Economic Analysis – Rajan Parajuli
Readings: Dahal et al. 2015
**Homework #5 Due**

November 22  
Thanksgiving Holiday

November 27  
FIA Timber Supply Analyses and the SRTS Model– Bob Abt

November 29  
Demand / Bioenergy
Karen Abt, USDA Forest Service (requested)

December 4  
Supply and Demand Interactions – Comparative Statics
Readings: Wagner Chapter 6

December 6  
Review for Final Exam

December 13  
Final Exam  8:00 am – 11:00 am
Readings: Note: Reprinted in the class course pack with prior permission of:
1) All *Journal of Forestry* and *Southern Journal of Forestry*: Reprinted with permission of the Society of American Foresters, Bethesda, MD.
2) All *Forest Products Journal*: Reprinted with permission of the Forest Products Society, Madison, Wisconsin.
3) All *Forest Landowner*: Reprinted with permission of Forest Landowners Association, Atlanta
4) All others: government documents—USDA Forest Service, NC Cooperative Extension Service, Forestry Trade Associations, or others—or manuscripts by Fred Cubbage and others. Any not in the Coursepack are available on the electronic library course reserves for this class.

Citations: