

**FLORIDA INTERNATIONAL UNIVERSITY**  
**Department of Earth and Environment**

**EVR 3010 Energy Flow**  
**SPRING 2011**

**Course Objective**

The course is designed to acquaint students with the principles of energy flow in the environment and will focus on introduction to the physical science principles and concepts needed to understand energy issues. It will also examine energy use and efficiency, current energy sources, environmental impacts of energy use, climate change and energy, and future renewable energy alternatives.

Prerequisites: EVR 3011 (or another general environmental science course) and College Algebra.

Location: ECS 145

Time: MWF 2:00 - 2:50

Instructor: Assefa M. Melesse

Office: ECS 339

Tel. (305) 348-6518

E-mail: melessea@fiu.edu

Office Hours: MW 3:30-5:00PM

Required Text: Energy and Environment, 2<sup>nd</sup> Edition/ Ristinen

Additional references: Energy and the Environment, Toosi

Energy: Its use and the Environment, 4<sup>th</sup> edition, Hinrichs

**Grading:**

Attendance	5%
3 Exams	50 %
3 Home works	30 %
Current topics on energy and the environment	15%

A	90-100
B+	88-89
B	80-87
C+	78-79
C	70-77
D+	68-69
D	60-67
F	<60

**NOTE:**

- Students are required to attend classes regularly.
- Late homework submission will be subjected to penalty.
- Students are required to pick an energy and environment topic in the news or current discussion in the scientific community and present to class. This will be an oral presentation or a poster (5-7 minutes).

## Academic Misconduct

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.

### COURSE OUTLINE

LEC	TOPICS	<u>RISTINEN (HINRICHS)</u>
1	Course overview Introduction: Energy and environment, trends in energy usage and availability	<u>CH 1.1 &amp; 1.2, 1.6</u> (CH.1)
2	Energy Fundamentals: Energy basics	<u>CH 1.3-1.5</u> (CH. 2)
<b>JANUARY 17: MLK HOLIDAY</b>		
3	Work-Energy-Power	<u>CH 1.3-1.5</u> (CH. 2)
4	Conservation and exchange of energy	<u>CH 1.7 &amp; 1.8</u> (CH. 3) <b>HW1</b>
5	Global energy outlook: Long-term supply and demand	<a href="http://www.doe.gov/eia">www.doe.gov/eia</a> <b>HW 1 Due</b>
6	Electric Energy and Power Hw 1 discussion	(CH 10 & 11)
7	Exam 1 (Lecture 1-6)	
8	Fossil Fuels	<u>CH 2</u> (CH 7)
9	Fossil fuels	<u>CH 2</u> (CH 7)
10	Exam 1 discussion Current issues presentation I	
11	Energy Efficiency and conservation	<u>CH 7</u> (CH 5)
12	Thermodynamics, heat engines, heat pumps and refrigerator	<u>CH 3</u> (CH 4) <b>HW 2</b>
13	Air pollution, Automobile & Environment	<u>CH 9</u> (CH 8)
14	Acid rain	<u>CH 9.10</u> (CH 9)
15	Ozone depletion and greenhouse effect	<u>CH 10</u> (CH 9) <b>HW 2 Due</b>
16	Global Warming, Mitigation & Policy Hw2 discussion	<u>CH 10</u> (CH 9)

17	Exam 2 (Lecture 8-16)
18	Nuclear Energy and Nuclear Power <u>CH 6</u> (CH 13, CH14, CH 16)
	<b>SPRING BREAK MARCH 15-20</b>
19	Exam 2 discussion Current issue Presentation II
20	Hydroelectric, Geothermal Energy <u>CH 5.2, 5.8</u> (CH 12, CH 18) <b>HW 3</b>
21	Solar Energy, Solar Electricity <u>CH 4</u> (CH 6, CH 12) <u>CH 4</u> (CH 12)
22	Wind Energy, Hydrogen <u>CH 5.3</u> <b>HW 3 due</b>
23	Biomass Energy <u>CH 5.7</u> (CH 17) HW3 discussion
24	Current issue Presentation III
25	Current issue Presentation IV
26	Current issue Presentation V
27	Exam 3 (Lec. 18-23)