

Programme specification

(Notes on how to complete this template are provide in Annexe 3)

1. Overview/ factual information

Programme/award title(s)	<ul style="list-style-type: none"> a. BSc (Honors) – Environmental Studies b. BSc – Environmental Studies c. Diploma in Higher Education – Environmental Studies d. Certificate in Higher Education BSc (Honors) – Environmental Studies
Teaching Institution	The American College of Greece
Awarding Institution	The Open University (OU)
Date of first OU validation	March 2011
Date of latest OU (re)validation	May 2022
Next revalidation	May 2027
Credit points for the award	365
UCAS Code	
HECoS Code	
LDCS Code (FE Colleges)	None
Programme start date and cycle of starts if appropriate.	September 2011 September 2016 (after first revalidation) September 2022 (after second revalidation)
Underpinning QAA subject benchmark(s)	Environmental Studies
Other external and internal reference points used to inform programme outcomes. For apprenticeships, the standard or framework against which it will be delivered.	None
Professional/statutory recognition	
For apprenticeships fully or partially integrated Assessment.	
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face) Apprenticeship	

Duration of the programme for each mode of study	FT – 4 years
Dual accreditation (if applicable)	NECHE Accredited
Date of production/revision of this specification	May 2022

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in student module guide(s) and the students handbook.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.

2.1 Educational aims and objectives

Mission

In congruence with the mission of the College, the mission of the Environmental Studies program is to provide students with the theoretical knowledge and the skills they will need to enter the professional world, become informed and responsible citizens and undertake postgraduate studies in the field.

Educational Aims and Objectives

The overall educational aims of the Environmental Studies program are to:

- Provide students with an understanding of the structure and functioning of natural systems and of their role in supporting life and human activities.
- Provide students with an understanding of the close interconnections between human societies and natural systems, of the anthropogenic causes of environmental problems including climate change and of the social, economic, political and health implications of human interactions with the environment.
- Provide students the necessary background for fully understanding the principles and dimensions of sustainability and the ability to apply them in addressing environmental issues in an integrated manner
- Provide students with an understanding of the complex nature of environmental issues and of the need for an interdisciplinary approach in studying and addressing them, drawing from both the natural and the social sciences.
- Develop students' intellectual (cognitive), practical, technical and transferable skills that will enable them to effectively and responsibly address environmental challenges in an increasingly complex world and to succeed as professionals.
- Develop students' intellectual (cognitive), practical and transferable skills necessary for postgraduate study.

Learning Outcomes

A. Knowledge and Understanding

Students gradually build up knowledge and understanding

1. of core concepts, principles and tools in natural sciences, of the structure and functioning of natural systems, the complexity and interconnections of the Earth's systems and processes and of their influence on human activities.

2. of the role of social sciences in analysing and addressing environmental problems and of the social, economic, political, health and ecological implications of human interactions with the environment.
3. of human responses to contemporary environmental problems such as, climate change, natural resource use, human population concerns and environmental degradation, through the development of environmental policy and law and environmental management, as well as of the importance of temporal and spatial scales in considering the environmental impact of human decisions in different environmental fields.
4. of the concepts of sustainability and sustainable development, their different dimensions and their applications in addressing environmental issues in an integrated manner.
5. of a) basic tools in mathematics and statistics, as well as of quantitative techniques and data processing methods including Geographic Information Systems (GIS) techniques and b) of tools, techniques and research methods used to study and address environmental issues at an advanced level.
6. in more specialized fields of environmental studies (such as management and conservation of natural resources, policy and environmental management of corporations)

B. Cognitive Skills

Progressive built up of cognitive skills, namely reasoning, perception, and intuition.

Students learn to:

1. Recognize the moral and ethical issues of investigations, appreciate the need for professional codes of conduct and undertake a reasoned moral assessment of actions/persons/business practices.
2. Collect and analyse data and information on environmental issues using a range of techniques appropriate to the subject.
3. Critically evaluate the reliability, validity and significance of data and information collected and the evidence provided to support conclusions.
4. Categorize ideas, data and information, reformat and transform them towards a given purpose and design solutions.
5. Identify key elements of environmental problems and apply appropriate interdisciplinary knowledge and skills to their solution.

C. Practical and Professional Skills

Students acquire practical and professional skills that include the ability to:

1. Describe and record materials in the field and laboratory and to interpret practical results in a logical manner.
2. Use appropriate laboratory and field equipment competently and safely
3. Select and apply a range of methods, including spatial technologies, to study and address environmental problems
4. Plan, conduct and present an independent project effectively and appropriately with reliance on guidance, to relate investigations to prior work and to reference appropriately.

D. Key/Transferable Skills

Students acquire key/transferable skills that include the ability to:

1. manage, select and process information from a variety of sources to support findings and hypotheses, develop a critical approach to academic literature and other sources of information and develop the ability to perform independent research (using simple to more complex research strategies) in different environmental studies fields.
2. a) communicate effectively to a variety of audiences in written, graphical and verbal forms, to engage in debate in a professional manner and b) produce detailed and coherent project reports.
3. interact effectively within a team/learning group, giving and receiving information and ideas and modifying responses when appropriate.
4. acquire, process, interpret and present data using appropriate qualitative and quantitative techniques including use of information technology and the internet, mathematics, statistics and GIS.
5. conduct independent study and self-evaluation

2.2 Relationship to other programmes and awards

(Where the award is part of a hierarchy of awards/programmes, this section describes the articulation between them, opportunities for progression upon completion of the programme, and arrangements for bridging modules or induction)

This programme specification is part of a US bachelor's degree programme that consists of 121 US credits, comprising 43 credits of General Education credits, 71 credits of Concentration, and 7 credits of Electives.

