

## NRES 341/541: Introduction to Sustainable Energy Policy

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Fall, 2019

University of Wisconsin-Stevens Point  
College of Natural Resources

3 credits

Class Room: TNR 271  
Tue & Thu. 11:00 am-12:15 pm

### INSTRUCTOR

**Dr. Shiba Kar**

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Office hours: Tuesday 9-11 am; Wednesday 3-4 pm or by appointment

### COURSE DESCRIPTION AND OBJECTIVE

Ensuring sustainable energy for current and future generations is one of the greatest challenges that humankind faces today. The concern about availability of energy resources without compromising environmental and socio-economic damages demands for skilled and educated workforce and leaders who can navigate through institutional, economic, environmental, and technological dimensions of the energy issues. To make informed and responsible choices about our production and use of energy, it is essential to have developed understanding and skill-sets that would enable the decision-makers to analyze policy consequences of continued reliance on burning fossil carbon, inadequate renewable energy initiatives, and inefficient ways of using energy particularly in a changing climate. We must pursue sustainable energy strategies to maintain our ecosystem integrity and socio-economic prosperity.

In this course, we will critically examine energy policy at the international, federal, state, and local levels and introduce tools for interdisciplinary and collaborative approaches to solve energy challenges. Students will become familiar with the breadth of energy-related problems at stake through development of methods, tools, and perspectives to analyze them. The class will review the types of energy used historically from fossil fuels to renewables energy alternatives, as well as the increasingly diverse possibilities for future energy use discussed in current policy debates. Coverage also includes a historical review and analysis of energy policies to move forward for a sustainable energy future. The field of energy policy and sustainability is inherently interdisciplinary so the class draws on a set of tools and perspectives derived from multiple disciplines.

### COURSE LEARNING OUTCOME

Upon successful completion of this course you will be able to:

1. Critically evaluate and analyze energy policies and information from a diverse array of disciplines to formulate solutions to the energy challenges.
2. Apply a sustainability framework that considers different energy resources and technologies; and helps analyzing past, current, and proposed energy policies at the international, federal, state, and local levels in achieving sustainable energy goal.
3. Collaborate with peers with diverse sets of values, beliefs, and world views in a team environment.
4. Communicate ideas in writing and orally to your peers formally and informally.

## READINGS AND OTHER COURSE MATERIALS

There is no required textbook for the course. I have carefully selected the readings and other learning materials to represent the best available science and information on the topics we will be discussing. The readings are required (unless designated as “supplemental”) and will form the basis for our discussions and debates in class. Required means that I expect you to be able to explain, interpret, apply, analyze, and evaluate the material in the class, exams and other assignments. I will post all the required readings and links to websites on *Canvas*. The required readings are a work-in-progress and I may amend and/or supplement the list throughout the semester. I will use lectures to emphasize the key concepts and theories but I expect you to learn more from the readings and assignments.

## EVALUATION

This course will rely upon a variety of evaluation methods to provide you an opportunity to understand and synthesize semester’s work, and achieve the expected learning outcomes:

Assignments/Exams	Points	Due date
Quizzes/Reflection	50	Random
Short Assignments		
- <i>Assignment 1</i>	50	Sep 12, in class
- <i>Assignment 2</i>	50	Oct. 10
Midterm exam	100	Oct 17, Thu, in class
Group Assignment		
- <i>Individual Report</i>	100	Nov. 21
- <i>Team presentation</i>	50	Week 14 and 15
Final exam	100	Dec. 19, Thu; 10:15 am-12:15 pm
<b>Total</b>	<b>500</b>	

Final grades will be based on the percentage of the total 500 points that you earn on your assignments. The grading scale listed below indicates what percentages are required to earn a certain grade. The percentage decimal points will be rounded up to the closest number in the grading range. Grades will not be curved.

93-100 = A	87- 89 = B+	77-79 = C+	67-69 = D+
90- 92 = A-	83- 86 = B	73-76 = C	60-66 = D
	80-82 = B-	70-72 = C-	00-59 = F

I will post the grades and feedback in *Canvas* with each assignment so that you can track your progress as the course goes along. If at any point you have questions or concerns about your grade or any of your assignments, send me an email, I am happy to help!

## ATTENDANCE

Attendance of class lectures and active participation in class discussion is required and your absence must be excused. An excused absence is defined as an absence for which you have provided me with written notice by email of your intent to be absent and the valid reason for the absence prior to the start of the lecture period for which you will be absent. Valid reasons

for an excused absence include absences due to illness, compelling family needs, work demands, and job interviews.

**1. Quizzes (50 points)**

There will be total 5 unannounced random quizzes or reflection questions at the beginning of classes throughout the semester. Each quiz will consist of 10 points and there will be no makeup quizzes. If you are late or absent in class without valid reason, you will miss the quiz and points.

