



Appendices Teaching and Examination Regulations MSc Energy and Environmental Sciences 2017-2018

Appendix I: Learning 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:

Sa) 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.

Sb) to assess whether changes in systems will affect energy and resource use and their consequences.

Sc) to discuss the role of other academic (non-natural science) disciplines in the energy and/or environmental research field.



Sd) to distinguish career perspectives within the energy/ environmental field.

General academic skills for the master's degree program EES

The graduate is able:

G1. to write a review about literature in relevant subfields.

G2. to effectively gain information within the field of Energy and Environmental Sciences (EES).

G3. to formulate a research plan based on a general problem description in a subfield of EES.

G4. to analyze and assess state-of-the-art research information and draw conclusions from these results.

G5. to collaborate in a multidisciplinary team.

G6. to communicate his/her findings to the scientific community (oral presentation, written reports and debates).

G7. to design, conduct and evaluate experiments/scenarios/other scientific methods.

G8. to evaluate his/her own results and conclusions compared to knowledge in the literature.

G9. to function scientifically in a situation in which knowledge and research skills within the field of EES are required.

G10. to consider its own position in society to come to a sensible choice of profession.

outcomes														
	specific				general									
	Sa	Sb	Sc	Sd	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
Courses														
IEMS	X	X							X					
SUE	X	X				X			X	X				
S&S	X	X	X						X	X			X	
SIS	X	X			X				X				X	
DASM								X			X			
MEMS	X	X	X		X	X	X	X	X	X	X	X	X	
Global Change	X	X	X		X	X		X		X		X		
Thesis 1 (variant 1)				X	X	X	X	X		X	X	X	X	X
Thesis 2 (variant 1)				X	X	X	X	X	X	X	X	X	X	X
Thesis 1 (variant 2)				X	X	X	X	X		X	X	X	X	X
Internship (variant 2)				X	X	X		X	X	X		X	X	X



Appendix II: Tracks/Specializations of the degree programme (art. 2.2)

Appendix III: Content of the degree programme (art. 2.3)

Appendix IV: Electives (art. 2.4)

Appendix V: Entry requirements and compulsory order of examinations (art. 3.4)

Msc Energy and Environmental Sciences:

module	ECTS	entry requirements	assessment	practical
Impacts of Energy and Material Systems (IEMS)	5	-	see OCASYS	see OCASYS
Sustainable Use of Ecosystems (SUE)	5	-	see OCASYS	see OCASYS
Society and Sustainability (S&S)	5		see OCASYS	see OCASYS
Systems Integration and Sustainability (SIS)	5		see OCASYS	see OCASYS
Data analysis and statistical methods (DASM)	5		see OCASYS	see OCASYS
Specialisation/Optional modules**	35	see OCASYS	see OCASYS	see OCASYS
1 st Research Project (variant 1)	30	IEMS, SUE, S&S, SIS, DASM, specialisation modules	plan, process, presentation, written report	Research
2 nd Research Project (variant 1)	30	IEMS, SUE, S&S, SIS, DASM, specialisation and optional courses, 1 st Research Project	plan, process, presentation, written report	Research
Research Project (variant 2)	40	IEMS, SUE, S&S, SIS, DASM, specialisation modules	plan, process, presentation, written report	Research
Internship (variant 2)	20	IEMS, SUE, S&S, SIS, DASM, specialisation and optional courses, 1 st Research Project	plan, process, presentation, written report	Project

** 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.

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 VI: Admission to the degree programme and different tracks/specializations (art. 5.1; 5.2)

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

Appendix VII Transitional provisions (art 7.1)

None

Appendix VIII

Application deadlines for admission (art. 5.6.1)

Deadline of Application	Non-EU students	EU students
Nanoscience	February 1st 2018	May 1st 2018
Behavioural and Cognitive Neurosciences	May 1st 2018	May 1st 2018
Biomolecular Sciences (topprogramme)	May 1st 2018	May 1st 2018
Evolutionary Biology (topprogramme)	May 1st 2018	May 1st 2018
Remaining FSE Masters	May 1st 2018	May 1st 2018

Decision deadlines (art. 5.6.3)

Deadline of Decision	Non-EU students	EU students
Nanoscience	June 1st 2018	June 1st 2018
Behavioural and Cognitive Neurosciences	June 1st 2018	June 1st 2018
Biomolecular Sciences (topprogramme)	June 1st 2018	June 1st 2018
Evolutionary Biology (topprogramme)	June 1st 2018	June 1st 2018
Remaining FSE Masters	November 1st 2018	November 1st 2018