Liberal Education (distributive requirements)	43
Core modules	
Academic Writing	6
Integrated Academic Writing, Research and Ethics.	3
Public speaking or professional communication or equivalent.	3
Mathematics (basic statistics, college algebra, OR higher)	3
Introduction to information systems or equivalent computer literacy course.	3
Any Natural Sciences course with a lab	4
(selected from: biology, chemistry, environmental studies, geology, oceanography, physical science and physics)	
Liberal Education Electives	
One course in Natural Sciences (without a Lab)/STEM	3
One course in Fine and Performing Arts.	3
Three courses in Social and Behavioural Sciences	9
(Selected from at least two of the following: anthropology, economics, political science, psychology, sociology)	
Two courses in Humanities	6
(Selected from at least two of the following: archaeology, art history, history, literature, classical literature, music, philosophy, theatre history)	

LIBERAL EDUCATION-MISSION

A vital component of the undergraduate experience, the Liberal Education program prepares students to become globally engaged twenty-first century citizens with the intellectual habits, practical skills, and socio-cultural sensibilities needed in a rapidly changing world. Liberal Education helps students develop essential competencies for success across disciplines and in life beyond college by cultivating open-mindedness, tolerance, problem-solving ability, intellectual curiosity and creativity. It also promotes thoughtful self-expression, an ethical compass, and responsibility to the local and global communities.

COMPETENCIES AND LEARNING OUTCOMES

1. Communication and Information Literacy

- 1.1 Demonstrate effective verbal (writing, speaking and listening) and nonverbal communication skills.
- 1.2 Retrieve, critically evaluate and synthesize information adhering to legal and ethical practices.
- 1.3 Show knowledge of the stages needed from draft to final text or presentation using proper documentation and citation.
- 1.4 Demonstrate a mastery of the basic skills in information technology.

2. Social Responsibility and Civic Engagement

- 2.1 Discuss issues of identity and inclusion.
- 2.2 Explain different dimensions of sustainability and how it relates to one's discipline.
- 2.3 Discuss ways of responsible civic engagement.
- 2.4 Engage in activities that serve the needs of the local and global community.
- 2.5 Evaluate elements of Greek society that reflect Greek cultural values and the desirability to maintain or change such values so that Greek society can succeed in a new interdependent environment without losing its identity.

3. Cultural and Global Perspectives

- 3.1 Discuss world history or sociocultural traditions from different perspectives.
- 3.2 Describe diverse worldviews, ideas, institutions or artistic expressions manifest in varied contexts globally.
- 3.3 Demonstrate understanding of the workings of Greek, American and European social, political and economic systems and trace the geographical and historical factors that shape these systems.
- 3.4 Discuss issues of cultural diversity.

4. Ethics and Values

- 4.1 Explain the importance of values in our venture to understand the world.
- 4.2 Identify ethical issues in different contexts, especially in one's major course of study.
- 4.3 Discuss ideologies and ethical principles upheld by different cultures and co-cultures.
- 4.4 Describe different approaches through which ethical dilemmas may be examined and resolved.

5. Aesthetic Expression

- 5.1 Discuss the main themes, symbols, and means of expression in various art forms.
- 5.2 Demonstrate ability to create or recreate aesthetic works that reflect knowledge of the artistic process and awareness of self, social and stylistic contexts.

5.3 Reflect on the outcomes of an artistic work.
 5.4 Discuss the value of diversity in creative approaches in the visual, verbal and performing arts.

6 Scientific and Quantitative Literacy

6.1 Describe major concepts, principles, laws and theories in mathematics and the natural sciences.
 6.2 Discuss the impact of science and technology on the individual, society, and the physical environment.
 6.3 Apply scientific and mathematical methods and principles in making informed decisions in various disciplines.
 6.4 Demonstrate practical and processing skills associated with natural sciences, mathematics and technology.

7 Integration

7.1 Synthesize concepts learned in the Liberal Education program with major concepts in one's academic major.
 7.2 Evaluate theoretical and practical knowledge included in Liberal Education competencies in the context of academic and professional enhancement.

2.3 For Foundation Degrees, please list where the 60 credit work-related learning takes place. For apprenticeships an articulation of how the work based learning and academic content are organised with the award.

