**IF 401 – POLS 564**

***Energy: Supply Chain, Economics and Geopolitics***

**Course Syllabus**

**Spring 2021-2022**

**March 8th 2022, Version 2**

**Course Description**

This introductory course on energy is composed of two parts. The first part (taught by Dr. Kaya) considers the supply and distribution of energy. The second part (taught by Dr. Evin) builds on the first part discussion and focuses on the geopolitics of energy resources. The course aims to provide a big-picture view of energy supply chains to help students understand the interdependencies between technology, business, economics, environment, and international politics regarding energy-related issues. Scientific and technological aspects of energy, which are covered in the FENS elective courses ENS 207 and ENS 315, are not at the core of this course.

Note that the course has a separate code (POLS 564) for graduate students. The main deliverable of the graduate course is a research paper (which may be a chapter of the student’s master’s or Ph.D. thesis.) POLS 564 students will be provided with an up-to-date bibliographical guide, depending on their research topic.

**Instructors**

Dr. Murat Kaya, FENS G020, mkaya@sabanciuniv.edu, Office hours: Wed. 14:40-15:30 (by appointment)

Zoom link for lectures: <https://sabanciuniv.zoom.us/j/99287998738>

Dr. Ahmet Evin, FASS 2105, aevin@sabanciuniv.edu, Office hours: Tue 10:40-11:30 (or by appointment)

Zoom link for lectures: <https://sabanciuniv.zoom.us/j/5648896888>

**Teaching Assistants**

Abdalla Hroub (FENS), abdalla.hroub@sabanciuniv.edu

Samet Apaydın (FASS), samet.apaydin@sabanciuniv.edu

**Prerequisites**

None

**Resources**

There is no main textbook for the course. Instead, we will use various reading material including book chapters, white papers and reports. Below, we list a number of sample reading material and resources. Additional readings will be posted at SUCourse from time to time.

* (Entry level): US Energy Information Administration (EIA) – Energy Explained webpage.

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

* (Entry level): TOTAL Planete Energies

<https://www.planete-energies.com/en>

* IEA World Energy Outlook Reports

<https://www.iea.org/topics/world-energy-outlook>

* International Energy Agency (for a wide variety of free reports)

<https://www.iea.org/>

* International Energy Agency ETP Clean Energy Technology Guide

<https://www.iea.org/articles/etp-clean-energy-technology-guide>

* BP Statistical Review of World Energy Reports

[www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html](http://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html)

* BP Energy Outlook

[www.bp.com/en/global/corporate/energy-economics/energy-outlook.html](http://www.bp.com/en/global/corporate/energy-economics/energy-outlook.html)

* The World Nuclear Industry Status Reports

<https://www.worldnuclearreport.org/-The-Annual-Reports-.html>

* Renewables Global Status Reports

https://www.ren21.net/reports/global-status-report/

* International Renewable Energy Agency (IRENA)

<https://www.irena.org/publications>

* World Energy Council publications

www.worldenergy.org/publications/

* The Economist Journal: Articles and Special Reports on Energy

www.economist.com/topics/energy-industry

* McKinsey consulting:

[www.mckinsey.com/industries/electric-power-and-natural-gas/how-we-help-clients](http://www.mckinsey.com/industries/electric-power-and-natural-gas/how-we-help-clients)

* Deloitte consulting:

www2.deloitte.com/global/en/industries/energy-resources-industrials.html

* The Oxford Institute for Energy Studies

[www.oxfordenergy.org](http://www.oxfordenergy.org)

* Agora Energiewende

<https://www.agora-energiewende.de/en/publications>

* Wood Mackenzie

<https://www.woodmac.com/our-expertise/capabilities/power-and-renewables/>

* IICEC (Sabanci University Istanbul International Center for Energy and Climate)

iicec.sabanciuniv.edu/

* Shura Energy Transition Center

https://shura.org.tr/en/

* The Quest (Book): Energy, Security, and the Remaking of the Modern World. D. Yergin. 2012. (highly recommended. Turkish version title: Enerjinin Geleceği, 2 cilt)
* The Prize: The Epic Quest for Oil, Money and Power: D. Yergin. 1990. Turkish version title: Petrol. Iş Bankası Yayınları.
* The Boom (Book): How Fracking Ignited the American Energy Revolution and Changed the World. Russell Gold. 2015.
* Oil 101 (Book). Morgen Downey. 2009.
* Newsletter: “The Energy Mix” by IEA. To subscribe:

