**Nicholas School of the Environment**

**ENVIRON 972.01 DEL Making Environmental Decisions**

**Instructor**

Elizabeth A. Albright, PhD

**Course synopsis**

This course in environmental decision analysis teaches structured ways to make decisions that are difficult because (1) you must make trade-offs among conflicting objectives and/or objectives when evaluating alternative courses of action (e.g., different policy instruments for reducing greenhouse gases), (2) you must decide on a course of action when the outcomes of alternative actions are uncertain due to factors beyond your control, or (3) both. The mathematical demands of the course will be moderate, with emphasis placed on probability and probabilistic thinking. Most important, the course will help develop rigorously structured thinking that will exercise your brain in new and creative ways.

**Course objectives**

The purpose of this course is to improve your ability to analyze environmental decisions that are challenging because of uncertain outcomes or multiple, conflicting objectives or both.

This course will help you:

* understand how individuals and groups make decisions and how biases in judgment may occur
* organize the goals and objectives you want to pursue
* define and operationalize ways to measure progress toward achieving objectives
* make trade-offs among conflicting objectives
* include qualitative and subjective factors important to a decision
* capture expert opinion to help inform decisions
* handle decisions that are difficult because of limited data and uncertain outcomes
* assess the value of new information in informing decision making

**Format and course requirements**

The course consists of three main modules:  (1) an introduction to behavior decision theory (heuristics and biases of individual decision making processes), (2) decision making under certainty; and (3) decisions under uncertainty. In each module, material will be presented through a combination of readings from the texts and journal articles, and short online videos and discussed in weekly web conferences.  You will (1) apply the tools in completing two computational exercises based on real-world and mock decision problems, (2) participate in class discussions, online fora and group problem-solving activities, (3) offer guidance to a client (mock or real) in a final project, and (4) advise a decision maker in two memos.

 **Texts**

Clemen, Robert T., Making Hard Decisions, 3rd Edition, Cengage Publishers.

And, additional selections from books and journal articles through Duke Library.

**Software**

Excel (available from Duke OIT)

DecisionTools (included with text purchase, download from Cengage page)