NA

2.4 List of all exit awards

CERTIFICATE OF HIGHER EDUCATION IN ENVIRONMENTAL STUDIES (120 CREDITS)

Compulsory Modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY (LEVEL 4) – 20 CREDITS

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION (LEVEL 4) – 20 CREDITS

CH 1002 PRINCIPLES OF CHEMISTRY (LEVEL 4) – 20 CREDITS

GG 1000 ENVIRONMENTAL GEOLOGY (LEVEL 4) – 20 CREDITS

Optional Modules:

BIOLOGY OPTION 1 (LEVEL 4) – 20 CREDITS

- BI 1000 INTRODUCTION TO BIOLOGY I (LEVEL 4) – 20 CREDITS
- BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES (LEVEL 4) – 20 CREDITS

BIOLOGY OPTION 2 (LEVEL 4) – 20 CREDITS

- BI 1101 INTRODUCTION TO BIOLOGY II (LEVEL 4) – 20 CREDITS
- BI 1007 ENVIRONMENTAL ECOLOGY (LEVEL 4) – 20 CREDITS

DIPLOMA OF HIGHER EDUCATION IN ENVIRONMENTAL STUDIES (245 CREDITS)

Compulsory Modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY (LEVEL 4) – 20 CREDITS

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION (LEVEL 4) – 20 CREDITS

CH 1002 PRINCIPLES OF CHEMISTRY (LEVEL 4) – 20 CREDITS

GG 1000 ENVIRONMENTAL GEOLOGY (LEVEL 4) – 20 CREDITS

ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I (LEVEL 5) – 20 CREDITS

ES 32XX CLIMATE CHANGE (LEVEL 5) – 15 CREDITS

GG 3115 GEOGRAPHIC INFORMATION SYSTEMS (LEVEL 5) – 15 CREDITS

SO/ES 3002 ENVIRONMENT AND SOCIETY (LEVEL 5) – 15 CREDITS

ES 4115 ENERGY AND ENVIRONMENT (LEVEL 5) – 15 CREDITS

ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION (LEVEL 5) – 15 CREDITS

ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT (LEVEL 5) – 15 CREDITS

ES 3139 THE ECONOMY AND THE ENVIRONMENT (LEVEL 5) – 15 CREDITS

Optional Modules Level 4:

BIOLOGY OPTION 1 (LEVEL 4) – 20 CREDITS

- BI 1000 INTRODUCTION TO BIOLOGY I (LEVEL 4) – 20 CREDITS
- BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES (LEVEL 4) – 20 CREDITS

BIOLOGY OPTION 2 (LEVEL 4) – 20 CREDITS

- BI 1101 INTRODUCTION TO BIOLOGY II (LEVEL 4) – 20 CREDITS
- BI 1007 ENVIRONMENTAL ECOLOGY (LEVEL 4) – 20 CREDITS

Optional Modules Level 5:

BI 3215 ENVIRONMENTAL HEALTH (LEVEL 5) – 15 CREDITS

ES/CH 3241 ENVIRONMENTAL CHEMISTRY (LEVEL 5) – 15 CREDITS

BSc in ENVIRONMENTAL STUDIES (305 CREDITS)

Compulsory Modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY (LEVEL 4) – 20 CREDITS

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION (LEVEL 4) – 20 CREDITS

CH 1002 PRINCIPLES OF CHEMISTRY (LEVEL 4) – 20 CREDITS

GG 1000 ENVIRONMENTAL GEOLOGY (LEVEL 4) – 20 CREDITS

ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I (LEVEL 5) – 20 CREDITS

ES 32XX CLIMATE CHANGE (LEVEL 5) – 15 CREDITS

GG 3115 GEOGRAPHIC INFORMATION SYSTEMS (LEVEL 5) – 15 CREDITS

SO/ES 3002 ENVIRONMENT AND SOCIETY (LEVEL 5) – 15 CREDITS

ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION (LEVEL 5) – 15 CREDITS

ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT (LEVEL 5) – 15 CREDITS

ES 3139 THE ECONOMY AND THE ENVIRONMENT (LEVEL 5) – 15 CREDITS

Optional Modules Level 4:

BIOLOGY OPTION 1 (LEVEL 4) – 20 CREDITS

- BI 1000 INTRODUCTION TO BIOLOGY I (LEVEL 4) – 20 CREDITS
- BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES (LEVEL 4) – 20 CREDITS

BIOLOGY OPTION 2 (LEVEL 4) – 20 CREDITS

- BI 1101 INTRODUCTION TO BIOLOGY II (LEVEL 4) – 20 CREDITS
- BI 1007 ENVIRONMENTAL ECOLOGY (LEVEL 4) – 20 CREDITS

Optional Modules Level 5:

BI 3215 ENVIRONMENTAL HEALTH (LEVEL 5) – 15 CREDITS

ES/CH 3241 ENVIRONMENTAL CHEMISTRY (LEVEL 5) – 15 CREDITS

Modules offered at level 6 (Students are required to take four of the following):

ES 4017 ENVIRONMENTAL JUSTICE

ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II

ES 4430 ENVIRONMENTAL STUDIES CAPSTONE

ES 4115 ENERGY AND ENVIRONMENT

ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT

ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES

ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT

ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS

ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES

ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION

ES 4229 SUSTAINABLE CITIES

ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT

ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY

3. Programme structure and learning outcomes

(The structure for any part-time delivery should be presented separately in this section.)

