

**AAEC 4314 Environmental Economic Analysis and Management  
Spring 2007**

**Instructor:** Kurt Stephenson

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**Office Hours:**

11:00 – 12:00 MW

2:00 – 3:00 MW

**Course Description:**

The course is designed to provide students with analytical methods and problem-solving experience for environmental/natural resource issues. The primary purpose of this course should form a bridge between knowledge acquired in a classroom setting with realistic, problem-solving situations encountered in the public and private sectors.

**Prerequisites:**

AAEC4304, ECON4014, FOR3424 *or* equivalent

Basic computer literacy in EXCEL.

**Course Objectives:**

- To develop quantitative and analytical skills for evaluating and analyzing economic aspects of environmental/natural resource issues.
- To provide students with experience in evaluating and determining appropriate economic tools and approaches needed to address specific environmental/natural resource issues.
- To facilitate and develop communication skills needed for professional and coherent presentation of economic arguments.

**Course Materials:**

There is no textbook for this course. All course materials are available through the course website ([www.learn.vt.edu](http://www.learn.vt.edu)) or provided in handouts.

**Evaluation:**

The course will consist entirely of written and spreadsheet-based exercises. When written reports are assigned, I will clearly identify the expectations of the report. Each assignment will contain the criteria I will use to evaluate your work. *Unless otherwise noted*, each student will be expected to do his or her own work on the written and quantitative exercises.

Each assignment will identify the total points for the assignment. The total points you receive on all assignments divided by the total points assigned will determine your grade.

Grades are determined on a standard 10 point scale (100-90% = A, 89-80%=B, etc). I do not grade “on a curve.”

## **Expectations:**

Students are expected to take more responsibility for their own learning than in a typical undergraduate course. You will not be asked to recite retained information on a test, but rather complete assignments and work out problems for yourself. Of course, I will provide you with background information and materials, but this is not a memorize-and-recite type of class. Many exercises will require you to develop and apply economic concepts and develop your problem solving strategies.

Assignments: You may ask me for advice, assistance, or feedback, but I expect you to first work hard to sort through the assignment yourself.

This class is designed to be more like a work-related situation than a college course. The class is task-based and performance-based. As with any job, you will be given a certain amount of time (a reasonable amount of time) to complete the task. You will be evaluated on what you produce – the timeliness and quality of your work output.

It is your responsibility to budget your time appropriately. One of the biggest challenges for students in this course is effectively budgeting your time. If you wait until the night before to start an assignment, your work will suffer. Assignments typically take more time than you initially expect. Meeting deadlines are important. *A letter grade will be deducted for every day an assignment is turned in late.*

### ***Tentative Course Outline (subject to change depending on schedule and class interest)***

#### Review of Fundamental Economic Tools

- Real and Nominal Prices (Exercise)
- Discounting (Exercise)

#### Program Evaluation: Property Rights and Market Development

- Markets for Environmental Services
- Virginia's Nutrient Trading Program

#### Project Evaluation: Benefits and Costs

- Project Evaluation Process
- Benefits and Costs
  - Estimating Opportunity Costs (Optional exercise, time permitting)
  - Overview of benefit estimation techniques for environmental services
- FERC hydropower relicensing case study (multiple Exercises)

#### Statistical Analysis in Environmental/Natural Resource Issues

- Review of elasticity
- Multiple regression, demand estimation, and elasticity
- Estimating the demand for water (Exercise)