TEXAS
The University of Texas at Austin

Course Outline and Description for

ENERGY, ECONOMICS & POLICY

August 25, 2025

Course Title: Energy, Economics & Policy
Semester: Fall 2025
Location: BRB 2.136
Day/Time: Monday & Wednesday 9:30 to 11:00 a.m.
Course listing: ECO 395K (36389)
Instructors: Joshua D. Rhodes, Ph.D. Harry R. Kennard, Ph.D.
Email: joshdr@austin.utexas.edu; hkennard@utexas.edu
Office Hours: By appointment via email or request after class

Course web site: Announcements, lectures, and course documents will be posted on Canvas

Description: This multidisciplinary course will give graduate students in economics a firm basis of understanding in the energy system, including fuels, environmental impacts and public policies. Topics will be interdisciplinary and include an introduction to quantitative concepts in energy, including the differences among fuels and energy technologies, energy policy levers, and the societal aspects of energy, such as culture and international affairs. Throughout the course the relationships to economics will be discussed, and, through a series of guest lectures, deeper themes of energy economics considered. This course will cover brief snippets of energy history, use real-world examples, and look forward into the future. The course will be interactive and lecture-oriented around current events related to energy. Students will be required to attend class, supported by the recommended reading, working towards a mid-term in-class closed book exam and final assessment based on an oral defense of a Short Response writing assignment.

Grades and Assignments:
33.3% Mid-term Exam
33.3% Research Paper and Defense
33.3% Class attendance, participation and discussion

Additional tasks and extra credit assignments may be supplied throughout the semester.

Required Reading: The supplementary reference source for this course is a digital textbook, "Energy 101: Energy Technology & Policy" and available for $40.00 via https://www.energy101.com/eep-fall-2025/
This link is meant only for students enrolled within the class – please do not share it with anyone else.

Companion calculators are available for free at https://www.energy101.com/energy-calculators/.

Class participation and discussion: Attendance is required and roll will be taken daily in class. Students are encouraged to ask questions and contribute to discussion in class. Students will get two excused absences, no questions asked, for the whole semester.

Exam: The exam will be closed-note, closed-book and will cover the lectures and topics preceding the exam date (see schedule).

Research Paper and Defense: [redacted] Further scope and assessment details will be given during the semester.

Use of AI Tools for Class Work: Students are allowed to use AI tools but are highly encouraged to use them only for ideation and as a critical editor of original work. Note that any work turned in with false or fake references or citations, whether made up by the student or via AI, will result in ***receiving zero credit*** for the assignment and the student will not be allowed to redo or substitute in additional work for the assignment. Student comprehension of concepts presented in written work will be tested in class.

Observance of University policies: Standard University policies relating to accommodation for students with disabilities and to scholastic dishonesty will be followed in this course. Information regarding these policies may be found in the General Information Bulletin. The University of Texas at Austin provides upon request appropriate academic adjustments for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TDD or the College of Engineering Director of Students with Disabilities at 471-4321.

Measurement and evaluation:
Standard overall course/instructor evaluations will be administered at the end of the course, as well as periodic topical evaluations specifically focused on course improvement.

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Course Schedule

Energy, Economics & Policy

Subject to change, see Canvas for latest version

Week	Day	Date	Lecture #	Topic	Recommended Reading
1	Mon	8/25/2025	1	Energy Introduction, Transitions, admin, syllabus, etc.	
	Wed	8/27/2025	2	Energy Vocabulary, Basics, and Uses	1,2,3,4,5
2	Mon	9/01/2025		Labor Day; no classes held	
	Wed	9/03/2025	3	Fossil Fuels I: Coal, Oil, Natural Gas	6,7,8,9
3	Mon	9/08/2025	4	Fossil Fuels II: Midstream, Downstream, and Unconventionals	9,10
	Wed	9/10/2025	5	Renewable Energy I: Wind, Solar, Ocean	11,13,14
4	Mon	9/15/2025	6	Renewable Energy II: Geo, Hydro, Bio	12,15,16
	Wed	9/17/2025	7	Nuclear Power	17
5	Mon	9/22/2025	8	The Electricity Sector I: heat rates, transmission, capacity factors	18,19
	Wed	9/24/2025	9	The Electricity Sector II: smart grids, super grids, microgrids	20,21
6	Mon	9/29/2025	10	GUEST LECTURE: Markets and Deregulation	
	Wed	10/01/2025	11	Energy and the Built Environment	24
7	Mon	10/06/2025		WRITTEN EXAM 1 (Lectures 1 – 9)	
	Wed	10/08/2025	12	Energy Geography & National Security	
8	Mon	10/13/2025	13	Transportation	22,23
	Wed	10/15/2025	14	Energy and the Economy	27
9	Mon	10/20/2025	15	Hydrogen	
	Wed	10/22/2025	16	Energy & the Environment I: Air, Land, Water, Climate Change	28, 30
10	Mon	10/27/2025	17	Conservation, Efficiency, and Pathways for Decarbonization	31
	Wed	10/29/2025	18	Food Energy Water Nexus	32,33
11	Mon	11/03/2025	19	GUEST LECTURE: The Economic Superorganism	
	Wed	11/05/2025	20	GUEST LECTURE: Dallas Fed	
12	Mon	11/10/2025	21	Energy Policy I	25
	Wed	11/12/2025	22	Energy Policy II	26
13	Mon	11/17/2025	23	Texas as Energy Leader and Laggard	
	Wed	11/19/2025	24	GUEST LECTURE: Energy Law and Regulation	
14	Mon	11/24/2025		Fall break / Thanksgiving; no classes held	
	Wed	11/26/2025		Fall break / Thanksgiving; no classes held	
15	Mon	12/01/2025	25	Megatrends, Critical Tech, Energy & Humanity & Course Evaluations	35
	Wed	12/03/2025		SHORT RESPONSE DEFENSE	
16	Mon	12/08/2025		SHORT RESPONSE DEFENSE	