**2. Short Assignments (50+50= 100 points)**

*Assignment 1 (50 points):* The class will be divided into teams— each team consisting of 3-4 students. Each team will randomly interview about 9-12 students/faculty/staff within UWSP campus (each team member will conduct at least 3 interviews). The interview questions will aim at assessing respondents' awareness and perceptions on sustainable energy production and use. Each team will compare, contrast and analyze interview responses and then share (brief presentation) the key findings with the class. I will provide you with more details regarding this assignment as the semester progresses.

*Assignment 2 (50 points):* This is an individual assignment. You must select a county (preferably where you grew up) and examine if the county office has adopted or is implementing any Sustainable Energy Management Plan or any energy policy Strategies. You will critically evaluate these energy plan/strategies and write a short briefing paper (2 pages) targeting the county board members addressing the following issues:

- Summarize the plan/policy strategy by identifying the key factors/initiatives that might drive the progress or act as barriers towards energy sustainability.
- Recommend what else county could do in ensuring sustainable energy strategies for short and long term.

The briefing paper must be uploaded to *Canvas* by due date. A copy of the briefing paper must also be shared with respective county executive with an email copy to me.

**3. Mid-term exam (100 points)**

The midterm exam will be based on class lectures and reading materials. More specifics on the exam will be shared as class progresses.

**4. Group Project assignment (150 points)**

I will introduce this assignment and assign you to a group during the 4th week of class. This will be your team for the individual report assignment (100 points) and team presentation (50 points) towards the end of semester.

To give you some firsthand experience in identifying and analyzing energy policy and develop a portfolio of policy solutions to meet sustainable energy goal, your group must select Wisconsin and 3 other states from a given list and do a comparative analysis of energy policies and regulations (such as incentives, subsidies, rules and mandates) as well as renewable energy initiatives. As a collaborative group work, each team member will focus on Wisconsin and one other assigned state. Then each team member will write an individual analytical paper focusing on energy data, policy findings, challenges and recommendations. The paper should be submitted to *Canvas* dropbox by the due date. You will also send a copy of the individual analytical paper to your legislators at state/federal level with an email copy to me. Then each

group of students will work together and make a team presentation combining their findings and policy recommendations with the class.

If there is a problem with the group dynamics, it is imperative that you call it to my attention at the earliest possible time. If a member does not deliver tasks within the agreed time-frame, you should let me know well ahead of the deadline. If your group would like to meet with me for assistance on a group project, I will make myself available. If evidence of a free-riding problem (i.e. one or more group members not completing their share of the workload but sharing the benefits of the group) arises, we will attempt to address it at a group meeting. If the problem persists, the other members of the group, after consulting with me, may vote to exclude the free-rider from the group. In this event, the free-rider will receive 0 points for the whole or part of the project.

**No Late Assignments are expected.** To receive full credit, all assignments must be uploaded to the drop-box on the course *Canvas* site prior to the stated date (by midnight). Assignments turned in after the deadline will be considered late and will be subject to 10% per day late penalty. For example, a 100-point assignment that is two days late will, at most, be worth 80 points. Written work presented in an improper manner (see plagiarism discussion below) will result in you having to rewrite the assignment, and/or a reduction in points earned.

#### 5. Final exam (100 points)

The final exam will be based on class lectures and reading materials covered throughout the semester with more emphasis on 2<sup>nd</sup> half of the semester. More specifics on the exam will be shared as class progresses.

#### ACADEMIC INTEGRITY

**I do not tolerate plagiarism or cheating.** Plagiarism of any type in your work is academic misconduct and unacceptable – consequences for plagiarism may range from an oral reprimand to expulsion from the University. Plagiarism is defined as deliberate or accidental use of ideas, research or words of another person without fully attributing them to their original sources. According to the *Merriam-Webster Online Dictionary*, to "plagiarize" means 1) to steal and pass off (the ideas or words of another) as one's own 2) to use (another's production) without crediting the source 3) to commit literary theft 4) to present as new and original an idea or product derived from an existing source. Obvious examples of plagiarism include turning in someone else's work as your own, cutting and pasting website text into a paper, or failing to properly cite another author's work. Less obvious forms of plagiarism involve paraphrasing the work of another author (or student) by simply rearranging a few words. All work must be your own. Do not copy or hand in the work of other students, authors, sources. When using other sources in your writing, be sure to credit those sources both within the text and at the end of your reports/papers. If you have any questions about what constitutes plagiarism, please review the resources available at <http://library.uwsp.edu/guides/vrd/plagiarism.htm> and talk with me.

**All assignments submitted via a dropbox in *Canvas* are automatically linked to *turnitin.com*** (software designed to detect plagiarism). If it appears to me that potential plagiarism or academic misconduct has occurred, I will initiate the disciplinary process outlined in Chapter 14 of the University of Wisconsin System Code. If the potential plagiarism or academic misconduct has occurred in relation to an individual or group project, I will initiate the disciplinary process for the specific student/ student group.

