Syllabus - Fall 2020 - Version #7; 1 September 2020
Latest Changes in Schedule in Yellow for Quick Reference
Moodle Site: https://moodle-courses2021.wolfware.ncsu.edu/course/view.php?id=2092
NCSU Library Reserves Course Site: https://reserves.lib.ncsu.edu/
Mediasite: https://mediasite.wolfware.ncsu.edu/online/Channel(for-319-001-fall-2020

Instructors and Office Hours
Fred Cubbage, Professor; Room 3118B Jordan Hall; 515-7789, fred_cubbage@ncsu.edu
TA: Jackson Doyle; jdoyle@ncsu.edu; Contact by email for meetings
Office Hours: Tuesday Thursday by Zoom or by phone; make an appointment via email.

Key COVID-19 Class Safety Requirements
Wearing a full mask over your mouth and nose is required. Violators will be asked to leave. If they refuse, the instructors will leave. Maintain your designated desk spacing and a 6’ distance from the instructors.

Class Meeting Times
11:45 am - 1:00 pm, Tuesday and Thursday, 1218 Jordan Hall, and/or Online via Zoom.
and/or Livestream on Mediasite, or Online via Zoom.
FOR 519 Graduate Students Can Come to Class;
Undergrads Online via Livestream on Mediasite; Attendance Required for Full Credit;
or Taped - if Livestream Fails
Check to See if Guest Speakers Will Be on Zoom or In Person
Lectures for all students will be available online, posted shortly after the scheduled class meeting. Exams will be given online.
We will make the livestream and Zoom class lectures for all students available online, posted within a reasonable amount of time—a day or so—after the regularly scheduled class meeting. Exams will probably be given online with a fixed time period.

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) understand estimation of returns for nontimber forest products and the value of nonmarket forest benefits; and (7) understand partial equilibrium models and effects of external shocks on supply, demand, and prices of forest products.

**Required Readings and Textbook**

Readings will be assigned from various sources, including the principal technical report of:


Some readings will be required and posted on the class Moodle site or on the NCSU Library Reserves.

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

1. Homework Assignments (4 @5%-10% each) 30%
2. Readings summaries 10%
3. Class attendance @ 0.2 points/day 5%
4. Exam #1 27.5%
5. Exam #2 27.5%

Total 100%

For graduate students, a term paper will be required for 10% of the grade, and the homework and readings will count 25% and 5%, respectively. The graduate student term paper will be due November 12, 2020.

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. Plus and minus grades are possible, but rare. 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.

**Class presentations** are a one time 5-10 minute summary of one of the reading assignments.
Readings summaries are required for all students and all readings, and are a 3-4 sentence summary of each assigned reading, covering (1) its main focus; (2) its methods; and (3) its results or findings.

Class attendance consists of being present for class, whether it is held in a face to face format, or a live streamed class at the designated time. Absences with medical notes are allowed.

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 6 to 8 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.

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Forest Economics – FOR 319/519 Class Schedule 2020 Version #7; 1 September 2020
Including current guest speakers

August 11 Introduction & Class Procedures

August 13 Forest Economics Overview
Class Readings: Cubbage et al. 2016

Topic 1: Production and Cost Functions – Core Microeconomic Principles

August 18 Stand and Stock Tables and Growth and Yield
Readings: Cubbage et al. 2013, 4-5, 17-19
Homework Assignment – Lab 1: Stand and Stock Tables

August 20 Production Economics and Production Functions
Readings: Cubbage 1981, Siry et al. 2003, Cubbage et al. 2013, p. 4-10;

August 25 Input-Output Relationships, Cost Functions, Relevant Costs

August 27 Timber Price Reporting Data, Conversion Factors, Robert Bardon
Readings: Bardon Handout, Forest Landowner Association 2017, NC Forest Service 2020
Homework Assignment – Lab 2 – Timber Stand Valuation
September 1  Class meeting shifted back one period; Covid-19 / Moving Pause

September 3  Profits, Multiple Inputs, and Multiple Products
Readings:  Siry et al. 2003
Lab 1 Due at 11:45 am on Moodle; Grads bring hard copy to class

