Introduction: I will introduce economics from a practical, problem-solving point of view and show how economics can be used to analyze and solve environmental problems. Broadly speaking, economics is the science of how scarce resources are allocated: how people and firms behave, the consequences for resource use and conservation, and how society might want to make decisions about scarce resources. When viewed in this way, it is clear that economics might provide a useful framework within which to analyze environmental problems and approaches to solve them. Because many environmental problems are caused by economic activity (carbon emissions, overharvesting renewable resources, toxic releases as a by-product of industrial production, urbanization), we will examine different approaches to influencing human behavior and therefore the externalities associated with it.

To do so in a meaningful way will require a lot of work. The pace will be quick and the out-of-class workload will be heavy. (Expect an average of 8-10 hours of work per week outside of class.) The purpose of the course is to give you a solid foundation in those aspects of economics and quantitative policy analysis that are important to environmental and natural resource management and policy. The course will also serve as the foundation in economics for management, economics and policy electives in the Bren School.

There will be readings prior to most class meetings and homework assignments (projects) due nearly every week. You must complete 4 of the projects – you get to choose which ones. The course website will contain all details for these assignments.

Grading. The course requirements are a midterm (20%), final exam (20%), homework/mini-projects (45%) and class/section participation (15%). The midterm will be in class and the final will be take-home, due 5:00 pm March 18. The midterm will be closed book though you may bring one single sheet of paper (8.5”x11”) with notes to the exam. Class attendance is
mandatory; if you have to miss class, you must obtain approval prior to the start of class. If you miss class without prior approval, you will receive a 0 as your class participation score.

Lectures. Lecture slides will be available prior to the lecture on the class webpage.

Readings. Readings are drawn from multiple sources. The required textbook is:
Other readings (such as newspaper or journal articles) will be made available on the webpage.

Several optional texts will be drawn upon at certain points in the course; students may wish to acquire some or all of these texts. These suggested textbooks are:
- A book that covers much of the material in the course at an elementary level is Goodstein: *Economics and the Environment* (any edition).

Assignments. All of the homework assignments are in the form of mini-projects – approximately one per week (there will be at least 7 to choose from over the quarter). For most of these the deliverable is a one-page memo (typed, single spaced, 12 point) to your policy-maker boss and an appendix with details. Upload a pdf of your entire assignment to Gauchospace (TA can answer questions on procedures). These mini-projects are a very important part of the course (as reflected in their contribution to your final grade). I expect to see high quality, polished, professional work. Writing quality counts! Assignments are due at the beginning of class unless otherwise noted and should be handed in to the TA. Late work will not be graded (unless an exception has been granted prior to the due date). The TA will grade the assignments and return them to you promptly (within a week in most cases). You may work in a team of two on your assignments but you cannot keep the same partner for more than one assignment. Although approximately one of these assignments is made every week, you need only complete four of them. If you complete more than four, your top four grades will be counted. Help from the TA or the instructor prior to the deadline will be limited to answering pointed questions. Do not expect the TA to lead you through the process of doing the project. Figuring out how to answer the question posed is an important part of the course.

Presentations. On days when assignments are due, I will randomly call on one person (among those who chose to complete that week’s assignment). That person and his/her partner will come to the front of the class and give a 2 minute oral summary of their project and its findings. Therefore, any time you complete an assignment, you need to be ready to give a sharp, crisp presentation (no media can be used).

Honor Code and Joint Work. Collaboration with your homework/project partner (who changes with every assignment) is obviously encouraged. Homework/project collaboration beyond this
is not appropriate and in fact constitutes a violation of the Bren Honor Code. I know there is a temptation when solving a homework problem to shout “Eureka” and share your insights with your fellow students. However, this defeats the purpose of the homework – to find a path to a solution on your own. Furthermore, with grading on a curve, sharing of answers effectively reduces the grades of those doing the sharing. So do your homework on your own and keep it to yourself! It goes without saying that the exams are your own individual work and you are on your honor to execute your exam individually and neither give nor receive aid. Plagiarism will be treated very seriously and will involve reporting to the UCSB graduate division.

**Prerequisites.** You are assumed to be fluent in multivariate calculus and to have completed a sequence in intermediate microeconomics at the level of Varian, *Intermediate Microeconomics*. At UCSB, this would be Econ 100AB or ESM 251. If you do not have the prerequisites, you should defer taking the course until prerequisites have been satisfied. You are also expected to be conversant with Excel, particularly graphing and solver. If not, please take the time to learn it.

**Course Outline**  Loosely speaking, the first half of the course involves introducing new concepts, which are broadly applicable across a wide range of environmental issues. The second half of the course involves more focused tools and approaches for addressing specific classes of environmental problems. The content of each lecture is provided on the webpage.