

ME 568
Alternative Energy and Fuel Resources
FALL 2013

Instructor: Dr. Tomasz Wiltowski

Office: E23

Phone: 453-7000

Email: tomek@siu.edu

Time: Tuesdays and Thursdays, 3.35 pm – 4.50 pm

Location: A210

Office hours: T, Th 2:30 pm – 3:30 pm

Textbook: The course will not require any textbook. All the lectures and course information will be published on the webpage.

Course description:

The course will covers alternatives for energy resources and the impact of the human growth on the energy usage and its environmental consequences. The course describes the fossil fuel era, renewable energy resources and the hydrogen fuel era. The fundamentals of each of these fuel types, their conversion to unstable energy and the potential of each of these fuels for the future is discussed.

Interesting Information Resources on the Internet:

One of the goals of this course is to provide an introduction to the emerging information technologies apply to Energy and Fuels. At some point you may wish to browse World Wide Web Virtual Library. There are also lots of other fun things to see and do on the Internet. So take a break every so often from the serious stuff and explore the rest of the Wide World Web and the Internet.

Grading:

Mid term Exam 40%

Presentation 60%

Daily Schedule:

The attached schedule gives the anticipated dates of lecture topics and the dates on which examinations are to be given. This schedule will be revised as necessary during the semester. Some topics may take more or less lecture time than indicated here and the problems numbers will be adjusted to be in sync with the lecture topics. However, the dates for examinations are fixed and the topics covered in each exam will be adjusted to those covered by lectures at the time of the examination.

Emergency Procedures

Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on BERT's website at www.bert.siu.edu, Department of Safety's website www.pds.siu.edu (disaster drop down) and in Emergency Response Guideline pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.

SCHEDULE

| | |
|---------------------|---|
| August 20 | Introduction |
| August 22 | Introduction to Energy |
| August 27 | Nonrenewable Energy Resources: Coal & Natural Gas |
| August 29 | Nonrenewable Energy Resources: Crude Oil |
| September 3 | Environmental Impact of Energy Consumption: The Saga of the Greenhouse Effect |
| September 5 | Nuclear Energy |
| September 10 | Renewable Energy Resources: Solar Energy |

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| September 12 | Renewable Energy Resources: Geothermal Energy |
| September 17 | Renewable Energy Resources: Hydropower Energy |
| September 19 | Renewable Energy Resources: Biomass Energy |
| September 24 | Renewable Energy Resources: Wind Energy |
| September 26 | Renewable Energy Resources: Wind Energy |
| October 1 | Renewable Energy Resources: Wave Energy |
| October 3 | Mid-term Exam |
| October 8 | Renewable Energy Resources: Tidal Energy |
| October 10 | Hydrogen: Production |
| October 12 -15 | FALL BREAK |
| October 17 | Hydrogen: Storage |
| October 22 | Gasification of Coal, student's presentation |
| October 24 | Gasification of Coal, student's presentation |
| October 29 | Liquid Fuels from Coal, student's presentation |
| October 31 | Liquid Fuels from Coal: Fischer-Tropsch, student's Presentation |
| November 5 | student's presentation |
| November 7 | Shale Oil from Oil Shale, student's presentation |
| November 12 | Renewable in Transportation, student's presentation |
| November 14 | Shale Oil from Oil Shale – student's presentation |
| November 19 | Fuel Cells, student's presentation |
| November 21 | Fuel Cells, student's presentation |
| November 26 | Fuel Cells, student's presentation |
| November 27- Dec 1 | Thanksgiving Break |
| December 3 | Future Energy Recourses |

December 5, course summary, where we are going and what is the future of energy

December 9-13 **FINAL WEEK**

"We emphasize student achievement and success because achievement and success are essential if we are to shape future leaders and transform lives"