Topic 2:  Capital Budgeting and Investment Analyses

September 8  Discounted Cash Flow Analysis and Capital Budgeting
Readings: Cubbage et al. 2013, p. 27-40
Lab #3:  Cash Flow Analyses & Capital Budgeting with Spreadsheets

September 10  Discounted Cash Flow Analysis of Timber and Cattle:
Silvopasture in North Carolina;
Guest Lecture: Stephanie Chizmar, NCSU PhD Candidate
Reading:  Chizmar et al. 2018 – ISFRE & Two Page Summary
Lab 2 Due at 11:45 am on Moodle; Grads bring hard copy to class

September 15  Discount Rates, Forestry Incentive Programs and Effects
Guest Lecture: Stephanie Chizmar
Readings: Hogaboam and Shook 2004, Cubbage et al. 2013, p. 30-31,
Chizmar et al. 2020, J. Forestry Manuscript

September 17  Global Timber Investments, 2005-2017
Reading: Cubbage et al. 2020

September 22  Analyzing and Making Forest Investments for Timber Investment Management
Organizations; Ernest (Bo) Dixon, Global Forest Partners {Requested, via Zoom}

September 24  Review for Exam
Lab 3 Due at 11:45 am on Moodle; Grads bring hard copy to class

September 29  Exam 1

October 1  Nonmarket Valuation  {Probably on Zoom}
Erin Sills, Professor

Topic 3:  Production Economics and Forest Operations

October 6  Forest Operation Costs: Planting, TSI, Harvesting, Roads, Spreadsheet Analysis
Readings: Werblow and Cubbage 1984, Cubbage and Duncan 2001, MacDonagh et al. 2019
Lab #4: Estimating Timber Harvesting Costs with Spreadsheets and the
Auburn Harvesting Analyzer
October 8  
Forest Operation Costs: Planting, TSI, Harvesting, Roads  
**Machine Rates, Auburn Harvesting Analysis**  
Readings: Aust et al. 2005

October 13  
Production Economics and DCF: Water Farming  
Readings: Hovis et al. 2020, p. 1-8 + Conclusion  
Guest: Meredith Hovis

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

October 15  
Federal Income Taxes  

October 20  
Income Taxes for Timber - Greg Frey  
Li et al. 2020, van der Hoeven and Megalos 2009; [Probably on Zoom]

October 22  
Timberland Appraisals and Valuation I – Principles and Lecture  
Readings: Cubbage et al. 2015, p. 14-22  
**Lab 4 Due at 11:45 am on Moodle; grads bring hard copy to class**

October 27  
Property Taxes - Mark Megalos [Invited; Maybe on Zoom]  
Readings: Hamilton, Megalos, and Bardon 2019

October 29  
SAF Meeting; no class

November 3  
Regional Economic Analyses – Stephanie Chizmar  
Readings: Parajuli and Bardon 2020

November 5  
Supply and Demand: Sawtimber Prices in the South  
Readings: Cubbage et al. 2019

November 10  
Supply and Demand Interactions – Comparative Statics  
Watch: [https://www.youtube.com/watch?v=g9aDizJpd_s](https://www.youtube.com/watch?v=g9aDizJpd_s)

November 12  
Forest Finance and Investment Portfolios  
Readings: Chudy and Cubbage 2020, Bin Mei 2019

November 17  
Review for final exam

November 19  
Final Exam Thursday, 19 November 2020, 12:00-2:00 pm

**Readings: Note: Reprinted or posted on Moodle with prior permission of:**


2) *Forest Landowner*: Reprinted with permission of Forest Landowners Association, Atlanta

3) *Forest Policy and Economics* – Open source documents; reprints allowed
4) All others: government documents—USDA Forest Service, NC Cooperative Extension Service, Forestry Trade Associations, or others—or manuscripts by Fred Cubbage and others. Available on Moodle class site or the NCSU Library Online Course Reserves for this class.

Reading / References / Citations:

This is a list of subject matter references. Those that may be posted on the class website as public documents or with permission of the publisher are there; the others are just references that can be found by individual students if needed, but not reproduced for public use, and will not be used for individual class writeups or for any exams. Look on the Library Course reserves or Moodle site for details.

Detailed Syllabus Elements

Email – Web Access – Moodle

I will use email or Moodle to distribute class assignments and notices occasionally. All electronic materials such as course assignments; updates of course PowerPoints; any taped course lectures; and any other supplementary materials will be posted on the course Moodle web site.

