

# ENRG3310: INTRODUCTION TO ENERGY AND SUSTAINABILITY

Spring 2023 (January 17<sup>th</sup>–April 25<sup>th</sup> 2023)

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[www.enrg3310.com](http://www.enrg3310.com)

ENRG3310 is an undergraduate course intended for a broad range of majors interested in energy and sustainability. This course examines the history, present reality, and the likely future of our energy use from a combined social and natural science perspective. We will cover socioeconomic, scientific, political, and engineering aspects of the technologies currently used to produce energy and those that may constitute our energy future. This class is the introductory course for the Energy & Sustainability minor at UH, and its intention is to make graduating seniors highly competitive in an economy that will likely be dominated by energy issues in the near future.

<i>Class Meetings</i>	<u>Lectures</u> <sup>†</sup> 1:00p–2:30p Tue/Thu, 138 Melcher Hall No class on 02/09, 03/14, and 03/16.  <u>Office Hours</u> Both Ognjen and Fatima are happy to meet with you at (almost) any time. Email to set up a time.
<i>Exams and Grading</i>	<b>You are allowed—and encouraged—to use Internet during all exams.</b>  <b>Quizzes</b> —given on Blackboard after each lecture 250 <b>Midterm I</b> —02/14/2023, in class period 250 <b>Midterm II</b> —03/28/2023, in class period 250 <b>Midterm III</b> —04/27/2023, in class period 250  <b>Total Points 1000</b>  Last day to drop the course without grade—Wednesday, 02/01/2023 Last day to drop the course—Wednesday 04/19/2023 Grade point ranges: <b>A:</b> >875, <b>B:</b> 750–874; <b>C:</b> 625–749; <b>D:</b> 500–624; <b>F:</b> <500
<i>Textbook and Other Materials</i>	Miljanić / Pratt— <i>Introduction to Energy and Sustainability</i> , Wiley, 2021. You will find lecture notes and website very useful too.
<i>Counseling and Psychological Services (CAPS)</i>	<b>CAPS</b> can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS ( <a href="http://uh.edu/caps">uh.edu/caps</a> ) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the “Let's Talk” program, a drop-in consultation service at convenient locations and hours around campus. <a href="http://uh.edu/caps/outreach/lets_talk">uh.edu/caps/outreach/lets_talk</a>

\* Prof. Miljanić's name is phonetically pronounced as: Ogg•nyen Meel•yan•ich.

<sup>†</sup> Students are responsible for being aware of the announcements made during class or posted on class website.

<i>Topics and Timeline</i> —tentative—	<b>Date</b>	<b>Topic</b>
	<b>Part 1: Introduction to Energy and Sustainability</b>	
	Tue 01/17	Introduction. We will watch documentary <i>Switch</i>
	Thu 01/19	Introduction. We will watch documentary <i>Switch On</i>
	Tue 01/24	Defining and Measuring Energy & Power
	Thu 01/26	Defining and Measuring Sustainability
	Tue 01/31	Guest speaker: <u>Jason Theriot</u> , <i>Coastal Land Loss in Louisiana</i>
	Thu 02/02	Forms of Energy/Energy Conversions/Heat & Work
	Tue 02/07	Energy Losses. Principles of Thermodynamics
	Thu 02/09	No Class: Engineering Career Fair
	Tue 02/14	<b>Midterm I (in class period)</b>
	<b>Part 2: The Long Run of Fossil Fuels</b>	
	Thu 02/16	Fossil Fuel Combustion. Pollution.
	Tue 02/21	Coal (online)
	Thu 02/23	Oil & Natural Gas: Societal & Environmental Effects (online)
	Tue 02/28	History of Oil & Gas Industry
	Thu 03/02	Energy Use in Transportation
	Tue 03/07	Industrial and Agricultural Energy Consumption
	Thu 03/09	Measuring Electricity. Production, Transportation, Distribution
	Tue 03/21	Electricity Storage and Batteries
	Thu 03/23	<b>Midterm II (in class period)</b>
	<b>Part 3: Climate Change and Fuels of the Future</b>	
	Tue 03/28	Climate Change and Energy Transition
	Thu 03/30	Hydroelectric Power
	Tue 04/04	Nuclear Energy
	Thu 04/06	Biomass as a Fuel. Bioethanol in Brazil and the US
	Tue 04/11	Solar Power and the Role of Subsidies
	Thu 04/13	Wind Power
	Tue 04/18	Fuel Efficiency and Conservation
	Thu 04/20	Energy Conservation in Architectural Planning
	Tue 04/25	<b>Midterm III (in class period)</b>
<i>COVID-19 Information</i>	<p>If you are experiencing any COVID-19 symptoms that are not clearly related to a pre-existing medical condition, do not come to class. Please see <a href="#">Student Protocols</a> for what to do if you experience symptoms and <a href="#">Potential Exposure to Coronavirus</a> for what to do if you have potentially been exposed to COVID-19. Consult the <a href="#">Undergraduate Excused Absence Policy</a> for information regarding excused absences due to medical reasons. Students are encouraged to visit the University's <a href="#">COVID-19</a> website for important information including diagnosis and symptom protocols, on-campus testing, and vaccine information. Please check the website throughout the semester for updates.</p> <p><u><a href="#">Vaccinations</a></u></p> <p>Data suggests that vaccination remains the best intervention for reliable</p>	

