

# **Appendix A: Teaching outcomes of the Msc. Energy and Environmental Sciences (EES) (art. 1.3)**

## **Learning Outcomes MSc Energy and Environmental Sciences (EES)**

### **INTRODUCTION**

**The first part of the learning outcomes is specific and concerns knowledge and skills. Most of this is part of the obligatory courses for all MSc EES students (Base programme and Advanced Statistics course).**

**The second part is more general: what is our master capable of (doing independent research). This part is mostly covered by the research projects.**

**Also see the table at the bottom.**

### **General Aims**

**The general aims of the master's degree program EES are:**

- to prepare students for an independent professional career; in this context this means being able to carry out fundamental or applied scientific research, as well as applying state of the art scientific knowledge in a wide variety of practical situations;
- to provide a learning environment for enabling students to develop skills, knowledge and insight in a specialization area of the field of study. to have students develop the ability to clearly and concisely communicate the acquired knowledge to others;
- to let students develop the ability to critically reflect, taking into account social and ethical aspects.

### **OBJECTIVES**

The aims of the program result in the following objectives:

#### **Specific academic knowledge and skills for the master's degree program EES.**

The graduate is able:

- a) to analyze:
  1. Energy and resource use in societies and ecosystems and their impacts on the climate/planet;
  2. (Dis)advantages of the use of various energy sources using the people, planet, profit approach;
  3. Current and future developments in the energy/environmental research field;
  4. Policy developments in the energy/environment field.
- b) to assess whether changes in systems will affect energy and resource use and their consequences.
- c) to discuss the role of other academic (non-natural science) disciplines in the energy and/or environmental research field.
- d) to distinguish career perspectives within the energy/ environmental field.



**Appendix B: Specializations of the degree programme (art. 2.2)****Appendix C: Content of the degree programme (art. 2.3)+****Appendix E: compulsory order of examinations (art. 3.2)****1. Msc Energy and Environmental Sciences:**

module	ECTS	entry requirements	assessment	practical
Impacts of Energy and Material Systems (IEMS)	5	-	exam, assignments, computerlab *	assignments, computerlab
Functioning and Productivity of Ecosystems (FPE)	5	-	exam, assignments, computerlab *	assignments, computerlab
Society and Sustainability (S&S)	5	IEMS, FPE	exam, assignments, computerlab *	assignments, computerlab
Systems Integration and Sustainability (SIS)	5	IEMS, FPE	assignments, computerlab *	assignments, computerlab
Advanced Statistics	5		Assignments, written report	computerlab
Specialisation/Optional modules**	35	see OCASYS	see OCASYS	see OCASYS
Training Thesis***	30	IEMS, FPE, S&S, SIS, specialisation modules	plan, process, presentation, written report	research
Master Thesis***	30	IEMS, FPE, S&S, SIS, specialisation and optional courses, training thesis	plan, process, presentation, written report	research

\* all separate parts that are assessed have to be passed.

\*\* depending on the student's background and the topic of the training and/or master thesis more courses can be obligatory (and less optional), the Board of Examiners will decide on this.

## **Appendix D: Specialisation and Optional modules of the degree programme (art. 2.4)**

The Specialisation and Optional modules comprise 35 EC.

Depending on the student's background and the topic of the training and/or master thesis a package of specialisation courses and optional courses is composed as part of the MSc EES programme. The contents of these specialisation and optional courses are discussed with a senior staff member (tutor) and have to be approved by the tutor and the Board of Examiners. The Board of Examiners has to approve the individual package of specialisation and optional courses.

## **Appendix F Admission requirements (art. 4.1; 4.2)**

### **Requirements for admission to the Msc Energy and Environmental Sciences:**

Holders of the following Bachelor's degrees from the University of Groningen are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Energy and Environmental Sciences on that basis:

- a Bachelor's degree in Biology
- a Bachelor's degree in Life Science and Technology
- a Bachelor's degree in Pharmacy
- a Bachelor's degree in Pharmaceutical Sciences
- a Bachelor's degree in Chemistry
- a Bachelor's degree in Chemical Engineering
- a Bachelor's degree in Physics
- a Bachelor's degree in Applied Physics
- a Bachelor's degree in Astronomy
- a Bachelor's degree in Mathematics
- a Bachelor's degree in Applied Mathematics
- a Bachelor's degree in Computing Science
- a Bachelor's degree in Industrial Engineering and Management
- a Bachelor's degree in Artificial Intelligence