You are expected to check Moodle or your email at least daily for periodic policy class notices. I will be using the email address that you have registered with NCSU. If this isn’t the one you’re likely to check, then please change your registered address. Each written assignment must be submitted in person in class, on a typed manuscript, as well as submitted through Moodle. Note that Moodle registers the date and time submitted, on the relevant day, or will be considered late. The graduate student term paper is due the last day of classes also, at 11:45 am.

Technology Requirements

Hardware

NC State’s Online and Distance Education provides technology requirements and recommendations for computer hardware.

Software – We will use the following, and you are expected to be capable with these programs.

> Moodle and Wolfware
  ○ Moodle Accessibility Statement
  ○ Moodle Privacy Policy
  ○ NCSU Privacy Policy
> Adobe Reader (for reading PDF files)
  ○ Accessibility Statement
  ○ Adobe Privacy Policy
> Zoom:
  ○ Zoom Accessibility Statement
  ○ Zoom Privacy Policy
> Office 365
  ○ Excel, Word
  ○ Accessibility Statement
  ○ Privacy Policy
> Specific mobile applications
> Headsets with microphone (if we use synchronous events)

Students will need to use the following to fully participate in this course.

> Obtain regular access to a reliable internet connection
> Acceptable typing and word processing skills (MS Word, text editors, Google Docs)
> Use of Excel to estimate production and cost functions
> Ability to use online communication tools, such as email (create, send, receive, reply, print, send/receive attachments), discussion boards (read, search, post, reply, follow threads), chats, and messengers.
> Download attachments
> Knowledge of copy/paste and use of spell check
> Use computer networks to locate and store files or data
> Internet skills and ability to perform online research using various search engines and library databases. Visit Distance Learning Services at NCSU Libraries for more information.
> Bring a calculator to exams as well for simple tax policy or other questions.

**Computer and Phone Courtesy**

You can bring a laptop to class, but only use it as requested for any in-class exercises. Cell phone usage is prohibited during class. Do not have your cell phone on your desk or in your lap. It must be stowed in your pocket or bag. Flagrant violation of this policy will result in dismissal from class and you being counted as absent that day. I will not use my phone for the 75 minutes of class, nor should you.

**Make-ups, Late Assignments, and Incompletes**

If an exam is missed as an excused absence, then I will allow a make-up exam, provided the student contacts me as soon as they are able to, even if they are ill or grieving for a family member. A student must return to class as soon as they recuperate from their illness or other absence.

All homework / lab assignments are due at the beginning of class (if we are still meeting F2F) to the TA on the date and time specified on the handout given out the first day of class in order to be considered submitted on time. Any submission after that will be considered late. Assignments also must be submitted on Moodle so we have access to an electronic copy if needed for submission date/time and validity checking. Any assignments emailed to me will receive a 20 point deduction—so please post them on Moodle (undergrads) or bring them to class and post on Moodle (grads).

**Late Assignments will be penalized 10 points for each 24 hour period following the due date and time.** After 5 days late, you may turn in any problem set before the final for a starting grade of a 50; the points deducted from the lab will be taken off of those 50 points. Turn in any late assignments on Moodle if they are ready before the next class meeting.

Incompletes will only be given when there is a documented hardship/medical condition and prior arrangements have been made with the instructor. All incompletes must be resolved by the end of the next semester or they will be converted to an F.
Absences and Attendance

Attendance will be taken daily, and you receive 0.2 points of credit for each day you attend. We all are making difficult choices to meet in a F2F classroom, so do be conscientious and take advantage of this opportunity.

However, don’t come to class sick, especially with COVID-19 symptoms. I will grant excused absences liberally in accordance with university policy, normally for documented cases of hardship or illness. With prior notice, I will allow reasonable absences for participation in religious services or holidays, and participation in University sanctioned activities. Do obtain a note from the Health Service or other medical care provider; give it to the TA; and you will get the attendance points for the days missed. For additional attendance information, please see http://policies.ncsu.edu/regulation/reg-02-20-03.

If you do miss a lecture or lab, we intend to tape or otherwise provide some documentation for each class and will place it on the class Moodle site.