Programme Structure - LEVEL 4					
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensatable?	Semester runs in
ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY	20	Biology Option 1: BI 1000 INTRODUCTION TO BIOLOGY I	20		
ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION	20	BI 1017 HUMAN BIOLOGY: CONCEPTS AND CURRENT	20		
CH 1002 PRINCIPLES OF CHEMISTRY	20	Biology Option 2: BI 1101 INTRODUCTION TO BIOLOGY II	20		
GG 1000 ENVIRONMENTAL GEOLOGY	20	BI 1007 ENVIRONMENTAL ECOLOGY	20		
SUBTOTAL	80	SUBTOTAL	40		
TOTAL	120				

Intended learning outcomes at Level 4 are listed below:

<u>Learning Outcomes – LEVEL 4</u>	
3A. Knowledge and understanding	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>A1. Demonstrate knowledge and understanding of core concepts, principles and tools in natural sciences, of the structure and functioning of natural systems and of their role in supporting life and human activities.</p>	<p>A1.</p> <p><u>Where it is taught:</u> Students attain this learning outcome by taking the following six natural science modules (level 4): ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION CH 1002 PRINCIPLES OF CHEMISTRY GG 1000 ENVIRONMENTAL GEOLOGY One of the following: BI 1000 INTRODUCTION TO BIOLOGY I BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES One of the following: BI 1101 INTRODUCTION TO BIOLOGY II BI 1007 ENVIRONMENTAL ECOLOGY</p> <p>LEVEL 4:</p> <ul style="list-style-type: none"> ➤ ES 1000 Environmental Science: Ecosystems and Biodiversity Principles of environmental science with emphasis on sustainability, ecosystem structure and function, biodiversity, the human impact on ecosystems, soil and food production, water resources, conservation and protection of natural resources. ➤ ES 1010 Environmental Science: Energy Resources and Pollution Principles of environmental science including a discussion of non-renewable and renewable energy resources, water and air pollution, global atmospheric changes, hazardous and solid waste management. Environmental policy and

Learning Outcomes – LEVEL 4

3A. Knowledge and understanding

- management issues are also discussed, with emphasis on sustainable solutions.
- **CH 1002 Principles of Chemistry**
An introduction to chemical science and the chemistry of everyday life. The module presents fundamental principles of chemistry such as atomic theory, chemical bonding, chemical reactions, states of matter, nuclear chemistry as well as basic concepts of inorganic chemistry. Focus is given to chemical applications and their relevance to the natural environment.
 - **GG 1000 Environmental Geology**
An interdisciplinary approach to studying environmental geosciences. Fundamental geologic concepts such as plate tectonics, geologic time and surficial processes are used as a basis for understanding a variety of natural processes. Elaboration on topics of physical geology, including the rock cycle and plate tectonics, occurrence and distribution of geologic hazards and resources, interactions between humans and the geologic environment, and the issues associated with the exploitation of geologic resources such as water pollution.
 - **BI 1000 Introduction to Biology I**
An integrated exploration of the fundamentals of biology as a science, the nature of life, biological chemistry, cell biology, metabolism and human body anatomy and function.
 - **BI 1017 Human Biology: Body Anatomy and Current Issues**
An issues-based course designed for non-science majors that takes a fresh approach to the field of biology. Emphasis is put on basic biological processes, structure and function of organs and organ systems as well as diseases and infections of the human body.
 - **BI 1101 Introduction to Biology II**
An integrated exploration of major principles of biology. Emphasis on diversity of life, development, cell division, molecular biology, genetics,

Learning Outcomes – LEVEL 4

3A. Knowledge and understanding

evolution, and ecology. Consideration of issues and applications related to society.

➤ **BI 1007 Environmental Ecology**

Fundamentals of the science of ecology, including an introduction to life and the physical environment. Adaptations of organisms and evolution, population structure and regulation, species interactions, community ecology, biodiversity, ecosystems and ecological applications.

Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following tools are used in all level 4 science modules: ES 1000, ES 1010, CH 1002, GG 1000, BI 1000, BI 1017, BI 1101, BI 1007:

- Class lectures, interactive learning (class discussions, group work), video presentations, and practical problems solved in class.
- Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class
- Use of textbook web site and online resources.
- Laboratory and field activities (laboratory/field practical work and reports).
- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material.
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.
- A recent addition to the teaching and learning strategy at this level is the use of Blackboard online tools (discussion boards, journals, blogs, wikis, surveys) that promote interactive learning outside the classroom.

Assessment Methods: Assessment methods give students the opportunity to display knowledge and understanding and staff the opportunity to identify issues in either. Students get timely feedback (within 21 days) on their formative test and midterm exam by their lecturer.

Learning Outcomes – LEVEL 4

3A. Knowledge and understanding

Student performance in ES 1000, ES 1010, CH 1002, BI 1007 is assessed by two exams (midterm and final) and lab reports, as follows:

Summative:

Midterm examination (2 hours): (Multiple choice/short answers/essay questions)	35%
Final examination (2 hours): (Multiple choice/short answers/essay questions)	40%
Lab report(s)	25%

Formative:

Essay questions (as homework assignments)	0%
In-class or online quizzes	0%

In GG 1000, student assessment is exactly as above, with a slight difference in the weight of the final exam and lab reports:

Summative:

Midterm examination (2 hours): (Multiple choice/short answers/essay questions)	30%
Final examination (2 hours): (Multiple choice/short answers/essay questions)	40%
Lab report(s)	30%

Formative:

Essay questions (as homework assignments)	0%
In-class or online quizzes	0%

In BI 1000, BI 1017 and BI 1101 midterm and final exam each consisting of two components are used for student assessment (see table below):

