### Course Approval Form

**Action Requested:**
- [X] Create new course
- [ ] Inactivate existing course
- [ ] Modify existing course (check all that apply)

**Title:**
- [X] Energy Policy

**College/School:** COS
**Department:** ESP
**Submit by:**
- Jennifer Sklarew
  - Ext: X3-2012
- Dann Sklarew
  - Ext: X3-2012
**Email:**
- jsklarew@gmu.edu
- dsklarew@gmu.edu

**Effective Term:**
- Fall
- Spring
- Summer
**Subject Code:** EVPP
**Number:** 533

**Credits:**
- [X] 3
- [ ] Repeatable (RD)
- [X] Not Repeatable (NR)

**Grade Mode:**
- [X] Regular (A, B, C, etc.)
- [ ] Satisfactory/No Credit
- [ ] Special (A, B C, etc. +IP)

**Schedule Type:**
- [X] Lecture (LEC)
- [ ] Lab (LAB)
- [ ] Recitation (RCT)
- [ ] Internship (INT)

**Restrictions:**
- Major, College, Degree, Program, etc. (include code)

**Catalog Copy for NEW Courses Only**

**Description**

Discusses resource options in the context of 3E’s: energy security, environment, and economics. Examines how these considerations apply to 3 P’s developed by Jennifer Sklarew: priorities, politics, and process. Examines sustainability and environmental angles of resources, reasons for specific nations’ policy choices, and possibilities for future energy policies. Considers how energy policies can create cooperation and conflict domestically and internationally.

**Notes**

- Hours of Lecture or Seminar per week: 2.5
- Hours of Lab or Studio: __________

**When Offered:**
- Fall
- Summer
- [X] Spring

**Approval Signatures**

**For Graduate Courses Only**

**Graduate Council Member**
**Provost Office**
**Graduate Council Approval Date**

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**For Registrar Office’s Use Only:** Banner Catalog revised 6/22/15
Course Proposal Submitted to the College of Science Curriculum Committee (COSCC)

The form above is processed by the Office of the University Registrar. This second page is for the COSCC’s reference. Please complete the applicable portions of this page to clearly communicate what the form above is requesting.

FOR ALL COURSES (required)
Course Number and Title: EVPP533 Energy Policy

Date of Departmental Approval: October 6, 2015

FOR INACTIVATED/REINSTATED COURSES (required if inactivating/reinstating a course)
- Reason for Inactivating/Reinstating:

FOR MODIFIED COURSES (required if modifying a course)
- Summary of the Modification:

- Text before Modification (title, repeat status, catalog description, etc.):

- Text after Modification (title, repeat status, catalog description, etc.):

- Reason for the Modification:

FOR NEW COURSES (required if creating a new course)
- Reason for the New Course: No EVPP graduate course on energy policy currently exists, and many COS graduate students have requested a regularly offered course on this topic. Graduate students focusing on environmental policy are actively seeking programs that include energy policy as a key component, because they recognize that understanding energy policy and policymaking processes is crucial to a holistic understanding of environmental policy and related areas such as climate change, water policy, and food security.

- Relationship to Existing Programs: Students in the Environmental Science and Policy program and the Earth Systems Science program are seeking a graduate level energy policy course. The course has been proposed for inclusion as a requirement for the Energy and Sustainability MAIS concentration.

- Relationship to Existing Courses: No other graduate EVPP course on energy policy currently exists. The undergraduate version, EVPP432, has received strong student interest and positive feedback.

- Semester of Initial Offering: Spring 2016

- Proposed Instructors: Jennifer Sklarew and Dann Sklarew

- Insert Tentative Syllabus Below
EVPP 533: Energy Policy

Instructor: TBD

Course description: Energy policy isn’t just about allocation of energy resources. In this course, we will discuss resource options in the context of the 3E’s: energy security, environment, and economics. We’ll also examine how these considerations apply to 3 P’s developed by Jennifer Sklarew: priorities, politics, and process. We’ll look at the 3P’s as frameworks for understanding how energy policymaking takes place. Through these three lenses, we’ll examine the sustainability and environmental angles of various resources, reasons for specific nations’ policy choices, and possibilities for future energy policies. These discussions will enable us to consider how energy policies can create cooperation and conflict domestically and internationally.

Course Learning Objectives:
1) Examine how energy systems form and change;
2) Evaluate potential of existing energy resources and policy options;
3) Characterize how energy policy is formulated;
4) Describe challenges energy policymakers face;
5) Compare and contrast how the parameters for 1-4 vary for distinct jurisdictions (i.e., various nations, states, municipalities); and
6) Assess what these 5 issues mean for local, national, and international energy cooperation and conflict.