Academic Integrity

You may work together on homework assignments, but I expect all work you submit to be your own. Any sharing of spreadsheets or lab reports among students or turning in similar lab assignments is not allowed. Violations will be given no credit for that assignment, and, depending on the severity of the plagiarism, you may be sent to the student judicial system. Exams will be closed book, but I will provide at least a page of formulas we used for reference. You may not copy from other students or notes. Check the website: http://policies.ncsu.edu/policy/pol-11-35-01 for additional information on University policies on Student Discipline. All exams and homework assignments carry the expectation of the student honor pledge: “I have neither given nor received unauthorized aid on this test or assignment.”

Disabilities

Reasonable accommodations will be made for students with verified disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation http://policies.ncsu.edu/regulation/reg-02-20-01.

Statement on Extra Expenses

You must have the computer supplies and software listed above, and a scientific or business calculator for use on exams and in class.
A course syllabus must include the information listed below. The language enclosed within quotes in sections 2.15, 2.17 and, if applicable, section 2.16, should be used without changes...

2.1. Instructor’s name, office address, telephone number, e-mail address, regularly scheduled class meeting times, and office hours for out-of-class consultation. The course prefix, number, title, credit hours, and semester should be listed. See above.

2.2. Course prerequisites, co-requisites or statement on enrollment restrictions. If none, state “none”. None.

2.3. Designation of course as fulfilling a General Education Program (GEP). If none, state “none”. GEP information in the syllabus should include the GEP category or categories (such as Natural Sciences or Humanities), and whether the course satisfies a GEP co-requisite(s). See above.

2.4. Student learning outcomes for the course. Student learning outcomes in different sections of the same course should not differ significantly. Include the learning outcomes related to GEP objectives, if applicable. GEP objectives can be found at https://oucc.dasa.ncsu.edu/general-education-program-gep/gep-category-requirements/. See objectives above.

2.5. Student expenses. See above.

2.5.1 List all required textbook(s) and other instructional material (ex: project supplies, laptop) and the cost of each. For each required textbook, include the author, title, and date or edition. See above.

2.5.2 Statement on required expenses (e.g., lane rental at the bowling alley, museum admission fee, field trip costs, liability insurance), if applicable. No added expenses.

2.6. Course overview including at least the catalog description. See above.

2.7. Course structure (such as group activities, lectures, discussion, labs, field trips, studio, etc.). Explain how the course will operate. See above.

2.8. Weekly course schedule including the following (Note in the syllabus that the course schedule is subject to change with appropriate notification to students): See above for all.

2.8.1 List of topics and approximate time allocated to each major topic.
2.8.2 Projected schedule of required readings, assignments, quizzes, and tests.
2.8.3 Required field trips and other out-of-class activities, if any.
2.8.4 Laboratory, studio, or problem session topics, if any.

2.9 Statement on transportation, if applicable.

Students must be informed whenever they must provide their own transportation to a field trip or internship site. No transportation for field visits is required.
2.10 Statement on safety and risk assumption in courses requiring a laboratory, physical activity, field trips, studios and other special activities. (Consult with your department on appropriate wording.) Safety issues must be part of the course schedule at the first opportunity.

We all are bearing some risk of illness or death by coming to class—me more than you.

If you do not want to attend class, you may opt out of the Face To Face (F2F) mode and take the course entirely online. You must inform me of that by email within the first week of class—by August 18, 2020—and we will cooperate to make sure that you get the materials and can turn in all assignments and tests as scheduled. I will do the same; if the Covid-19 outbreak in general or NC State in particular, or the room and facilities seem threatening, we all will shift to all online instruction.

2.11 Detailed explanation of how grades are determined including: See above.

2.11.1 The relative value of the various evaluation components of the course, (the portion of the grade that derives from quizzes, tests, final exam, projects, attendance, participation, etc.) and the specific expectation for each component. When attendance and/or participation are graded, the requirements for earning full value must be explained.

2.11.2 The conversion system from numerical to letter grading, if applicable. The University's regulation on grades and grade point average (NCSU REG 02.50.03); https://policies.ncsu.edu/regulation/reg-02-50-03.

2.12 Late Assignments
Instructor’s policy on late assignments, including the impact of late assignments on the grading of the assignment and the course. See above.

