# Syllabus
# NATURAL RESOURCE AND ENVIRONMENTAL ECONOMICS

Instructor: Kenneth (Ken) Durham
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Office Hours: TBD
Class Time: TT 11:00a – 12:15p

Required Text: NONE – all materials will be posted to Blackboard or otherwise available. Sourced from publicly available texts and podcasts, most will be supplied by instructor, some researched & selected by students. PowerPoint presentations will be kept to a minimum. ***Students are expected to build their own reference library for use during quizzes and exams (when permitted).***

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## Course Description

The detrimental impacts of human activity on the environment have been gaining widespread attention in the popular press ever since the beginning of the environmental movement of the late 1960's. Environmental activism during that time led to a slew of environmental protection laws such as Clean Air and Clean Water Acts in the USA and similar statutes later in the EU & other developed economies.

These trends continue at an increased pace. Even authoritarian countries like China have faced strong citizen backlash from natural resource exploitation justified using traditional natural resource economics, the go-to model for finance and investment.

In response to this movement, an emerging field of economics – *environmental economics* – has emerged to claim a seat at the table next to *natural resource economics.* The growing tension between these two economic models has vast, real-world consequences. Informed citizens and future leaders must understand the issues and challenges behind the sensational headlines if they are to take an active role in the discussion. Moreover, they will need tools to apply to *any* contentious, competing resource allocation debate that emerges in the future.

That is the goal of this course.

## Learning Objectives

1. Summarize the history of natural resource and environmental economics.
2. Describe the strengths and weaknesses of both natural resource economics and environmental economics, where they are best applied, and how they complement the other.
3. Examine each side of any current natural resource debate, vigorously defend either side using arguments provided by natural resource economics and environmental economics equally.
4. Defend your preferred position, preferably by pointing out inconsistencies, misused science and logically fallacies presented by the opposing position.

## Method

This *survey* course will examine in detail four areas of debate: genetically-modified foods, global warming / climate change, oil and gas production and population growth.

Although topical, these areas of debate have been around a long time. For instance, global climate change has been making the rounds of the global economic policy circuit for at least 30 years. We will continue to grapple with it for several more generations if history and the current state are any indication. Because of this, the goal of the class is to give students the analytical and cognitive tools that help uncover the root of the tensions between natural resource and environmental economics as applied to any limited-resource debate.

Since this course will be delving into topics that generate heated debate, it will also examine recent research into cognitive limitations, rational choice, and group biases that can unwittingly or intentionally influence decision- and policy-making.

As there are no economic course prerequisites, economic concepts will be introduced when germane to the topic at hand. For instance, the pros and cons of cap-and-trade will be introduced as it applies to global climate change rather than on its own as a policy tool. Any math introduced during the course should be accessible by those capable of high-school level mathematics.

The course also includes a multi-player renewable resource management simulation in which students will play the role of business owners seeking to maximize their net worth as they compete against other players while dealing with changing costs of operations, required investments and limited natural resource stocks that can be stressed, or even collapse, during exploitation.

## Program Learning Outcomes for the B.S. in Natural Resource Management

The graduating student will demonstrate that he/she is able to:

1. Identify species of wildland plants and wildlife common to the western United States and describe their natural history.
2. Demonstrate knowledge of the elements of an ecosystem.
3. Communicate about natural resources and conservation both verbally and in writing.
4. Conduct range and wildlife inventories in a team setting.
5. Apply knowledge about elements of an ecosystem into an appropriate conservation management plan.

## Achievement & Grading

*Success in this course depends predominately on class participation. Your participation will be enhanced by your self-directed research*. Classes will tend to be Socratic rather than lecture. If you don't read and absorb the assignment before class, you won't be prepared when the instructor questions you directly about your interpretation and conclusions about the readings.

Likewise, tests and quizzes will draw heavily from the class discussion as well as the readings. Therefore, if you cannot make class make sure you have prearranged for your classmates to debrief you. *The instructor will not be able to re-create the substance of the class since it will be a dynamic give-and-take that may introduce topics not in the syllabus*.

Your final grade will be based on the following

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| Class Participation | 30 points (pivots on having done the readings) |
| Pop Quizzes | 0 points (See Class Participation) |
| Mid-term | 35 points (Oral) |
| Simulation | 5 points to winner(s) – 2 sigma out |
| Final | 35 points (Oral) |

## **Class Topics** (not necessarily in discussion order)

Fundamental Concepts and Definitions
History of Natural Resource & Environmental Economics
Science's Role in Natural Resource Policy

Genetically-modified Food
Global Warming / Climate Change
Oil and Gas Production
Population Growth

Natural Resource Exploitation Simulation (on-going throughout semester)
Cognitive Limitations & Logical Fallacies
Changing Perceptions and Group Dynamics

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**Document Change Log**
Ver 100207a Original
Ver 190207a & xb Converted to Draft for Fall 2019
Ver 190811 changed grading scheme
Ver 190820a changed email address, edits