



Institut national  
de la recherche  
scientifique

## **Master's in Earth Sciences (Dual-Degree Program in Sustainable Energy)**

### **Program presentation**

In Iceland, geothermal energy is used to produce both electricity and heat. Expertise has been developed in Quebec on geothermal heat pumps used for heating and cooling buildings. In Iceland, the heat source is close to the surface due to the island's unique geology. The evolution of these technologies could enable Quebec to use its deep geothermal energy resources for heating buildings in communities that rely on thermal power plants, giving those communities access to reliable energy and reducing their dependence on fossil fuels.

The Master's in Earth Sciences Dual-Degree Program in Sustainable Energy provides students with advanced knowledge in the fields of geology and geological engineering. The program combines teaching and research activities from the [Master's in Earth Sciences](#) program offered by INRS, Canada, and the [Master's in Sustainable Energy](#) program offered by Reykjavik University, Iceland.

Students will benefit from co-supervision of their research project by teams in Iceland and Canada. The equivalent of one year is spent in each of the partner institutions. Students will obtain a diploma from each institution.

In addition to gaining experience abroad, students will complete four research courses on a topic jointly suggested by teams in Iceland and Canada. These research activities will enable the students to actively contribute to the advancement of knowledge and to acquire specialized skills in the field.

### **Employment opportunities**

- government agencies
- consulting engineering firms
- educational institutions

### **Objectives**

Program objectives and benefits:

- Contribute to scientific advances in the field of sustainable energy
- Follow a university curriculum essentially consisting of research activities
- Expand career opportunities
- Experience studying abroad
- Benefit from the quality of teaching, expertise, and excellence of the research infrastructure of the two partner universities
- Receive scholarships or funding in both countries

## **Admission requirements**

Candidates who want to take the dual-degree program have to apply for admission at both INRS and Reykjavik University.

### **INRS**

Admission requirements for the [Master's in Earth Sciences](#) (dual-degree program in sustainable energy):

- Bachelor's degree or equivalent in Earth Sciences, Geology, Geological Engineering, or a related field.
- Cumulative grade point average of at least 3.0 (out of 4.3) or equivalent.
- Sufficient knowledge of spoken and written French and English.
- Good recommendations from referees.
- Agreement by a professor from each partner institution to supervise the student's thesis.
- Offer of admission from the partner institution, Reykjavik University.

### **Reykjavik University**

Consult the official description of the [Master's in Sustainable Energy](#) of Reykjavik University for the admission requirements in this program.

### **Funding rules and health insurance**

[Tuition fees and other expenses](#) must be paid to the student's home institution. This payment is made quarterly in Canada. Funding rules are based on the laws and regulations in each country and institution. All costs, including travel and living expenses (accommodation and food), are paid by the student, who must comply with the laws and regulations in the host country with respect to study permit, visa, and especially health insurance coverage.

## **Courses**

### **Program structure**

The dual-degree program entails 45 Canadian credits or 120 ECTS Icelandic credits. Two streams are offered.

### **Stream 1: Iceland**

Icelandic students begin the program in Canada and finish in Iceland (3 semesters in each institution).

### **Stream 2: Canada**

Canadian students begin the program in Iceland and finish in Canada (3 semesters in each institution).

## **STREAM 1: Canadian students**

### Semester 1: Iceland (July to August)

SE-801-ES1 Introductory Field Trip / Summer school (2 credits – 6 ECTS)

### Semester 2: Iceland (August-December)

SE-805-EC1 Energy Economics 1 (2 credits – 6 ECTS)

SE-802-ET1 Energy Technology (2 credits – 6 ECTS)

SE-806-EI1 Environmental Impact Assessment (2 credits – 6 ECTS)

SE-804-ER1 Iceland Energy Resources (1 credits – 3 ECTS)

### Semester 3: Iceland (January-August)

Elective course at RU (2 credits – 6 ECTS)

Geothermal Reservoir Modelling (1 credit – 3 ECTS)

Research Project 1 (10 credits – 24 ECTS)

### Semester 4: Canada (September-December)

GEO1503 Devis de recherche (1 credits).

One elective course from the INRS [Master of Earth Sciences](#) program (GEO series) (3 credits – 9 ECTS)

Research Project 2 (4 credits – 10 ECTS)

### Semester 5: Canada (January-April)

GEO9901 Séminaire d'avancement des travaux de maîtrise (1 credits – 3 ECTS)

Research Project 3 (7 credits – 18 ECTS)

Semester 6: Canada (May-June)

Research Project 4 (7 credits – 17 ECTS)

**STREAM 2: Icelandic students**

Semester 1: Canada (September-December)

Two elective courses from the INRS [Master of Earth Sciences](#) program (GEO series)  
(3 credits – 9 ECTS each)

Semester 2: Canada (January-April)

One elective course from the INRS [Master of Earth Sciences](#) program (GEO series)  
(3 credits – 9 ECTS)

Semester 3: Canada (May-August)

Research Project 1 (10 credits – 24 ECTS)

Semester 4: Iceland (mid-July-summer school - December)

SE-802-ET1 Energy Technology (2 credits – 6 ECTS)

OU

SE-801-ES1 Introductory Field Trip / Summer school (2 credits – 6 ECTS)

Research Proposal (2 credits – 6 ECTS)

Research Project 2 (4 credits – 10 ECTS)

Semester 5: Iceland (January-April)

Research Seminar (1 credit – 3 ECTS)

Research Project 3 (7 credits – 18 ECTS)

Semester 6: Iceland (May-August)

Research Project 4 (7 credits – 17 ECTS)

## **Program summary**

<b>Degrees</b> MSc from INRS : <a href="#">Master's in Earth Sciences</a> MSc from Reykjavik University : <a href="#">Master's in Sustainable Energy</a>
<b>Credits</b> 45 credits in Canada (120 ECTS credits in Iceland)
<b>Study conditions</b> Program hosted in Canada and Iceland
<b>Student status</b> Full-time program
<b>Tuition fees</b> Tuition fees depend on the student country of origin and study program <a href="#">For more information</a>
<b>Admission requirements</b> Admission to the program is conditional on agreement of a professor to supervise the student's thesis. <a href="#">More information on how to apply</a>
<b>Admission deadlines</b> Fall: March 30 <sup>th</sup> Summer: March 1 <sup>st</sup> <a href="#">See academic calendar</a>
<b>Teaching language</b> Courses are given in French at INRS. Language courses are available for students who do not speak French. Courses are given in English at Reykjavik University.
<b>Equivalence of diplomas</b> If your degree has been obtained outside Canada or in a Canadian province outside Quebec, please check your <a href="#">degree equivalency</a> before applying for a study program at INRS.
<b>Program leader</b> <a href="#">Erwan Gloaquen</a>
<b>Questions on this program and general inquiries</b> <a href="mailto:programme.ete@inrs.ca">programme.ete@inrs.ca</a>