Weekly Learning Objectives:
Derived from the above, we’ll also have learning objectives for each week that help us to move toward our course learning objectives.

Required text:

Optional:

Assignments:
1) Article for discussion: At least once during the semester, each student will find one article (newspaper, journal, magazine, website posting, etc.) on the session topic for discussion in class. Please send it to me by midnight the Saturday before class so I can distribute it for everyone to read before class. Be prepared to lead a 15-minute discussion of the article in class, including a brief summary of the article and how it relates to that day’s topic, and at least two questions for the class to discuss.
2. Semester project and interim assignments: The overall assignment is to examine how a particular city, state, or country determines its energy portfolio (the balance of energy supply sources and demand-side measures).

Questions to answer:
1. Does the current energy portfolio maximize all 3E’s?
2. Who/what are the key stakeholders, motivations, and challenges?
3. What would the optimal energy portfolio for this area look like, and what challenges to its realization exist?
4. If the area already has an optimal portfolio, what lessons can we learn from their example?

Divided into manageable pieces due about once a month.

a. 2nd week: Choose a city, state or country for your project.

b. 4th week: Energy profile of the country, state or city and a list of criteria for choosing the best energy portfolio, as well as a list of references. (5-7 pages)

c. 9th week: Roadmap to get to that portfolio, challenges facing it, and a list of references. (5-7 pages)

d. 12th week: Analyze how the 3Ps and 3Es apply to the country’s, state’s, or city’s energy system, and how they addressed/could address challenges to achieve change. (5-7 pages)

e. 15th week: Turn in 1) final papers incorporating revision of all of the interim assignments, including revisions to the roadmaps based on what you’ve learned about challenges; and 2) presentation slides.

3. **Presentation:** At the end of the semester, each student must give a short presentation explaining the results of the semester project. More details will be provided later in the semester. Everyone will turn in their presentations on the last day of class, but we’ll spread the presentations over two sessions: the last week of class, and the final exam day.

4. **Final Exam:** A take-home final exam will cover the main topics discussed in the course.

**Deadlines:** In fairness to all students, I will lower your grade by one letter grade for each week that the paper is late, starting from the deadline. I.e., if you turn in your paper after the deadline but before the next class, it will be downgraded by one letter grade.

**Class participation/Group discussion:** Aside from the textbook readings, I will either email the readings or links to them or post them on blackboard, along with questions for you to consider while reading. We’ll discuss these questions in class. If everyone demonstrates that they have done the readings and absorbed the concepts embodied in them each week, I won't need to give a final exam.

**Attendance:** If you need to miss class due to illness, travel, family obligations, etc., please notify me ahead of time via email. **To receive credit for the missed class, please choose two of the questions on the readings and email your responses to me before the next class.** If you have an unexcused absence and do not send answers to the questions, you will receive a zero for that day. If you have an excused absence but do not answer the questions, the class will not count toward your grade. If you decide to drop the course, please complete the necessary paperwork to avoid an automatic F at the end of the semester.

**Basis of Grading**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Class participation</td>
<td>10%</td>
</tr>
<tr>
<td>Discussion Leadership</td>
<td>5%</td>
</tr>
<tr>
<td>Three Policy Paper Interim Assignments</td>
<td>15% each</td>
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<tr>
<td>Policy Paper</td>
<td>15%</td>
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<tr>
<td>Presentation</td>
<td>15%</td>
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<tr>
<td><strong>Final Exam:</strong></td>
<td>10%</td>
</tr>
</tbody>
</table>

**Grade table** (General grading criteria for writing assignments, class participation and presentation will be provided separately, and specific criteria for each assignment will be provided during the semester.)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-92.9%</td>
</tr>
</tbody>
</table>
B+  87-89.9%
B   83-86.9%
B-  80-82.9%
C+  77-79.9%
C   70-76.9%
D   60-69.9%
F   <60%

**Plagiarism Statement:**
What is it? Plagiarism means using the exact words, opinions, or factual information from another person or source without giving that person or source credit.