Learning Outcomes – LEVEL 4

3A. Knowledge and understanding

Summative:

Midterm examination

In-class lab midterm (1/2-hour), 10%
 (Microscopy slide identification, diagram labelling, organ identification, problem solving, short answers, classification of organisms, chemical reactions of processes etc.)
 In-class midterm examination (2-hour), 30%
 (Multiple choice/short answers/matching /essay questions combination/problem solving)

40%

Final examination

In-class lab final (1/2-hour), 10%
 (Microscopy slide identification, diagram labelling, organ identification, problem solving, short answers, classification of organisms, chemical reactions of processes etc.)
 In-class midterm examination (2-hour), 50%
 (Multiple choice/short answers/matching /essay questions combination/problem solving)

60%

Formative:

Multiple "diagnostic on-line" tests
 Multiple choice/short answers/
 essay questions

0%

0%

The midterm and final exams of all level 4 modules consist of a combination of multiple choice, short answers, problems and essay questions. These introductory modules provide a survey of the field (e.g. biology, environmental science, chemistry). The multiple-choice questions examine a large number of topics and

Learning Outcomes – LEVEL 4

3A. Knowledge and understanding

A2. Demonstrate knowledge and understanding of the role of social sciences in analysing and addressing environmental problems and of the social, economic, political, health and ecological implications of human interactions with the environment.

cover breadth, while the essay questions assess students' ability to explain and discuss specific topics, thus allowing students to demonstrate knowledge, understanding and a certain level of critical thinking. Lab exams and lab reports examine the lab component of these modules. Lab or field activities and reports help develop students' practical skills, introducing them to the scientific method and to the process of data collection, processing and interpretation.

A2

Where it is taught:

To attain this learning outcome, students take the following two **level 4** modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION

In ES 1000 and ES 1010 they learn about the multiple dimensions of environmental problems and about the need for an interdisciplinary approach in studying and addressing them.

LEVEL 4:

- **ES 1000 Environmental Science: Ecosystems and Biodiversity**
Principles of environmental science with emphasis on sustainability, ecosystem structure and function, biodiversity, the human impact on ecosystems, soil and food production, water resources, conservation and protection of natural resources.
- **ES 1010 Environmental Science: Energy Resources and Pollution**
Principles of environmental science including a discussion of non-renewable and renewable energy resources, water and air pollution, global atmospheric changes, hazardous and solid waste management. Environmental policy and

Learning Outcomes – LEVEL 4

3A. Knowledge and understanding

A3. Demonstrate knowledge and understanding of human responses to contemporary environmental problems such as the development of environmental policy and law and environmental management, as well as of the importance of temporal and spatial scales in considering the environmental impact of human decisions in different environmental fields.

A4. Demonstrate knowledge and understanding of the concepts of sustainability and sustainable development, their different dimensions and of their applications in addressing environmental issues in an integrated manner.

management issues are also discussed, with emphasis on sustainable solutions.

A3.

Where it is taught:

The build-up of knowledge to this LO is gradual, starting mainly from level 5 modules and continuing with the more specialized level 6 modules. (see under L5 A3 & L6 A3)

A4.

Where it is taught:

Students take two level 4 modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION

In level 4 modules they get exposed to the concept of sustainability and sustainable development and acquire understanding of sustainability principles that govern natural systems.

Learning Outcomes – LEVEL 4

3A. Knowledge and understanding

LEVEL 4

- **ES 1000 Environmental Science: Ecosystems and Biodiversity**
Principles of environmental science with emphasis on sustainability, ecosystem structure and function, biodiversity, the human impact on ecosystems, soil and food production, water resources, conservation and protection of natural resources.
- **ES 1010 Environmental Science: Energy Resources and Pollution**
Principles of environmental science including a discussion of non-renewable and renewable energy resources, water and air pollution, global atmospheric changes, hazardous and solid waste management. Environmental policy and management issues are also discussed, with emphasis on sustainable solutions.

Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following tools are used:
For ES 1000, ES 1010 (level 4):

Learning Outcomes – LEVEL 4

3A. Knowledge and understanding

A5. Demonstrate knowledge and understanding of a) basic tools in mathematics and statistics, as well as of quantitative techniques and data processing methods including Geographic Information Systems (GIS) techniques and b) of tools, techniques and research methods used to study and address environmental issues at an advanced level.

A6. Demonstrate knowledge and understanding in more specialized fields of environmental studies (such as management and conservation of natural resources, policy and environmental management of corporations)

- Class lectures, interactive learning (class discussions, group work), video presentations, and practical problems solved in class.
- Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class
- Laboratory activities (laboratory practical work and reports)
- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material.
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

Assessment Methods:

Student performance in ES 1000 and ES 1010 is assessed as described in A1 (through a midterm, a final exam and lab reports having weights of 35%, 40% and 25% respectively).

A5.

Where it is taught:

Students take one module in MA 2025 Applied Statistics for Sciences - Level 4 which is included in the US program and could not fit into the L4 OU modules.