2.13. Attendance/Absence Policy: Refer to Attendance Regulation (NCSU REG02.20.03); https://policies.ncsu.edu/regulation/reg-02-20-03. See above.

2.13.1 The instructor’s attendance policy, including procedures for submitting excuses and for scheduling makeup work when the excuses are accepted, must be explained.
Note: Excuses for unanticipated absences must be reported to the instructor no more than one week after the return to class.

2.13.2 Instructors may use reasonable academic penalties commensurate with the importance of the work missed because of unexcused absences. Penalties associated with the number of absences in a course must be explicitly explained. See above.

2.13.3 The instructor shall determine the acceptable number of excused absences in his/her course. A reasonable number of anticipated University excused absences as defined per the University's Attendance Regulation (NCSU REG02.20.03) shall be accepted. See above.

2.14 Academic Integrity statement See above.

List the instructor’s expectations concerning academic integrity in the completion of tests, assignments, and course requirements. Include reference to the Code of Student Conduct policy (NCSU POL11.35.1); https://policies.ncsu.edu/policy/pol-11-35-01 and Pack Pledge. (See above)
2.15 Statement for students with disabilities See above and below as well.

“Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Disability Services Office at Suite 2221, Student Health Center, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.01); https://policies.ncsu.edu/regulation/reg-02-20-01.

2.16 Electronic Course Components None, except library course reserves required.

2.16.1 List electronically hosted course components, if any. Instructors should identify any components that may present privacy, copyright, or accessibility issues for the student so that these issues can be addressed during the course drop/add period. We will use Moodle to submit written assignments to, as well as submitting typed paper copies.

2.16.2 Instructors are not responsible for ensuring privacy or accessibility of electronic materials that are not required components of the course (e.g., links to supplemental information that is not part of the required reading list). However, instructors should judiciously consider privacy, copyright, and accessibility of supplemental links provided to students and warn them of any known issues or concerns in this regard. See Online Course Material Host Requirements (NCSU REG08.00.01); https://policies.ncsu.edu/regulation/reg-08-00-11.

2.16.3 One of the following statements is required.

2.16.3.1 For use in courses with online exchanges among students and the instructor, but NOT persons outside the course (e.g., wrapped):

“Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.”

Note: The in class presentations and other class work will not require any exchange of emails, and the instructor will not distribute emails among students.

2.16.3.2 For use in courses where student information may be accessible to persons beyond the instructor and students in the course (e.g., not wrapped): Note: This is not applicable.

“This course may involve electronic sharing or posting of personally identifiable student work or other information with persons not taking or administering the course. Students will be asked to sign a consent allowing disclosure of their personally identifiable work. No student is required to sign the consent as a condition of taking the course. If a student does not want to sign the consent, he or she has the right to ask the instructor for an alternative, private means of completing the coursework.”
2.16.3. (Supplemental; preferred names to be used): The student names on the class roster and student directory may be different than what you prefer to use. If you want me to use a name different that on the class roster due to personal preference, gender identity, or any other reason, please contact me if you wish to be referred to using a name and/or pronouns other than what is listed in the student directory. If I am lucky, I will remember it, but the class is large, so I cannot guarantee recollecting any individual name without your reminding me.

2.17 Students are responsible for reviewing the NC State University PRRs which pertains to their course rights and responsibilities:

- Equal Opportunity and Non-Discrimination Policy Statement [https://policies.ncsu.edu/policy/pol-04-25-05](https://policies.ncsu.edu/policy/pol-04-25-05); with additional references at [https://oied.ncsu.edu/equity/policies/](https://oied.ncsu.edu/equity/policies/)
- Code of Student Conduct [https://policies.ncsu.edu/policy/pol-11-35-01](https://policies.ncsu.edu/policy/pol-11-35-01)
- Grades and Grade Point Average [https://policies.ncsu.edu/regulation/reg-02-50-03](https://policies.ncsu.edu/regulation/reg-02-50-03)
- Credit-Only Courses [https://policies.ncsu.edu/regulation/reg-02-20-15](https://policies.ncsu.edu/regulation/reg-02-20-15)
- Audits [https://policies.ncsu.edu/regulation/reg-02-20-04](https://policies.ncsu.edu/regulation/reg-02-20-04)

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