**Plagiarism and the Internet:** Copyright rules also apply to users of the Internet who cite from Internet sources. Information and graphics accessed electronically must also be cited, giving credit to the sources. This material includes but is not limited to e-mail (don't cite or forward someone else's e-mail without permission), newsgroup material, and information from Web sites, including graphics. Even if you give credit, you must get permission from the original source to include any graphic that you did not create on your web page. Shareware graphics are not free. Freeware clipart is available for you to freely use. If the material does not say "free," assume it is not. Putting someone else's Internet material on your web page is stealing intellectual property. Making links to a site is currently acceptable, but getting permission is strongly advised, since many Web sites have their own requirements for linking to their material. (Source: [http://mason.gmu.edu/~montecin/plagiarism.htm](http://mason.gmu.edu/~montecin/plagiarism.htm))

How to avoid it? Authors must credit original sources through accepted documentation styles, such as parenthetical citation, footnotes, or endnotes; a listing of books and articles is not sufficient. Direct quotations always require citations. So do paraphrases and summaries of opinions or factual information formerly unknown to the writers or which the writers did not discover themselves. Exceptions include factual information that can be obtained from a variety of sources; the writers' own insights or findings from their own field research; and what has been termed common knowledge. Common knowledge is sometimes difficult to determine, so feel free to ask. Work that requires citations is not limited to text. Templates, data (facts/figures) for charts, and even cartoons used in presentations require citations! If you are uncertain about whether information should be cited, please cite to be safe, or ask me before turning in your work.

Why avoid it? Plagiarism is a violation of Mason’s Honor Code: [http://www.gmu.edu/facstaff/handbook/aD.html](http://www.gmu.edu/facstaff/handbook/aD.html) Plagiarism also reflects poorly on the intellectual capability of the person plagiarizing, and it is unfair to the original source of the plagiarized material. It also will earn you a failing grade in this class. I know professors who have failed students for plagiarism. Please don't turn me into one of them.

**General Plan for Class Schedule**

Class discussion of readings and article of the week: about 75 minutes
Break: about 10 minutes. Feel free to bring power bars or other fuel sources.
Class lecture by instructor or guest speaker and discussion of lecture: 1 hour
Discussion of applications to projects: 10 minutes
Lead-in to next class: 5 minutes
Session Topics and Readings:

I. WHY energy policy matters: Priorities

Week 1: Overview and syllabus review
Session overview: We'll discuss energy systems, as well as the elements of energy policymaking and policy.

a. What is an energy system?

Readings:
   Questions: 1) what characteristics define an energy system? 2) what does Smil say about the importance of efficiency in energy systems? 3) What are some of the requirements for energy system infrastructures, and what are some of the challenges they pose? 4) What do the examples Smil offers say about the motivators and challenges associated with energy system transitions?
   Questions: 1) What energy system complexities and challenges does the IEA world energy outlook reflect? 2) What roles do energy security, environment and economics play?

b. Policy vs. Policymaking
   - The Three P’s and 1 R: Priorities, Politics, Process, and Resources
   - The 3E’s: energy security/independence, environment, economics

Articles for discussion:
   Questions: 1) what incentives drive these groups? 2) why might they impact energy, and what challenges might they face?

Week 2: Environmental Considerations
Session overview: How does our energy policy reflect or conflict with environmental priorities? We’ll discuss topics including climate change, pollution and waste, land conservation, and ecosystem impacts.
Readings:

Required
2. http://www.whitehouse.gov/energy/our-environment#energy-menu Read the whole page, and also the Memorandum of Understanding on Environmental Justice (hyperlink on this page, but I will also send as a PDF).


**Questions:** 1) How do different stakeholders’ environmental concerns vary? 2) Do U.S. energy policies cause conflicts among the 3 E’s? 3) Why do we need an environmental justice MOU?

**Article for discussion (if we have time after Cornelia’s):**


**Questions:** 1) What purposes might the Environmental Impact Statement serve? 2) What priorities does the Keystone XL pipeline support or hinder for Canada and the U.S., and how?

**Optional**


**Week 3: Economics**

**Session overview:** Why does economics matter, and what tools are used to shape energy policy? We’ll discuss supply and demand side energy economics, regulations and incentives, and reasons to choose one option over another.

**Readings:**

**Required:**

1. Smil, Chapter 3.


Questions: 1) Why choose carrots vs. sticks (effectiveness, benefits and challenges of each)? 2) How is India’s environment for electricity restructuring different from that of the U.S.? 3) How do different stakeholders prioritize economics?

Optional:

http://www.purdue.edu/discoverypark/energy/assets/pdfs/History.pdf

http://www.ucei.berkeley.edu/ucei/bushnell/cato.pdf

II. HOW energy policies are decided: politics and process

Week 4: Politics
Session overview: How does politics influence energy policy? We’ll discuss the roles of local interests, government relationships with the private sector and public, and intragovernmental and intergovernmental dynamics.

ASSIGNMENT DUE: Energy profile of the country, state or city and a list of criteria for choosing the best energy portfolio, as well as a list of references.