Learning and Teaching Strategy:

NA

<u>Learning Outcomes – LEVEL 4</u>	
3A. Knowledge and understanding	
	<p>A6.</p> <p><u>Where it is taught:</u> The build-up of knowledge to this LO is gradual, starting mainly from level 5 modules and continuing with the more specialized level 6 modules. (see under L5 A6 & L6 A6)</p>
3B. Cognitive skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>Upon completion of the Environmental Studies program, students will be able to:</p> <p>B1. Recognize the moral and ethical issues of investigations, appreciate the need for professional codes of conduct and undertake a reasoned moral assessment of actions/persons/business practices.</p>	<p>B1.</p> <p><u>Where it is taught:</u> The build-up of knowledge to this LO is gradual, starting mainly from level 5 modules and continuing with the more specialized level 6 modules. (see under L5 B1 & L6 B1)</p>

3B. Cognitive skills	
<p>B2. Collect and analyse data and information on environmental issues using a range of techniques appropriate to the subject.</p> <p>B3. Critically evaluate the reliability, validity and significance of data and information collected and the evidence provided to support conclusions.</p> <p>B4. Categorize ideas, data and information, reformat and transform them towards a given purpose and design solutions.</p>	<p>B2. <u>Where it is taught:</u> This learning outcome is achieved through all the modules of the curriculum. In level 4 natural science modules, students learn basic methods in natural sciences, including the ability to collect and process data and information.</p> <p><u>Module Description, Learning and Teaching Strategy and Assessment Methods as outlined above in Learning Outcomes (LOs) of section A (A1 through A5).</u></p> <p>B3. & B4. <u>Where it is taught:</u> The build-up of knowledge to LOs B3 & B4 is gradual, starting mainly from level 5 modules and continuing with the more specialized level 6 modules. (see under L5 B3, B4 & L6 B3, B4)</p> <p>B5. <u>Where it is taught:</u></p>

3B. Cognitive skills	
B5. Identify key elements of environmental problems and apply appropriate interdisciplinary knowledge and skills to their solution.	This learning outcome is achieved through the most advanced, level 6 modules of the curriculum. Students use knowledge from lower level modules to identify key elements of environmental problems and apply it to their solution.
3C. Practical and professional skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>Upon completion of the Environmental Studies program, students will be able to:</p> <p>C1. Describe and record materials in the field and laboratory and to interpret practical results in a logical manner.</p> <p>C2. Use appropriate laboratory and field equipment competently and safely</p>	<p>C1 and C2:</p> <p><u>Where it is taught:</u> Students attain these learning outcomes by taking modules that include a lab component and /or field trip:</p> <p>LEVEL 4: ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION CH 1002 PRINCIPLES OF CHEMISTRY GG 1000 ENVIRONMENTAL GEOLOGY One of the following: BI 1000 INTRODUCTION TO BIOLOGY I BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES One of the following: BI 1101 INTRODUCTION TO BIOLOGY II</p>

3C. Practical and professional skills	
	<p>BI 1007 ENVIRONMENTAL ECOLOGY</p> <p>LEVEL 4:</p> <ul style="list-style-type: none"> ➤ ES 1000 Environmental Science: Ecosystems and Biodiversity Principles of environmental science with emphasis on sustainability, ecosystem structure and function, biodiversity, the human impact on ecosystems, soil and food production, water resources, conservation and protection of natural resources. ➤ ES 1010 Environmental Science: Energy Resources and Pollution Principles of environmental science including a discussion of non-renewable and renewable energy resources, water and air pollution, global atmospheric changes, hazardous and solid waste management. Environmental policy and management issues are also discussed, with emphasis on sustainable solutions. ➤ CH 1002 Principles of Chemistry An introduction to chemical science and the chemistry of everyday life. The course presents fundamental principles of chemistry such as atomic theory, chemical bonding, chemical reactions, states of matter, nuclear chemistry as well as basic concepts of inorganic chemistry. Focus is given to chemical applications and their relevance to the natural environment. ➤ GG 1000 Environmental Geology An interdisciplinary approach to studying environmental geosciences. Fundamental geologic concepts such as plate tectonics, geologic time and surficial processes are used as a basis for understanding a variety of natural processes. Elaboration on topics of physical geology, including the rock cycle and plate tectonics, occurrence and distribution of geologic hazards and resources, interactions between humans and the geologic environment, and the issues associated with the exploitation of geologic resources such as water pollution. ➤ BI 1000 Introduction to Biology I

3C. Practical and professional skills	
	<p>An integrated exploration of the fundamentals of biology as a science, the nature of life, biological chemistry, cell biology, metabolism and human body anatomy and function.</p> <ul style="list-style-type: none"> ➤ BI 1017 Human Biology: Concepts and Current Issues An issues-based course designed for non-science majors that takes a fresh approach to the field of biology. Emphasis is put on basic biological processes, structure and function of organs and organ systems as well as diseases and infections of the human body. ➤ BI 1101 Introduction to Biology II An integrated exploration of major principles of biology. Emphasis on diversity of life, development, cell division, molecular biology, genetics, evolution, and ecology. Consideration of issues and applications related to society. ➤ BI 1007 Environmental Ecology Fundamentals of the science of ecology, including an introduction to life and the physical environment. Adaptations of organisms and evolution, population structure and regulation, species interactions, community ecology, biodiversity, ecosystems and ecological applications. <p><u>Learning and Teaching Strategy and Assessment Methods as outlined above in LO A1.</u></p> <p>An essential element of most of these modules is the lab component or field trip. Most of them include reports on the practical work (lab or field activities) or a lab exam, as a way to assess the ability to interpret practical results.</p> <p>C3. <u>Where it is taught:</u></p>

