YONSEI UNIVERSITY

Strategies for Sustainable Energy

Lecture 1. Introduction

ENG2110-01
College of Engineering
Yonsei University
Spring, 2011

Prof. David Keffer

Course Information

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Class Meeting Location and Times

- First Engineering Building Room A320
- Thursday 4:00 PM – 6:50 PM

Course Website

- http://utkstair.org/clausius/docs/sustainableenergy/index.html

Course Textbook

- Sustainable Energy without the Hot Air by David J.C. MacKay
- full text available free online at
- http://www.withouthotair.com/

Instructor Information

- Office YERC 174B
- Office telephone: 2123-5748
- email: dkeffer@utk.edu

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Objective

The previous portions of this course have focused on climate change and have motivated the need for sustainable energy sources.

The objective of this portion of the course is to educate the student with regards to strategies for identifying and developing a coherent plan for sustainable energy on a national scale.

The course is organized into four parts:

- Background and Motivation
- Sources of Energy Consumption
- Sources of Sustainable Energy Production
- Strategies for Sustainable Energy

Course Schedule

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#	Date	Lecture Topic	Reading Assignment	Homework Assignment
1	04/07/11	Organization & Introduction	Chapters 1 & 2	Assign HW 1
2	04/14/11	Motivation & the Balance Sheet	Chapter 3 & 5	
-	04/21/11	Midterm Exam Week – No Class		
3	04/28/11	Consumption: Cars & Planes	Chapters 7, 9, 11, 13	Collect HW 1 Assign HW 2
4	05/05/11	Consumption: Heating, Cooling, Light, Gadgets, Food & Farming	Chapters 4, 6	
5	05/12/11	Production: Wind & Solar	Chapters 8, 10, 12, 14, 16,	Collect HW 2 Assign HW 3
6	05/19/11	Production: Hydroelectricity & Offshore Wind, Wave, Tide & Geothermal	Chapters 19, 20	
7	05/26/11	Strategies: General Plans	Chapter 25, 26, 27	Collect HW 3 Assign HW 4
8	06/09/10	Strategies: Specific Plans I	Chapters 28, 29	
9	06/16/10	Strategies: Specific Plans II	-	Collect HW 4
10	06/23/10	Final Exam	-	

Course Grades

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Overall Course Grades

- The total course grade is an average of the three grades for each instructor.

Course Grade for this Portion

- Attendance: 20%
- Homework Assignments: 40%
- Final Exam: 40%

Homework Assignments

- Motivation due: Thursday, Apr. 28, 2011
- Consumption due: Thursday, May 12, 2011
- Production due: Thursday, May 26, 2011
- Strategies due: Thursday, June 16, 2011

Final Examination

- Covers only this final two-thirds of the class
- time to be determined

Instructor: Prof. Keffer

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chemical engineer, molecular-level process and materials modeler

Research Seminar

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Multiscale Modeling of Structure and Transport in Proton Exchange Membrane Fuel Cells

David J. Keffer

Yonsei University
Chemistry Department
Date: April 7, 2011
Time: 5:00 pm
Location: Science Hall B102