Readings:
Required

Questions: 1) How does politics influence prospects for energy transitions? 2) How do different stakeholders influence energy policy?

Optional:
**Week 5: Process**

**Session Overview:** How does the energy policy process work at different levels and in different nations? What are the roles of the government, public and private sector?

**Readings:**

**Required:****

**Questions:** 1) What kinds of stakeholders play a role in the energy policymaking process? 2) How do politics and the policymaking process interact to affect energy system transitions?

**Optional:**


**III. WHAT factors affect demand**

**Week 6: Conservation and Efficiency**

**Session Overview:** How do energy policies incorporate conservation and efficiency policies, and how can they impact energy supply policy decisions?

**Readings:**


Questions: 1) What challenges do conservation and efficiency policies face? 2) Why would stakeholders support or oppose conservation and efficiency policies?

IV. WHAT energy sources are currently available: Supply

Week 7: Fossil Fuels I: Oil and Natural Gas

Session Overview: How are oil and natural gas policies different in producing and importing countries? How have trends changed over time, and what role do the 3Es play?

Readings:
Required:


Questions: 1) Which of the 3E’s are federal government, state government, and local stakeholders prioritizing, and how do the 3P’s impact our oil and gas policies? 2) Does our policy cause conflicts among the 3 E’s?

Optional:


Week 8: Spring Break: No Class

Week 9: Fossil Fuels II: Coal

Session Overview: How are coal policies different in producing and importing states and countries? How have trends changed over time, and what role do the 3Es play?
**ASSIGNMENT DUE:** Roadmap to get to your ideal portfolio, challenges facing it, and a list of references.

**Readings:**

**Required:**

**Questions:** 1) which of the 3E’s are we prioritizing, and how do the 3P’s impact our coal policies? 2) Does our policy cause conflicts among the 3 E’s?

**Optional:**

**Week 10: Nuclear Power**

**Session Overview:** How have nuclear power policies changed since the TMI, Chernobyl, and Fukushima accidents? What role do the 3Es play?

**Readings:**

**Required:**

**Questions:** 1) which of the 3E’s are we prioritizing, and how do the 3P’s impact our nuclear policies? 2) Does our policy cause conflicts among the 3 E’s?

**Week 11: Alternative Fuels: Solar and Wind**

**Session Overview:** How have solar and wind policies affected expansion of these technologies, and what challenges do they face? What role do the 3Es play?

**Readings:**

**Required:**
2. Stefes, Christoph, and Frank N. Laird. 2010. Creating Path Dependency: The Divergence of German and


Questions: 1) which of the 3E’s are the U.S. and Germany prioritizing, and how do the 3P’s impact our solar and wind power policies? 2) What institutional issues are U.S. policymakers considering? 3) What challenges do these technologies face in different countries?

Optional:


Week 12: Alternative Fuels: Hydro, Biomass, Geothermal, CHP, and Waste-to-Energy

Session Overview: How have hydro, biomass, geothermal, CHP and waste-to-heat policies affected expansion of these technologies, and what challenges do they face? What role do the 3Es play?

Readings:

Required:


   http://www.energy.ca.gov/research/renewable/chp.html


Questions: 1) Which of the 3E’s are we prioritizing, and how do the 3P’s impact our hydro, biomass and geothermal policies? 2) Does our policy cause conflicts among the 3 E’s? 3) What challenges do these technologies face?

**Week 13: Transportation**

**Session Overview:** How has transportation policy changed over time in response to the 3 Es?

**Readings:**

**Required:**

**Questions:** 1) What challenges do clean transport policies face? 2) What can make these policies appealing to various stakeholder groups? 3) How do the 3 Es affect these policies?

**Optional:**

V. WHERE energy policy is heading

**Week 14: The roles of innovation and resilience**

**Session Overview:** What roles do innovation and resilience in energy policy? How do they interact with the 3Es and 3 Ps?

**ASSIGNMENT DUE:** Analyze how the 3Ps and 3Es apply to the country’s, state’s, or city’s energy system, and how they addressed/could address challenges to achieve change.

**Readings:**

**Required:**
2. Smil, Chapter 4.
http://www.postcarbon.org/Reader/PCReader-Rees-Foundation.pdf

Questions: 1) What role can innovation play in meeting the 3Es? 2) How do the 3 Ps help or hinder innovation?

**Week 15: Student presentations**
**ASSIGNMENT DUE:** Turn in presentation slides.

**Week 16: Student presentations**
**ASSIGNMENT DUE:** Turn in final papers incorporating revision of all of the interim assignments, including revisions to the roadmaps based on what you’ve learned about challenges; and 2)