

Course Information

Course Number: GEOG 309-500

Course Title: Geography of Energy

Time: MWF 9:10-10:00 am

Location: Halbouty 104

Credit Hours: 3

Instructor Details

Instructor: Dr. Christian Brannstrom (Professor of Geography and Senior Associate Dean for Undergraduate Education, College of Arts and Sciences)

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Office Hours: Wednesday 1-2:30 pm

Course Description

This course introduces students to geographical understandings of energy systems, including fossil and renewable sources. The first part of the class systematically describes energy types, while the second half describes specific “cases” or problems relating to social science and/or geographical understandings of energy systems. A written report on personal electricity consumption will allow students to collect and analyze data, and situate the findings in an emerging “behavioral wedge” literature.

Course Prerequisites

None.

Course Learning Outcomes

Upon conclusion of this course students will (1) identify the location, benefits, and drawbacks of major **energy sources**; (2) identify major **institutions and organizations** of energy supply and consumption; (3) evaluate main paradigms of **energy futures**; (4) obtain, analyze, synthesize, and communicate **information** regarding key places of energy supply or transformation; (5) situate their energy consumption within **national and global contexts**.

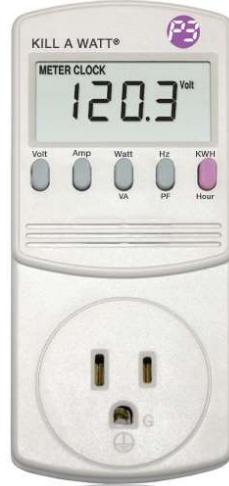
Textbook and/or Resource Materials

Required readings will be posted in Canvas. There is no required textbook; however, students are required to purchase a Kill a watt electricity submeter (P3 International), for approximately \$25. See image at right. This device is **required** for one assignment.

Other key resources:

<https://visualizingenergy.org/>

<https://www.eia.gov/>



Grading Policy

Letter grades will follow approximately the following scheme: A for 100-90% total points; B 89-80%; C 79-65%; D 64-50%; F below 50%. The distribution of grades may be adjusted to class performance.

Graded items are as follows:

1. Two exams (20% each) will be based on lectures and required readings in format of multiple-choice questions conducted in Canvas with instructor proctoring.
2. One assignment (30% of final grade), approximately 10 pages in length, will report findings of the electricity consumption assignment, described below. Page length recommendation does NOT include references, tables, figures, etc. This assignment must be double-spaced, 12 pt., 1" margins, and use appropriate academic referencing of sources. Students will upload the assignment in Canvas. Additional details on this assignment will be provided in class.
3. Short activities (30% of final grade) on energy topics will be conducted through Canvas.

Late Work Policy

Late work will be accepted but will be reduced by up to 5% of grade per day after due date.

Work submitted by a student as makeup work for an excused absence is not considered late work and is exempted from the late work policy. (See Student Rule 7.)

Course Schedule

Date	Topic (Canvas module)	Required Readings (Canvas module)
8/19 (M)	Course Introduction	Syllabus; EIA materials
8/21 (W)	Energy Systems and Energy Geographies	Servitude of Power, pp. 1-14; Bridge et al. 2013; Bridge and Gailing 2020; Donaghy et al. 2023; Healy et al. 2019
8/23 (F)	Energy Systems and Energy Geographies. Work on Activity #1 *remote asynchronous*	See above
8/26 (M)	Biomass (solid)	Bailis et al. 2005; Lacey et al. 2016; Puig et al. 2021
8/28 (W)	Biomass (liquid)	Kedron 2011; Donner 2008; Lark et al. 2022
8/30 (F)	Wind	Veers et al. 2019
9/2 (M)	No class: Labor Day holiday	
9/4 (W)	Solar DUE: Activity #1	Lemay et al. 2023; Mulvaney 2017; Crawford et al. 2022
9/6 (F)	Wind Power in Texas	Slattery et al. 2011; Brannstrom et al. 2011, 2015; Shoeib 2021
9/9 (M)	Coal	Driscoll et al. 2015; Mulvaney chapter 4; Cropper 2021
9/11 (W)	Coal, continued	
9/13 (F)	Petroleum	Murphy et al. 2016, 2017; Ellis et al. 2016; Valdivia 2018; Bonetti et al. 2021;
9/16 (M)	Petroleum, continued	See above
9/18 (W)	Natural gas	Zhang 2020
9/20 (F)	Natural gas, continued	See above

9/23 (M)	Nuclear DUE: Activity #2 *remote asynchronous*	Greco and Yamamoto 2019; Mulvaney chapter 5; Verma 2021
9/25 (W)	Hydropower	Moran 2018; Fan et al. 2022
9/27 (F)	Review for Exam 1	
9/30 (M)	Mid Term Exam 1	
10/2 (W)	Careers in Energy (virtual panel)	
10/4 (F)	Energy Conservation, Behavioral Wedge and Electricity Consumption assignment	Dietz et al. 2009; Goldenstein et al. 2020; see also "Kill a Watt submeter guidance and scholarly sources"
10/7 (M)	No class: Fall Break	
10/11 (W)	Energy and Climate Change	McGlade et al. 2015; Mercure 2018; Welsby et al. 2021; Waxman et al. 2020; Kühne et al. 2022
10/13 (F)	Energy and Climate Change, continued	See above
10/14 (M)	Peak Oil or Peak Demand?	Halttunen et al. 2022; Brannstrom et al. 2022
10/16 (W)	OPEC and IEA	Fattouh 2016; EIA 2023
10/18 (F)	Resource Nationalism (1): Introduction	
10/21 (M)	Civil Society Organizations and Corporate Social Responsibility	Watts 2005; Megura and Gudmundson 2022
10/23 (W)	The February 2021 Texas Power Crisis DUE: Activity #3 (ERCOT)	Busby et al. 2021; Never Again report
10/25 (F)	Backyard Drilling in Denton, TX	Fry et al. 2017 (suburbanization and urban drilling)
10/28 (M)	Backyard Drilling in Denton, TX, continued	See above
10/30 (W)	Resource Nationalism (2): National Oil Companies	Brannstrom 2020 (excerpt)
11/1 (F)	Resource Nationalism (2): National Oil Companies, continued *remote synchronous*	
11/4 (M)	Energy Geopolitics *remote synchronous*	Thompson 2022; Blondeel et al. 2021; Kuzemko et al. 2022
11/6 (W)	Electricity Consumption Update	
11/8 (F)	Resource Nationalism (3): Synthesis	
11/11 (M)	Petro-Violence: Nigeria	Watts 2016; Watts 2017
11/13 (W)	Electromobility DUE: Activity #4	Mulvaney chapter 8; Escosteguy 2023; Perreault 2020; Jerez 2021
11/15 (F)	Opposing Wind Power	Ellis et al. 2023; Brannstrom et al. 2017
11/18 (M)	Electrochemical Revolutions	Luna et al. 2019; Naschert 2020; Tomlinson 2020; Brannstrom 2023; Brannstrom and Gorayeb 2022
11/20 (W)	Energy Density	

11/25 (M)	Energy Density DUE: Electricity Consumption Assignment	
11/27 (W)	Reading Day	
12/2 (M)	Energy Futures	Goldthau 2019; Temper 2020
12/4 (M)	Review for Exam 2	
12/6 (F)	Exam 2 , 8-10 am	

Note: the 2024 [Texas A&M Conference on Energy](#) is scheduled for 11-13 September

University Policies

Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" ([Section 20.1.2.3, Student Rule 20](#)).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, a person who is subjected to the alleged conduct will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services](#) (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#).

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in healthy self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.