From: Erik Fowler,

RE: **ENV 497 Independent Studies Proposal for Sprint 2011 Semester**

Date: Nov. 7, 2010

**Overview:**

* **Current Energy & Environmental Policy Issues with Research Paper**
* Credits requested: 2, Graded
* Textbook on energy to build on foundational energy topics listed below
* Journal articles to provide depth to specific topics
* A research paper to focus in-depth/ critical thinking on one specific topic and its relevance to current energy policy. For example, “Why does wind dominate over solar in some state portfolio standards, such as Texas?” Paper to be decided by 6th week after consultation with faculty, due final week of term, using only scholarly research journals (at least 3) relative to the topic.

**FOUNDATIONAL Topics (from textbook):**

1. Energy Basics
   1. Energy Sources and Consumption
   2. Energy Conservation & Efficiency
   3. Energy Policy in the US
2. Fossil Fuels
   1. Crude Oil & Natural Gas
   2. Coal
   3. Oil Shale & Tar Sands
   4. Peak Oil
   5. Arctic National Wildlife Refuge
3. Alternative Energy
   1. Solar Energy
   2. Water Power
   3. Ocean Energy
   4. Wind Power
   5. Biofuels
   6. Geothermal
4. Nuclear Energy
   1. Fission vs. fusion reactors
   2. Environmental concerns
   3. Power plant accident history
   4. Radioactive waste management
   5. The future of nuclear energy

**Proposed Books for FOUNDATIONAL Topics:**

Ristinen, Robert A. & Jack P. Kraushaar. 2006. *Energy and the Environment, 2nd Edition.* New Jersey: John Wiley & Sons, Inc.

Botkin, Daniel B. & Edward A Keller. *Environmental Science: Earth as a Living Planet.* River Street, NJ: John Wiley & Sons, Inc., 2009. {Chapters 17 – 20 on Energy}

**Proposed Journal Articles for DEPTH OF SPECIFIC TOPICS (faculty to review/propose others)**

*Fossil Fuels:*

* Maugeri, L. 2004. Oil: Never Cry Wolf when the petroleum age is far from over. *Science.* 304.
* *Issues for Debate in Environmental Management*. Selections from CQ Researcher. 2010. “Coal’s Comeback: Can Coal Become a Clean Energy Source?” CA: Sage Publications. 227-249.
* Layzer, Judith A. 2006*. The Environmental Case: Translating Values into Policy*. “Oil Versus Wilderness in the Arctic National Wildlife Refuge.” Washington DC: CQ Press. 130-158.

*Solar:*

* Biello, David. August 13, 2010. “Plug and Play” Solar Panel Kits Offer Homeowners Affordable Alternative Energy Source. *Scientific American.* [www.scientificamerican.com](http://www.scientificamerican.com)

*Wind:*

* Biello, David. October 20, 2010. Air Power: The Making of a Modern Wind Turbine and Wind Farm [Slide Show]. *Scientific American.* [www.scientificmerican.com](http://www.scientificmerican.com)

*Biofuels:*

* *Issues for Debate in Environmental Management*. Selections from CQ Researcher. 2010. “Biofuels Boom: Can Ethanol Satisfy America’s Thirst for Foreign Oil?” CA: Sage Publications. 381-401.

*Energy Policy:*

* Jacobson Mark Z. & Mark A. Delucchi. 2010. Evaluating the Feasibility of a Large Scale Wind, Water, and Sun Energy Infrastructure. Publicly published draft for submission to *Energy Policy, 2010.* Stanford University. {Article reviewed in Scientific American, Nov. 2009}
* “The Future of Capitalism: Building a Sustainable Energy Future”, 2009. McKinsey Quarterly
* Greenemeier, Larry. January 28, 2010. Crude Alternatives: Energy Industry Heavyweights Debate Fuels of the Future. *Scientific American.* [www.scientificamerican.com](http://www.scientificamerican.com)

**Community Involvement:**

*Sierra Club’s local Energy Teams Initiative.* 10 hours per month. Starts Nov. 1, 2010 (indefinite duration).

I have been invited to participate in a leadership (volunteer) role in the Beyond Coal Campaign of Sierra Club for Houston. Former oil & gas attorney Jen Powis is leading this effort for national Sierra Club in Houston, whose strategy is to use coalition building with other local NGO groups, local business, city, state to block new coal plants in Texas and encourage natural gas bridge fuel with a longer-term commitment toward renewables and energy efficiency. My role will be to assist her with strategy and implementation of campaign. Write 2 page memo summarizing my experience with this group, and how it relates to the readings and environmental policy.

**Fieldtrip:**

Attend one trade show or conference in Houston, TX on energy. Write on page memo noting how the conference relates to above readings, policy discussions, renewables, etc.

**Proposed Progress & Grading:**

* *Two week executive summary progress reports*:
  + One page memo with brief synopsis of one journal article per period emailed to faculty, or conference call as desired by faculty once every two weeks for one hour.
* *Fieldtrip & Community Involvement Report*
  + One page memo with brief synopsis, related to readings, emailed to faculty. For fieldtrip assignment, due within 7 days of completion; for community volunteer work, mid-term.
* *Short research paper*
  + Research and write on one of the topics listed above IN DEPTH (1.5 in, 5-7 pp), using only scholarly journal articles from established and peer-reviewed publications. Establish basic assignment parameters, expectations, and likely journals to consult by 6th week of semester.

**Proposed Points:**

* + 40 points: Two week progress reports which include a critical thinking component of one journal article, to faculty advisor via email (due Mondays at midnight every two weeks)
  + 10 points: Fieldwork memo (due within 7 days of event)
  + 10 points: Sierra Club volunteer memo (due mid-term)
  + 40 points: Short research paper on faculty–approved, detailed energy topic from topics listed above. 5-7pp. (due one week prior to end of semester)