IMPORTANT DATES

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| Last day to add a class (without instructor permission) | 8/30/2013 |
| Last day to withdraw completely and receive a 100% refund | 9/01/2013 |
| Last day to drop a course using SahukiNet | 10/27/2013 |
| Last day to file diploma application (for name to appear in Fall Commencement program) | 11/01/2013 |
| Final examinations | 12/9 – 12/13/2013 |

Note: For outreach, internet, and short course drop/add dates, visit

Registrar's Academic webpage <http://registrar.siu.edu/>

FALL SEMESTER HOLIDAYS

Labor Day 09/02/2013

Fall Break 10/12—10/15/2013

Thanksgiving Break 11/27—12/1/2013

WITHDRAWAL POLICY ~ Undergraduate only

Students who officially register for a session may not withdraw merely by the stopping of attendance. An official withdrawal form needs to be initiated by the student and processed by the University. For the proper procedures to follow when dropping courses and when dropping from the University, please visit <http://registrar.siu.edu/pdf/ugradcatalog1314.pdf>

INCOMPLETE POLICY~ Undergraduate only

An INC is assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. An INC must be changed to a completed grade within one semester following the term in which the course was taken, or graduation, whichever occurs first. Should the student fail to complete the course within the time period designated, that is, by no later than the end of the semester following the term in which the course was taken, or graduation, whichever occurs first, the incomplete will be converted to a grade of F and the grade will be computed in the student's grade point average. For More information please visit

<http://registrar.siu.edu/grades/incomplete.html>

REPEAT POLICY

An undergraduate student may, for the purpose of raising a grade, enroll in a course for credit no more than two times (two total enrollments) unless otherwise noted in the course description. For students receiving a letter grade of A,B,C,D, or F, the course repetition must occur at Southern Illinois University Carbondale. Only the most recent (last) grade will be calculated in the overall GPA and count toward hours earned. See full policy at

<http://registrar.siu.edu/pdf/ugradcatalog1314.pdf>

GRADUATE POLICIES

Graduate policies often vary from Undergraduate policies. To view the applicable policies for graduate students, please visit

<http://gradschool.siu.edu/about-us/grad-catalog/index.html>

DISABILITY POLICY

Disability Support Services provides the required academic and programmatic support services to students with permanent and temporary disabilities. DSS provides centralized coordination and referral services. To utilize DSS services, students must come to the disability office to open cases. The process involves interviews, reviews of student-supplied documentation, and completing Disability Accommodation Agreements. <http://www.siu.edu/dss>

STUDENT CONDUCT CODE

http://policies.siu.edu/other_policies/chapter3/conduct.html

SALUKI CARES

The purpose of Sahuki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. For Information on Sahuki Cares: (618) 453-5714, or siucares@siu.edu, <http://sahukicare.siu.edu/index.html>

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INCLUSIVE EXCELLENCE

SIU contains people from all walks of life, from many different cultures and sub-cultures, and representing all strata of society, nationalities, ethnicities, lifestyles, and affiliations. Learning from and working with people who differ is an important part of education, as well as an essential preparation for any career.

MORRIS LIBRARY HOURS

<http://www.lib.siu.edu/about>

LEARNING AND SUPPORT SERVICES

Help is within reach. Learning support services offers free tutoring on campus and math labs. To find more information please visit Center for Learning and Support Services website for:

Tutoring : <http://tutoring.siu.edu/>

Math Labs http://tutoring.siu.edu/math_tutoring/index.html

WRITING CENTER

The Writing Center offers free tutoring services to all SIU students and faculty. To find a Center or Schedule an appointment please visit <http://write.siu.edu/>

AFFIRMATIVE ACTION & EQUAL OPPORTUNITY

Our office's main focus is to ensure that the university complies with federal and state equity policies and handles reporting and Investigating of discrimination cases. For more information visit <http://diversity.siu.edu/#>

Additional Resources Available:

SALUKINET: <https://salukinet.siu.edu/cp/home/displaylojin>

ADVISEMENT: <http://advisement.siu.edu/>

PROVOST & VICE CHANCELLOR: <http://bvcaa.siu.edu/>