<https://www.iea.org/newsletter>

* The Global Politics of Energy. Campbell and Price
* Ahmet O. Evin, Energy and Turkey’s Neighborhood: Post Soviet Transformations and Transatlantic Interests
* Ahmet O. Evin, Turkey’s Energy Policy and the EU’s Energy Demand
* Jamestown Foundation, Eurasia Daily Monitor

[www.jamestown.org/programs/edm/](http://www.jamestown.org/programs/edm/)

**Podcasts**

Energy-related podcastsoffer a fun way to learn**.** The podcasts that I follow are:

* The Energy Transition Show with Chris Nelder (full episodes require payment)
* Redefining Energy
* The Energy Gang
* Columbia Energy Exchange
* The Interchange
* Energy Policy Now
* DNV GL Talks Energy
* Energy 360
* The Oxford Institute for Energy Studies

For a long list: <https://blog.feedspot.com/energy_podcasts/>

**Schedule**

|  |  |  |
| --- | --- | --- |
| **Week #** | **Week of** | **Topics** |
| 1 | **Feb 28th-****March 1st**  | **Introduction** (Dr. Kaya) * Course outline and policies
* Course content introduction

**Energy and Electricity** (Dr. Kaya) |
| 2 | **March** **7th -8th**  | **Energy supply: Oil-1** (Dr. Kaya) |
| 3 | **March****14th -15th**  | **Energy supply: Oil-2 & Natural Gas** (Dr. Kaya) |
| 4 | **March** **21st -22nd**  | **Energy supply: Coal & Nuclear** (Dr. Kaya) |
| 5 | **March** **28th-29th**  | **Energy supply: Renewables-1** (Dr. Kaya) |
| 6 | **April** **4th-5th**  | **Energy supply: Renewables-2** (Dr. Kaya) |
| 7 | **April** **11th-12th**  | **The Geopolitics of Energy: Yesterday and Today** (Dr. Evin)* Producer and consumer nations
* Cartels and interdependence
* Supply and demand security
* Energy as global, regional, and local commodity
* Changing concept of energy security
* The effect of renewables and electricity
* Changing patterns of demand and energy markets
 |
| 8 | **April** **18th-19th**  | **Changing Outlook on Energy** (Dr. Evin)* Paris Agreement
* The European Green Deal
* New resources and new technologies
* Green energy and sustainable fuels
* The future of natural gas
* Demand for electricity and power production
* Hydrocarbons and power
* Changes in the global flow of hydrocarbons
 |
| 9 | **April** **25th- 26th**  | **Case Study 1: The Ukrainian Crisis** (Dr. Evin)* The geopolitical situation of Ukraine
* Russian gas supplies and export routes
* Nordstream and Turkstream
* EU energy demand and energy security
* Russia’s energy markets and export dependence
* Natural gas: global or regional commodity?
 |
|  | **May** **2nd-3rd**  | **SEMESTER BREAK** |
| 10 | **May** **9th-10th** | **Case Study 2: China and Eurasian Geopolitics** (Dr. Evin)* Eurasian energy supplies and export markets
* New destinations for Russian oil and gas?
* Challenges facing the Caspian hydrocarbon reserves
* New pipelines and LNG competition
* China’s energy demand and supply sources
* China’s effect on regional and global markets
 |
| 11 | **May** **16th-17th** | **Case Studies 3 & 4: Energy and Development** (Dr. Evin)* India: increasing energy demand, sustained high-rate coal consumption, and challenges of financing cleaner energy and energy transition
* Africa: Why is a high economic growth rate expected of Africa which has the world’s lowest per capita GDP?
 |
| 12 | **May** **23rd-24th** | **Case Study 5: Turkey’s Energy Supply Security** (Dr. Evin)* High import dependence and geopolitical factors
* Russian, Azerbaijani and Iranian gas deliveries
* Southern Corridor and TANAP
* Turkey as a transit country: TANAP and Turkstream
* Resources and geopolitical competition
* The Black Sea, Balkans, and East Med
 |
| 13 | **May** **30th-31st** | **Responses to Climate Change** (Dr. Evin)* Energiewende
* Electrification and power production
* Are natural gas and nuclear coming back?
* Renewables
* Green and Blue Hydrogen
* Outlook for future fuel mix
 |
| 14 | **June****6th -7th**  | **Turkey’s Energy Outlook and Energy Sector*** Guest speakers from IICEC
 |

**Course Policies**

* Partial (not complete) lecture slide sets will be posted to SUCourse+.
* Students cannot share (or post to the Web) any document or recording of the course material with third parties.
* The instructors may have to modify the syllabus due to unforeseen reasons. Students are responsible for such modifications that will be announced in lectures and/or in SuCourse+.