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protection against COVID-19. Students are asked to familiarize themselves with pertinent [vaccine information](#) and to consult with their health care provider. The University encourages all students, faculty, and staff to be vaccinated.

#### Reasonable Academic Adjustments/Auxiliary Aids

The University of Houston complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for disabled students. In accordance with Section 504 and ADA guidelines, UH strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please contact [the Justin Dart Jr. Student Accessibility Center](#).

#### Excused Absence Policy

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston [Undergraduate Excused Absence Policy](#) and [Graduate Excused Absence Policy](#) for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Under these policies, students with excused absences will be provided with an opportunity to make up any quiz, exam or other work that contributes to the course grade or a satisfactory alternative. Please read the full policy for details regarding reasons for excused absences, the approval process, and extended absences. Additional policies address absences related to [military service](#), [religious holy days](#), [pregnancy and related conditions](#), and [disability](#).

#### Recording of Class

Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the [Justin Dart, Jr. Student Accessibility Center](#). If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with *anyone* without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a referral to the Dean of Students Office and may result in disciplinary action.

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### Syllabus Changes

Due to the changing nature of the COVID-19 pandemic, please note that the instructor may need to make modifications to the course syllabus and may do so at any time. Notice of such changes will be announced as quickly as possible through an announcement in class and/or over email.

### UH Email

Please check and use your Cougarnet email for communications related to this course. To access this email, [login](#) to your Microsoft 365 account with your Cougarnet credentials.

### Academic Honesty Policy

High ethical standards are critical to the integrity of any institution, and bear directly on the ultimate value of conferred degrees. All UH community members are expected to contribute to an atmosphere of the highest possible ethical standards. Maintaining such an atmosphere requires that any instances of academic dishonesty be recognized and addressed. The [UH Academic Honesty Policy](#) is designed to handle those instances with fairness to all parties involved: the students, the instructors, and the University itself. All students and faculty of the University of Houston must be familiar with this policy.

### Title IX/Sexual Misconduct

Per the UHS Sexual Misconduct Policy, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and state law and must report incidents of sexual misconduct (sexual harassment, non-consensual sexual contact, sexual assault, sexual exploitation, sexual intimidation, intimate partner violence, or stalking) about which they become aware to the Title IX office. Please know there are places on campus where you can make a report in confidence. You can find more information about resources on the Title IX website at [uh.edu/equal-opportunity/title-ix-sexual-misconduct/resources/](https://uh.edu/equal-opportunity/title-ix-sexual-misconduct/resources/).

### Security Escorts and Cougar Ride

UHPD continually works with the University community to make the campus a safe place to learn, work, and live. Our Security escort service is designed for the community members who have safety concerns and would like to have a Security Officer walk with them, for their safety, as they make their way across campus. Based on availability either a UHPD Security Officer or Police Officer will escort students, faculty, and staff to locations beginning and ending on campus. If you feel that you need a Security Officer to walk with you for your safety please call [713-743-3333](tel:713-743-3333). Arrangements may be made for special needs. Parking and Transportation Services also offers a late-night, on-demand shuttle service called Cougar Ride that provides rides to and from all on-campus shuttle stops, as well as the MD Anderson Library, Cougar Village/Moody Towers and the UH Technology Bridge. Rides can be requested through the UH Go app. More information at [uh.edu/af-university-services/parking/cougar-ride/](https://uh.edu/af-university-services/parking/cougar-ride/).

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