SE-805-EC1 **ENERGY ECONOMICS** **6 ECTS**

Year of study: First year MSc.
Semester: Fall.
Level of course: 4. Second cycle, introductory.
Type of course: *Taught in the Iceland School of Energy.* Core for MSc Energy Engineering, and for students enrolled in the Iceland School of Energy. Elective for other MSc programs in engineering.
Prerequisites: No prerequisites.
Schedule: Runs for 12 weeks - 5 teaching hours a week.
Supervisor: Juliet Newson.
Lecturer: Jónas Hlynur Hallgrímsson.

Learning outcome: The objective of this course is to introduce fundamental concepts of energy economics. At the end of the course students should be familiar with topics related to energy demand, energy supply, energy prices, environmental consequences of energy consumption and production, and various public policies affecting energy demand, supply, prices, environmental effects, and renewable energy. Basic economic modelling and calculations will be presented in class when appropriate.

Knowledge:

- Basic principles of energy economics.
- Understanding of a broad overview of a variety of theoretical and empirical topics related to energy economics
- Apply methods from mathematics and economics science to analyze complex systems in energy systems or their peripheries.
- Analyze economics of energy project
- Analyze and communicate experimental, numerical and statistical data.
- Apply standard scientific principles to develop analytical solutions to a range of practical problems.

Skills:

- Apply methods from economics science to analyze complex systems in energy systems or their peripheries.
- Analyze economics of energy projects, using current best-practice methods.
- Apply research methodology and critical thinking, including the fundamentals of scientific writing, literature search, evaluate a scientific paper, and be aware of research ethics.
- Give an oral energy economics presentation and write a scholarly research report.

Competence:

- Apply analytical skills and methodologies to recognize, analyze, synthesize and implement operational solutions to energy related problems.
- Apply standard economics principles to develop analytical solutions to a range of energy problems
- Interpret and apply existing economic theories, models, methods and results, both qualitatively and quantitatively, within the field of energy economics.

Content: This is a 12-week course that focuses on the specifics of energy economics. The course will give students a broad overview of a variety of theoretical and empirical topics related to energy economics.

Reading material: There is no official textbook for this course but reading material will be provided on a weekly basis and based on official reports and academic research related to energy economics.

Teaching and learning activities: Lectures, homework sets, debates, and student presentations.

Assessment methods: Student presentation (15%), homework sets (10%), midterm (20%) and final written exam (55%).

Language of instruction: English.

All course descriptions may be subject to change. Revised information on the course schedule, reading material, teaching and learning activities, and assessment methods will be introduced in the learning management system Canvas at the beginning of the semester.

Updated May 15th 2020