

## Econ 3495 (special topics): syllabus - tentative

### Energy, Environment and Sustainability: Energy Economics

**Lecture:** Tuesday/Thursday 12:30 – 1:45 PM (GENT 131)

**Instructor:** Harim Kim ([harim.kim@uconn.edu](mailto:harim.kim@uconn.edu))

#### Course Description

This course will explore both empirical and theoretical aspects of energy markets, providing students with insights into the pivotal role of energy markets in achieving environmental sustainability. The topics covered include energy supply and demand in both the power-generation sector and retail electricity sector, energy transition, renewable energy, electric vehicles, and the environmental impacts of energy use. The course also covers the supply and demand for fossil fuels (exhaustible resources), sustainable extraction and consumption of exhaustible resources. The aim of this course is to equip students with a good understanding of how energy markets operate so that they can develop skills to better assess the energy policies involving these energy sectors. Students will learn how to critically assess energy/environmental policy and understand the advantages and limitations of the currently proposed policies and regulations.

#### List of Topics:

- Climate change, environmental sustainability, design of international climate policies
- The Power Sector: operation of the electricity market, including the wholesale and retail electricity, environmental damage from electricity generation.
- Sustainable Electricity: renewable energy, clean energy transition in the power sector, the challenges renewable energy sources face, global effort to accelerate the clean energy transition.
- Sustainability in the automobile industry: automobile demand, fuel economy, electric vehicles (EV)
- Exhaustible resource: optimal extraction of fossil fuels (oil, natural gas, coal), global demand and supply of fossil fuel, environmental impact of fossil fuel
- Sustainable management of exhaustible resources
- Global/US Energy policy and environmental regulations

#### Readings

No textbooks are required; papers and additional readings will be uploaded throughout the course.

#### Grading

Presentation (30%) / Problem Sets (30%) / Final (40%)