**Grading for IF 401**

|  |  |
| --- | --- |
| Midterm Exam | 30% |
| Final Exam | 30% |
| Assignments | 16% |
| Top Hat questions in Dr. Kaya’s lectures | 12% |
| Top Hat questions in Dr. Evin’s lectures | 6 % |
| Quizzes (in Dr. Evin’s lectures) | 6 % |

**Grading for POLS 564 (That is, for graduate students)**

* In addition to taking the quizzes and the exams, answering to Top Hat questions and turning in the assignments, graduate students are also required to write a paper on a topic chosen in consultation with Dr. Evin.

**Top Hat Software**

* During his lectures, both instructors will ask quick questions (true/false, multiple choice etc.) using the Top Hat software. The students, either physically in class or following online, will need to respond to these quickly.
* The students shall familiarize themselves with the Top Hat software ([www.tophat.com](http://www.tophat.com)) if they have not used it previously. The Top Hat app should be installed on student smartphones/ tablets or it can be accessed via their laptop’s web browser.
* The join code required to enroll in IF 401 Top Hat page is 697690.
* Students need to register to Top Hat using their SU email address, true name & surname, and their five-digit student ID number.

**Notes on Grading**

* Dr. Evin will conduct quizzes in his lectures. The lowest graded quiz for each student will be dropped from consideration. Beyond this, there is no make-up opportunity for quizzes.
* The lowest 10% of the Top Hat scores for each student will be dropped from consideration, separately for both instructors. No other make-up opportunity exists for Top Hat questions.
* Late assignment submissions will not be accepted.
* Grading-related objections should be discussed with the TAs before bringing the issue to the instructors.
* The letter grade achieved in this course will be determined according to the weights outlined above; not according to what letter grade the student might need. If a student needs a high letter grade, he/she should perform accordingly. We will be happy to provide students with guidance and support for that during the semester.
* We do NOT discuss grading-related issues with students. We delete emails about letter grading without reading their contents.
* There will not be any extra opportunity, e.g., an extra project work or assignment, to increase an individual student’s course grade.

**Make-up Exam Policy**

* The midterm exam and the final exam each will have their own separate make-up exams.
* A student who wants to take a make-up exam needs to document the reason to miss the regular exam (such as sickness or official appointment) and inform the instructors immediately before/after missing the regular exam.

**Notes on Online Exams (in case they are conducted)**

* Students’ webcam and microphone should be on during the exam. Students should make sure that their webcam and microphone function properly.
* Students are expected to answer online exam questions **using their own sentences, based on the concepts discussed in our lectures**. Online exams are not research assignments. Students cannot use text from online or offline resources. Our lecture presentations or other course material can be used as references, but their text shall not be simply copied and pasted.
* Student answers will be checked against Plagiarism through TurnItIn software. Students submitting very similar answers to a question will raise suspicion. Such an act cannot be defended with statements such as "we studied and prepared answers to potential questions together". Each student is expected to answer in his/her own sentences. Answers that are irrelevant to our lecture discussions may also raise suspicion of web search during exam.
* Students whose online exam answers seem suspicious will need to attend to **recorded oral exams with the instructors.** The oral exam questions will not be limited only to the suspicious answers in exams, instructors may ask other questions to evaluate the students' understanding of course material. Depending on the oral exam performance, the student may directly get an F grade or be subjected to lesser penalties. The oral exam may also be applied to randomly chosen students.

**Attendance Policy**

* Attendance to lectures is mandatory and will be followed through in-class signature sheets, Zoom reports as well as Top Hat responses. A student that does not respond to Top Hat questions during a lecture will be assumed to be non-attending even though he/she may appear as present in Zoom meetings.
* Students do not receive course grade due to attendance.
* Attendance records start with the first lecture. This is also the case for students who add the course during the add-drop period.
* The attendance policy is as follows:
	+ missing up to 6 hours of lecture: OK, no need for explanation
	+ missing 7 or more hours: a direct effect on course grade
	+ missing a high number of lectures may cause failure in the course
* Students need to email the TAs if they will miss (or have missed) a class session with a valid reason. Non-attendance will still be counted, but having a valid reason helps in our evaluation in case the student misses 3+ lectures.