SE-801-ES1 **ENERGY FIELD SCHOOL** **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, MSc Electrical Power Engineering, and for students enrolled in the Iceland School of Energy. Not open for students of other programs in engineering.
Prerequisites: None.
Schedule: Taught all day, every day for 3 weeks in late July and early August.
Supervisor: Juliet Newson.
Lecturer: David Christian Finger.

Learning outcome: Upon completion of this course students should have the ability to:
Knowledge:

- Distinguish the primary environmental impacts due to the energy industry, and how that impact is assessed and mitigated.
- Recognize how the interplay of technical, environmental and socioeconomic constraints shapes the development and requirements of the energy sector.
- Identify the general characteristics of renewable energy systems and methods of analyzing them.

Skills:

- Apply scientific methods to complex projects
- Has the ability to assess energy projects
- Can identify the key factors in a given situation, and develop an approach to solution.

Competence:

- Independently build an overview of a specific renewable energy system
- Collaborate as a contributing team member on a renewable energy research project

Content:
The course offers an introduction to:

- Energy trends
- Geothermal energy
- Sustainability
- Circular Economy
- Hydropower
- Wind power
- Power systems
- Energy economics

Reading material: David J.C. MacKay, *Sustainable Energy - Without the Hot Air*.
Teaching and learning activities: Site visits to power plants and areas of environmental and geoscientific interest. Field trip with overnight stay.
Assessment methods: Will be announced in the learning management system (Canvas).
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.