ECON 3535: Course Outline

		Classes			
Week	Dates	Monday	Wednesday	Friday	Assignments
1	1/10 - 1/14	Syllabus + Intro	Topic 1 Lecture 1	Lecture 2	
2	1/17 - 1/21	No Class *MLK Jr. Day*	Lecture 3	Lecture 4	
3	1/24 - 1/28	Lecture 5	Lecture 6	Lecture 7	
4	1/31 - 2/4	Lecture 8		Lecture 9	
5	2/7 - 2/11	Lecture 10	Lecture 11	Lecture 12	
6	2/14 - 2/18	Review	*Midterm*	Topic 2 Lecture 13	
7	2/21 - 2/25	Lecture 14	Lecture 15	Lecture 16	
8	2/28 - 3/4	Lecture 17	Lecture 18	Lecture 19	
9	3/7 - 3/11	Lecture 20	Lecture 21	Topic 3 Lecture 22	
10	3/14 - 3/18	Lecture 23	Lecture 24	Lecture 25	
11	3/21 - 3/25	No Class *Spring Break*	No Class *Spring Break*	No Class *Spring Break*	
12	3/28 - 4/1	Lecture 26	Review	*Midterm*	
13	4/4 - 4/8	Topic 4 Lecture 27	Lecture 28	Lecture 29	
14	4/11 - 4/15	Lecture 30	Lecture 31	Lecture 32	Writing Assignment
15	4/18 - 4/22	Lecture 33	Lecture 34	Lecture 35	
16	4/25 - 4/27	Lecture 36			

Unit 1: Economic Fundamentals

LECTURE 1

- Intro to Class
- Prisoner's Dilemma Review

Readings for this lecture

- `Robert Frank's The Darwin Economy`

LECTURE 2

- Economic tools for analyzing natural resource problems
- Discounting and Present Value

Readings for this lecture

- "Static Efficiency", page 21
- "Relating Optimality to Efficiency", page 48
- "Comparing Benefits and Costs Across Time", page 49
- "Choosing the Discount Rate", page 60

LECTURE 3

- Resource taxonomy
- Recyclable resources
- Two-period model with constant MC and fixed supply

Readings for this lecture

- "Resource Taxonomy", page 124
- "A Two-Period Model", page 108
- `Michael Greenstone's Managing Climate Risk` (`online version`).

LECTURE 4

- Mineral two-period model
- Marginal user cost

Readings for this lecture

- "A Two-Period Model", page 108

LECTURE 5

- Two-period model wrap up
- Markets

Readings for this lecture

- "Efficient Intertemporal Allocations", page 127

LECTURE 6

- Efficiency
- Welfare theorem
- Property rights

Readings for this lecture

- "Externalities as a Source of Market Failure", page 25
- Example 2.2 Shrimp Farming Externalities in Thailand, page 27

LECTURE 7

- Coase theorem
- Bargaining

Readings for this lecture

- "Externalities as a Source of Market Failure", page 25
- Example 2.2 Shrimp Farming Externalities in Thailand, page 27
- "Coase Theorem", page 36

LECTURE 8

- Policy tools
- Local pollutants

Readings for this lecture

- `Ronald Coase and the Misuse of Economics` (`online version`).
- "The Command-and-Control Policy Framework", page 358

LECTURE 9

- Policy comparisons
- Numerical example

Readings for this lecture

- "Command and control vs market-based policies", page 358

LECTURE 10

- Policies Continued
- Numerical Exercise

LECTURE 11

- Taxes and Deadweight Loss
- Corrective Taxes and Subsidies

Videos

- `Taxes and Deadweight Loss`
- `Pigouvian Taxes`

LECTURE 12

- Growth and Development
- Trade

Readings for this lecture

- "Trade and the Environment", page 480
- Example 20.3 The Natural Resource Curse
- `Carbon Taxes Won't Do Enough to Slow Global Warming` (`online version`).