3C. Practical and professional skills	
<p>C3. Select and apply a range of methods, including spatial technologies, to study and solve address environmental problems</p> <p>C4. Plan, conduct and present an independent project effectively and appropriately with reliance on guidance, to relate investigations to prior work and to reference appropriately.</p>	<p>These skills are mostly developed in Level 5 modules through which students learn and apply methods used in environmental analysis (see under L5 C3 & L6 C3).</p> <p>C4.</p> <p><u>Where it is taught:</u> These skills are developed progressively, in all level 5 and level 6 modules with a term project (see under L5 C4 & L6 C4).</p>
3D. Key/transferrable skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>Upon completion of the Environmental Studies program, students will be able to:</p> <p>D1. Manage, select and process information from a variety of sources to support findings and hypotheses, develop a critical approach to academic literature and other sources of information and develop the ability to perform independent research (using simple to more complex research strategies) in different environmental studies fields.</p>	<p>D1.</p> <p><u>Where it is taught:</u> These skills are attained in level 5 and level 6 modules with a research project (see under L5 D1 & L6 D1).</p> <p>D2.</p> <p><u>Where it is taught:</u></p>

3D. Key/transferable skills	
<p>D2. a) Communicate effectively to a variety of audiences in written, graphical and verbal forms, to engage in debate in a professional manner and b) Produce detailed and coherent project reports.</p> <p>D3. interact effectively within a team/learning group, giving and receiving information and ideas and modifying responses when appropriate.</p>	<p>This skill is attained in all modules (in level 4 modules through essay questions and lab reports and in level 5 and through essay questions and written projects that in some cases include a presentation)</p> <p><u>Module Description as provided in LOs B3 and B4.</u> <u>Learning and Teaching Strategy and Assessment Methods as outlined above in LO A1.</u></p> <p>D3. <u>Where it is taught:</u> These skills are attained in all level 4 natural science modules with laboratory, as lab and field activities involve team work and in some level 5 and level 6 modules where students work in teams in their term projects.</p> <p>ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION CH 1002 PRINCIPLES OF CHEMISTRY GG 1000 ENVIRONMENTAL GEOLOGY Optional Modules: One of the following: BI 1000 INTRODUCTION TO BIOLOGY I BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES One of the following: BI 1101 INTRODUCTION TO BIOLOGY II BI 1007 ENVIRONMENTAL ECOLOGY <u>Module Descriptions, Learning and Teaching Strategy and Assessment Methods as outlined above in LO A1.</u></p> <p>D4.</p>

3D. Key/transerable skills	
<p>D4. Acquire, process, interpret and present data using appropriate qualitative and quantitative techniques including use of information technology and the internet, mathematics, statistics and GIS.</p>	<p><u>Where it is taught:</u> These skills are attained progressively in modules of all levels. In level 4 natural science modules students learn to acquire and process data in the laboratory, in level 5 modules they learn to use statistics and GIS and in level 6 they get exposed to natural science and social science methods which they apply in their research projects.</p> <p><u>Module Description, Learning and Teaching Strategy and Assessment Methods as outlined above in LO A1.</u></p>
<p>D5. Conduct independent study and self-evaluation</p>	<p>D5. <u>Where it is taught:</u> This LO is attained in L6 (see under L6 D5).</p>

Title(s) of exit award(s) at Level 4

CERTIFICATE OF HIGHER EDUCATION IN ENVIRONMENTAL STUDIES (120 CREDITS)

Compulsory Modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY (LEVEL 4) – 20 CREDITS

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION (LEVEL 4) – 20 CREDITS

CH 1002 PRINCIPLES OF CHEMISTRY (LEVEL 4) – 20 CREDITS

GG 1000 ENVIRONMENTAL GEOLOGY (LEVEL 4) – 20 CREDITS

Optional Modules:

BIOLOGY OPTION 1 (LEVEL 4) – 20 CREDITS

- BI 1000 INTRODUCTION TO BIOLOGY I (LEVEL 4) – 20 CREDITS
- BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES (LEVEL 4) – 20 CREDITS

BIOLOGY OPTION 2 (LEVEL 4) – 20 CREDITS

- BI 1101 INTRODUCTION TO BIOLOGY II (LEVEL 4) – 20 CREDITS
- BI 1007 ENVIRONMENTAL ECOLOGY (LEVEL 4) – 20 CREDITS

Programme Structure - LEVEL 5					
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensatable?	Semester runs in
ES 32XX RESPONSES TO CLIMATE CHANGE – New Course	15	One out of the following:			
GG 3115 GEOGRAPHIC INFORMATION SYSTEMS	15	BI 3215 ENVIRONMENTAL HEALTH	15		
SO/ES 3002 ENVIRONMENT AND SOCIETY	15	ES/CH 3241 ENVIRONMENTAL CHEMISTRY	15		
ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I	20				
ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION	15				
ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT	15				
ES 3139 THE ECONOMY AND THE ENVIRONMENT	15				
SUBTOTAL	110	SUBTOTAL	15		
TOTAL	125				

