SUST 370 ENERGY ENVIRONMENT & SOCIETY

*Winter 2023*

Instructor: Michael S. McGlade

Classroom: BELL 336

Class meets Tuesday 2:00-3:50 as a hybrid, attendance required

Office: BELL 211

Office Hours: M 4-6; T 1-2 W: 9:30-11:30

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**Description**: This course will examine fundamentals of energy studies, the historical linkages between energy conversions and societal development, the modern energy system, fossil fuel combustion and climate change, emerging solar-based energy systems and other alternative energy sources, and the political economy of energy use and energy transitions at various scales.

DEAR STUDENTS – AS PER OUR DISCUSSION ON THE FIRST AFTERNOON, THE BASIC READINGS OF SMIL AND KLEIN WILL PART OF THE COURSE, BUT THE REST OF THE MATERIAL FOR THE COURSE THAT YOU SEE IN THIS SYLLABUS AS OF JANUARY 10 IS SUBJECT TO CHANGE – PARTICULARLY DETAILS ABOUT A PROJECT AND WHETHER OR NOT THERE WILL BE A FINAL EXAM. THE FINAL AUTHORITY ABOUT WHAT WE WILL DO IN THIS COURSE BEYOND READING SMIL AND KLEIN WILL BE INFORMED BY WHAT YOU, THE STUDENTS, ARE INTERESTED IN DOING!

**Assigned Readings**:

-Vaclav Smil (2017). Energy: a Beginner’s Guide. OneWorld, (Second Ed.). IN BOOKSTORE

-Naomi Klein (2015). This Changes Everything: Capitalism vs. The Climate.  Simon & Schuster. IN BOOKSTORE

-Online readings and other activities are posted on next page of this syllabus, and are subject to change. Activities for each week will be posted by Monday on Canvas. Canvas is the final authority on what is to be done for each week; the activities listed in this syllabus are only a general and tentative guide.

Required purchase of an electricity use device for project:

# An electricity usage device is needed, and can be purchased at [Amazon](https://www.amazon.com/P3-P4400-Electricity-Usage-Monitor/dp/B00009MDBU/ref%3Dsr_1_3?ie=UTF8&qid=1546576115&sr=8-3&keywords=kill-a-watt+meter) . The unit you will need is: (P3 P4400 Kill A Watt Electricity Usage Monitor), OR Poniie PN2000 Plug-in Kilowatt Electricity Usage Monitor Electrical Power Consumption Watt Meter Tester w/ Extension Cord. Please see instructor if purchase of this would create a financial hardship.

**Required documentaries to be viewed:**

Students should budget up to $10 for documentaries that might be required viewing in the class. The first one, just so that you know, will be Chasing Coral (Netflix) to be viewed in week one.

**Course Outcomes:**

\* Analyze interrelationships between humans and the environment (Inquiry & Analysis)

\* Students understand climate change impacts, causes, and solutions, particularly those relating to energy technologies and systems

**Course Goals**

-Recognize the social and environmental significance of energy use and development.

-Analyze how environmental factors affect energy development and use.

-Assess the role of energy development and use in social and environmental change and transformation.

**Requirements:** Graded activities for the class include weekly quizzes, participation in forums, a final exam, and a project. Worksheets may also be assigned at instructor's discretion. No makeup quizzes will be given, though the lowest score will be dropped. Dropping the lowest score allows a student to completely miss a quiz without overall grade consequence. Please do not miss a quiz at your discretion, and then later have unforeseen circumstances prevent you from taking another one. If you miss a quiz and petition for a retake, I will refer you back to this syllabus. Open note quizzes will be over all the previous weeks' activities.

**Project**: A person energy assessment will be done by each student. The first part, an electricity worksheet, will be assigned week 2 or 3. Later, an energy assessment consisting of diet, transportation, and other activities will be combined with your electricity worksheet to form the basis for the final project.

**Grading:**

Approximate weighting of requirements: quizzes 40%, final exam 20%, final project 25%, discussion/ participation 15%. Grading scale: A 90-100, B 80-90, C 70-80, D 60-70, F <60

Any student needing an accommodation for any type of disability should talk me during office hours or e-mail me the first week of the course and should contact the Office of Disability Services (838-8250v/tty).

Regarding e-mail: I will check my e-mail daily for messages, except weekends.

**TENTATIVE COURSE OUTLINE\***

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|  | Topic(s) | Assigned Reading (always check Moodle for weekly specific questions and access) |
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| January 10 | intro concepts | Smil Chapter 1; <https://www.bloomberg.com/graphics/2015-whats-warming-the-world/>Frontline Documentary The Power of Big Oil Part 1: <https://www.pbs.org/wgbh/frontline/documentary/the-power-of-big-oil/>(view for general themes) |
| January 17**Quiz over material of last week** | energy in the biosphere; Intro. to political economy of climate change | Smil Chapter 2; Frontline Documentary The Power of Big Oil Part 2: <https://www.pbs.org/wgbh/frontline/documentary/the-power-of-big-oil/#video-2> basic energy notes;Klein, Introduction;Documentary TBA |
| January 24**Quiz over material of last week** | original solar-powered societies;electricity worksheet assigned; political economy of climate change  | Smil Chapter 3; To begin thinking about electricity worksheet and personal energy project in general, read [this](http://ngm.nationalgeographic.com/2009/03/energy-conservation/miller-text.html);Frontline Documentary The Power of Big Oil Part 3: <https://www.pbs.org/wgbh/frontline/documentary/the-power-of-big-oil/#video-3> Klein, Chapter 1 The Right is Right |
| Jan 31**Quiz over material of last week****electricity wksht.** | burning buried sunshine: fossil fuel man; hazards of fossil fuel extraction;modern society & energy | Smil Chapter 4;Klein Chapter 2 Hot Money;Frontline Documentary Deepwater Horizon |
| February 7**Quiz over material of last week** | energy in everyday life; simultaneous rise of dirtier fossil fuels and renewables | Smil Chapter 5; Klein Chapter 3 Public and Paid For;Fracking and/or Tar Sands documentary;TBA |
| February 14**Quiz over material of last week** | extractivismdemocracy, divestment, degradation, and hunger; | Smil Chapter 6;Klein, Chapter 5 Beyond Extractivism;TBA |
| February 21**Quiz over material of last week** | case for a modern solar-based society; popular resistance to new fossil fuel projects in the climate change era;what about nuclear? | Klein, Chapter 9 Blockadia;Klein, Chapter 10 Love Will Save this Place;Fukishima Documentary (PBS Frontline) |
|  |  |  |
| February 28**Quiz over material of last week** | colonialism and indigenous rights;solar, wind, storage, and electric autos; | Klein Chapter 11 You and What Army?TBA |
| March 7**project due** **Quiz over material of last week** | solar, wind, storage (con’t.)electric autos | Klein Chapter 12 Sharing the Sky;TBA |
| March 14 | anthropocene futures | TBA |
| March 21**Tuesday 2 p.m. final exam** | Comprehensive written exam will consist mostly of essay and short answer questions |  |

**\***reading list and all other details are subject to changes, including additions. This syllabus is a rough guide only to the readings and other activities.