



## STUDY PROGRAMME

European Interdisciplinary Studies, Natolin campus (Advanced Academic Master)

## YEAR

2023-2024

## COURSE TITLE

**Energy in a Globalised World: Economics, Politics and Policies**

## SEMESTER

1

## COURSE PROFESSOR(S)

HENDERSON James

## ACADEMIC ASSISTANT(S)

PASTOR VIDAL Pablo

## COURSE TYPE

Core Course

## MAJOR(S)

Not applicable

## ECTS CREDITS

4

## TEACHING HOURS

20

## INDIVIDUAL & GROUP STUDY TIME

80

## TUTORIAL(S)

## COEFFICIENT

1

## LANGUAGE(S)

EN

## COURSE OBJECTIVE

The course will provide a broad understanding of the global energy economy and the challenges of the energy transition. It will also offer an understanding of the geopolitical implications for different states and governments as they adjust their long-term strategies as producers or consumers of hydrocarbons, resulting in changes in questions over energy security. Students will get a sense of how companies are also adapting their strategies, with an opportunity to get proactively involved in a discussion over various case studies. They will also gain a more detailed understanding of how to create and use a discounted cash flow model to make strategic investment decisions. Finally, they will gain the ability to discuss the major assumptions and assess various future scenarios for strategic planning purposes, in order to understand how company managements make key decisions.

## COURSE LEARNING OUTCOMES

By the end of the course, students should have developed the following:

- Understanding of the key factors driving the global energy economy
- Knowledge of key strategy drivers for countries and companies involved in the energy economy
- Understanding of the impact of the energy transition
- Ability to create a cashflow model and understand its workings
- Ability to use the results of a cashflow model to make investment decisions
- Understanding of how companies make strategic decisions and how they interact with governments to resolve key issues
- Understanding of political drivers in the energy sector and how governments respond to external and internal pressures

## RECOMMENDED PREPARATION

- Energy Institute Statistical Review of World Energy and associated speeches, available at <https://www.energyinst.org/statistical-review>
- BP Energy Outlook, available at <https://www.bp.com/en/global/corporate/energy-economics/energy-outlook.html>
- ExxonMobil Energy Outlook, available at <https://corporate.exxonmobil.com/what-we-do/energy-supply/outlook-for-energy>
- Overview of IEA's World Energy Outlook, available at <https://www.iea.org/topics/world-energy-outlook>
- Global Energy: Issues, Potentials and Policy Implications, edited by Ekins, Bradshaw and Watson, Oxford University Press, 2015.
- Handbook of the International Political Economy of Energy and Natural Resources, edited by Goldthau, Keating and Kuzemko, Edward Elgar, 2018.
- Basic cash flow modelling techniques. See <https://corporatefinanceinstitute.com/resources/knowledge/valuation/dcf-formula-guide/> and <https://trainingnyc.com/learn/financial-modeling/dcf-modeling> as examples.
- Understand basic use of an Excel spreadsheet. See <https://www.youtube.com/watch?v=rwbho0CgEAE> for a good beginners tutorial.

## TEACHING METHOD(S)

All lectures will be on-site lectures using slides and an Excel spreadsheet to discuss and create a DCF model (knowledge of Excel is important)!

## ASSESSMENT METHOD AND CRITERIA

This course will be assessed based on:

- Academic paper/essay: 2,200-2,400 words (including footnotes but excluding bibliography) on the topics discussed in lectures 1-5 (50% of the final mark).
- Final exam: Digital, written, open-book, on-site exam (2h) on the work discussed in lectures 6-10. Students will be asked to fill out Excel models, generate economic results, and provide analyses of them. The use of the Internet is not allowed (50% of the final mark).

The College of Europe reserves the right to change the delivery and assessment of the course in case of circumstances beyond the reasonable control of the College (force majeure). Any communication from the campus administration in this regard takes precedence over the information provided in this ECTS card.

Retake examinations, i.e. exams passed in the second examination session, will have the same format as those taken during the first exam session. The only exception concerns oral exams, which are replaced in the second exam session by written exams. When a student takes an examination during the second session, the final mark for the course is based solely on the result of the retake examination. No other element of evaluation which would have been taken into consideration in the calculation of the final mark during the first examination session will be considered in the second session.

## COURSE CONTENTS

**Lectures 1-5** will be in person and last a maximum of 2 hours each. The topics to be covered will include:

- Discussion of current trends in the global energy market, including a short-term focus on the impact of the COVID-19 pandemic and the Russian war in Ukraine.

- Discussion of the impact of the energy transition, its major drivers, and its impact on traditional energy sectors such as oil and gas. A particular focus is on the electricity sector and the impact of renewable energy.
- State actors and the impact of geopolitics in the energy sector. Detailed discussion of developments in the US, Russia, the Middle East, and China and their impact on the global energy economy and global geopolitics.
- Key energy companies and their developing strategies. How are International Oil Companies, National Oil Companies, and smaller players adapting to the energy transition? Is there a future for multinational oil companies and if not what will replace them? How are electricity companies developing and what companies are emerging with new technologies for the energy transition?

**Lectures 6-10** will be in person and involve a more detailed look at strategic decision-making in energy companies. We will look at how investment decisions are made in the gas and electricity sectors, basing our work on Excel spreadsheet models which we will build in class. We will examine the key assumptions needed to build an investment case for energy assets, build a discounted cashflow model and then analyse and assess the results under various scenarios.

Students will build their own Excel models, based on a template provided by the professor, and will work in tandem with the teacher to insert key assumptions and generate results. The pace of the lectures will be slow enough to allow everyone to complete the work, but some prior knowledge of Excel is needed. The teaching in class will prepare the students for the examination, which will involve inserting assumptions into a cashflow model and drawing conclusions from the results, as if for presentation to a senior management team.

#### **COURSE MATERIALS (readings and other learning resources/tools)**

See above in recommended preparation. Access to Excel spreadsheet (n.b. Microsoft Excel needed, not an Apple alternative).