Math Assignment due 2/11 at 11:59pm

Unit 2: Energy Resources

LECTURE 13

- Energy Overview

LECTURE 14

- Electricity Industry

Readings for this lecture

- "Will we ever stop using fossil fuels?", pages 117-120
- "Electricity" and Examples 7.5 and 7.6, pages 158

LECTURE 15

- Coal
- Carbon capture and storage
- Nuclear

Readings for this lecture

LECTURE 16

- Natural Gas

Readings for this lecture

- Renewable energy - the global transition, explained in 12 charts (online version)

LECTURE 17

- Renewables overview
- Wind

Readings for this lecture

- Renewables to Account for a Third of Global Power Generation in 2022 (online version).
- Renewables Are Expanding at an Astounding Pace. But It's Still Not Enough to Meet Climate Goals (online version).

LECTURE 18

- Solar

Readings for this lecture

- Interview with NREL Researcher: `Solar power's greatest challenge was discovered 10 years ago. It looks like a duck.` (`online version`).

LECTURE 19

- Energy storage
- Demand response

Readings for this lecture

- `Energy Storage`
- `Demand Response`

LECTURE 20

- Hydroelectric
- Biofuels

Videos

- `The Future of Energy Storage Beyond Lithium Ion`

LECTURE 21

- Transportation

Readings for this lecture

- "CAFE Standards" and "Alternative Fuels and Vehicles", page 380 and 385

Unit 3: Pollution, Climate Change, and Policy

LECTURE 22

- Climate change
- Science overview
- Policy overview

Readings for this lecture

- The Uninhabitable Earth (online version).

LECTURE 23

- Policies for local air pollution
- US Acid Rain Program
- Programs in France, Sweden, Japan

Readings for this lecture

- NYTimes' The Daily: Joe Biden's Climate Plan

LECTURE 24

- International air pollution policies

Videos

- A Brief History of Environmental Justice
- Example: Cancer Alley Why This Town is Dying From Cancer

LECTURE 25

- Paris Agreement
- Country-specific climate change policies

Readings for this lecture

- Most countries aren't hitting 2030 climate goals, and everyone will pay the price (online version).
- China's Pledge to Be Carbon Neutral by 2060 - What It Means (online version).
- John Kerry, Biden's Climate Czar, Talks About Saving the Planet (online version).

LECTURE 26

- Environmental taxes
- Double dividend hypothesis

Readings for this lecture

- `The Trump Administration Is Reversing More Than 100 Environmental Rules. Here's the Full List.` (`online version`).
- TBD: about Biden's Climate Efforts

Unit 4: Valuation Methods and Non-Energy Resources

LECTURE 27

- Valuation overview
- Cost/benefit analysis
- Efficiency

Readings for this lecture

- Chapter 3

LECTURE 28

- Different types of value
- Stated preference methods and biases

Readings for this lecture

- Chapter 4

LECTURE 29

- Revealed preference methods

Readings for this lecture

- Chapter 4

LECTURE 30

- Ecosystem services

Readings for this lecture

- Chapter 4

LECTURE 31

- Bioeconomic systems
- Static fisheries

Readings for this lecture

- Video: `The economic, social and icon value of the Great Barrier Reef`
- `What Is The Real Value Of The Great Barrier Reef?` (`online version`)
- `What bees can teach us about the real value of protecting nature` (`online version`).

`LECTURE 32`

- Dynamic fisheries
- Open access fisheries

Readings for this lecture

- First half of chapter 12 (Until you get to the dynamic fisheries model)

`LECTURE 33`

- Forestry

Readings for this lecture

- Chapter 11

`Writing Assignment due 4/15 at 11:59pm`

`LECTURE 34`

- Land use
- Food insecurity

Readings for this lecture

- Chapter 10

`LECTURE 35`

- Water

Readings for this lecture

- Chapter 9

`LECTURE 36`

- Waste and Recycling

Readings for this lecture

- `Is Recycling Worth It?` (`online version`).