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	No Class *Spring Break*	No Class *Spring Break*	No Class *Spring Break*	
8	2/28 - 3/4	Lecture 14	Lecture 15	Lecture 16	
9	3/7 - 3/11	Lecture 17	Lecture 18	Lecture 19	
10	3/14 - 3/18	Lecture 20	Lecture 21	Topic 3 Lecture 22	
11	3/21 - 3/25	Lecture 23	Lecture 24	Lecture 25	
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			
5	2/14 - 2/18				Math Assignment
Final	05/04 *1:30-4pm*				Final Exam

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).