**Tentative Class Schedule:**

Date	Topics	Readings & Assignments
<b>Week 1:</b> Sep 3-5	Introduction and course overview  Energy basics, status and outlook	<ul style="list-style-type: none"> <li>• Ice-breaker activities</li> <li>• Course Syllabus</li> <li>• Energy Basics: (<a href="http://www.eia.gov/energyexplained/index.cfm?page=about_home">http://www.eia.gov/energyexplained/index.cfm?page=about_home</a>)</li> </ul> <p>• <b>Introduce Assignment 1</b></p>
<b>Week 2:</b> Sep 10-12	Energy policy basics, types and historical trend  Discussion	<ul style="list-style-type: none"> <li>• Energy Policy in the US (Geri and McNabb 2011, Ch. 4)</li> <li>• Supplemental readings</li> </ul> <p><b>Due: Assignment 1- Brief group presentations on interview findings</b></p>
<b>Week 3:</b> Sep 17-19	Current Energy Outlook: Fossil fuels  Current Energy Outlook: Renewable energy	<ul style="list-style-type: none"> <li>• EIA US Energy Outlook 2018 (Overview)</li> </ul> <p>• <b>Introduce Assignment 2</b></p>
<b>Week 4:</b> Sep 24-26	Sustainability basics and energy  Dimensions in energy sustainability	<ul style="list-style-type: none"> <li>• Everett et al. 2012 Ch. 1</li> <li>• Hollander 1992, Ch. 11 (Economics, ethics and environment)</li> <li>• <i>Supplemental reading:</i></li> </ul> <p><b>Introduce Group assignment</b></p>
<b>Week 5:</b> Oct 1-3	Energy Policy issues, options and challenges	<ul style="list-style-type: none"> <li>• Energy Policy in the US (Geri and McNabb 2011) Ch. 1</li> </ul> <p><b>Assignment 2 part-1: Upload county energy plan to Canvas</b></p> <ul style="list-style-type: none"> <li>• Geller 2003 Ch.3</li> <li>• <i>Supplemental readings</i></li> </ul>
<b>Week 6:</b> Oct 8-10	Energy efficiency, conservation and renewable energy (Guest speaker, TBD)  (Guest speaker, Tyler Huebner, RENEW Wisconsin)	<ul style="list-style-type: none"> <li>• Energy efficiency prospect in the US (Summary)- NAS 2010</li> <li>• Renew Wisconsin Website resources</li> </ul> <p><b>Assignment 2- part2 due: Submit briefing paper to Canvas dropbox Oct. 11, Thursday 5pm</b></p>
<b>Week 7:</b> Oct 15-17	Campus/ organizational energy initiatives (Guest speaker, TBD)  <b>Mid-term exam: Oct. 17, in class</b>	<ul style="list-style-type: none"> <li>• UWSP Sustainability annual report</li> </ul>

<b>Week 8:</b> Oct 22-25	Energy and climate change linkages  Discussion	<ul style="list-style-type: none"> <li>Human drivers of climate change-Rosa and Dietz 2012</li> <li>PBS video: Powering the planet</li> <li>Brown and Savacool 2011 Ch. 6- Remedies for climate and energy</li> </ul> <i>Supplemental readings:</i>
<b>Week 9:</b> Oct. 29-31	Evaluation and analysis of energy policies- steps, methods and strategies	<ul style="list-style-type: none"> <li>Energy Policy Analysis, Hamilton 2013 Ch.1</li> <li>Net energy analysis- Carbajales-Dale 2014</li> </ul>
<b>Week 10:</b> Nov 5-7	Methods and strategies to inform policy makers  Discussion	<ul style="list-style-type: none"> <li>Energy Policy in the US, Geri and McNabb 2011, Ch. 7</li> <li>Video: <a href="https://www.youtube.com/watch?v=XBDs4I48_OA">https://www.youtube.com/watch?v=XBDs4I48_OA</a></li> <li>Dsireusa.org- select policy and problem, challenges</li> </ul>
<b>Week 11:</b> Nov 12-14	Developing sustainable energy framework	<ul style="list-style-type: none"> <li>Gerri and McNabb 2011. Ch.10. Policies for a New Energy Future</li> <li>Supplemental reading</li> <li>WI Energy independent communities- case studies</li> </ul>
<b>Week 12:</b> Nov 19-21	Energy and sustainable development	Sustainable Development Goals <a href="https://sustainabledevelopment.un.org/index.php?menu=198">https://sustainabledevelopment.un.org/index.php?menu=198</a> <ul style="list-style-type: none"> <li>UN Sustainable Energy Report 2014 (UN se4all website/report)</li> <li>Examples/ case studies from Brazil, China, India etc.</li> </ul> <b>Submit report individually in Canvas and send to your legislator</b>
<b>Week 13:</b> Nov 26	Group discussion/ presentation prep.  Thanksgiving (no class)	Share individual findings and prepare presentations.
<b>Week 14:</b> Dec 3-5	Group presentations  Group presentations	
<b>Week 15:</b> Dec 10-12	Group presentations  Wrap up and reflections	<b>Submit presentations in Canvas</b>
<b>Finals Week</b>	<b>Final Exam, Dec. 19 Thu., 10:15-12:15 pm at TNR 271</b>	