Intended learning outcomes at Level 5 are listed below:

<u>Learning Outcomes – LEVEL 5</u>							
3A. Knowledge and understanding							
Learning outcomes:	Learning and teaching strategy/ assessment methods						
<p>A1. Demonstrate knowledge and understanding of core concepts, principles and tools in natural sciences, of the structure and functioning of natural systems and of their role in supporting life and human activities.</p>	<p>A1</p> <p>LEVEL 5:</p> <ul style="list-style-type: none"> ➤ ES/CH 3241 Environmental Chemistry A study of the chemistry of the atmosphere, water, and soil as well as the associated pollution problems. Chemical hazards in the environment such as heavy metals and synthetic organic compounds, risk assessment, and the chemistry and environmental implications of energy production are also discussed. ➤ ES 32XX Responses to Climate Change An overview of the basic principles of climate, the greenhouse effect and the physical and chemical changes occurring as a result of human activity, leading to the phenomenon of human-induced climate change. The impacts of climate change, mitigation and adaptation options are also discussed. <p>In the level 5 ES/CH 3241, a paper, a final exam and a Portfolio of short assignments are used to assess students:</p> <p>Summative:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="padding: 2px;">Project (2,000 to 2,500 words)</td> <td style="text-align: right; padding: 2px;">40%</td> </tr> <tr> <td style="padding: 2px;">Final examination (2 hours)</td> <td style="text-align: right; padding: 2px;">50%</td> </tr> <tr> <td style="padding: 2px;">Portfolio of short assignments</td> <td style="text-align: right; padding: 2px;">10%</td> </tr> </tbody> </table>	Project (2,000 to 2,500 words)	40%	Final examination (2 hours)	50%	Portfolio of short assignments	10%
Project (2,000 to 2,500 words)	40%						
Final examination (2 hours)	50%						
Portfolio of short assignments	10%						

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

(critical thinking essay questions/exercises)	
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Formative:

Essay questions (as homework assignments)	0%
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In ES32xx Responses to Climate Changes, students are assessed by a project and a final examination, as follows:

Summative:

Student Project (2000 – 2500 words)	40%
Final Examination (2 hours)	60%

Formative:

Critical Essays	0

ES/CH 3241 explores the chemistry of the environment, while ES 32XX Responses to Climate Change examines the science and impacts of climate change with emphasis on human response s to it. In both courses, students are assessed by a project that includes research on a selected topic (literature review) and includes paper preparation (through which they develop skills for critical evaluation, analysis and synthesis), oral presentation of student work and/or poster. The final examination consists of essay questions that examine knowledge understanding and critical evaluation of specific topics. ES 3241 includes a coursework portfolio of short assignments through which students critically reflect on current environmental chemistry topics.

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

A2. Demonstrate knowledge and understanding of the role of social sciences in analysing and addressing environmental problems and of the social, economic, political, health and ecological implications of human interactions with the environment.

A2.

Where it is taught:

The build-up of knowledge is gradual, starting from level 5 modules and continuing with the more specialized level 6 modules.

Students take the following level 5 modules:

ES 3XXX RESPONSES TO CLIMATE CHANGE

ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION

ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT

ES 3139 THE ECONOMY AND THE ENVIRONMENT

ES/CH 3241 ENVIRONMENTAL CHEMISTRY

BI 3215 ENVIRONMENTAL HEALTH

LEVEL 5:

➤ **ES 3XXX Responses to Climate Change**

An overview of the basic principles of climate, the greenhouse effect and the physical and chemical changes occurring as a result of human activity, leading to the phenomenon of human-induced climate change. The impacts of climate change, mitigation and adaptation options are also discussed.

➤ **SO/ES 3002 Environment and Society**

The study of the interactions between the physical environment, social organization and social behaviour. Focus on both local and global dimensions of social behaviours and their environmental impact.

➤ **ES 3216 Environmental Policy and Legislation**

The module provides an overview of environmental policy, politics and related legislation from both a national and international perspective,

<u>Learning Outcomes – LEVEL 5</u>	
3A. Knowledge and understanding	
	<p>examining the key concepts, conflicts, political systems and the practices of policy-making.</p> <ul style="list-style-type: none"> ➤ ES 3220 Principles of Environmental Management An introduction to the basic principles, significant underlying concepts and techniques of environmental management. Issues like uncertainty and public goods and their relation to environmental management as well as cases of environmental management practices in different settings are discussed ➤ ES 3139 The Economy and the Environment Valuing the environment. Sustainability. Market failure and environmental problems. Environmental regulatory policies. Management of natural resources. ➤ BI 3215 Environmental Health The module examines health issues, the scientific understanding of their causes and possible future approaches to control major environmental health problems in industrialized and developing countries. <p><u>Learning and Teaching Strategy:</u> In congruence with the Learning and Teaching strategy of the College, the following tools are used:</p> <ul style="list-style-type: none"> ➤ Class lectures, interactive learning (class discussions, group work), video presentations, invited speakers, articles from scientific journals and case studies discussed in class. ➤ Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class. ➤ The level 5 modules SO/ES 3002 Environment and Society, ES 3216 Environmental Policy and Legislation, ES 3220 Principles of Environmental Management, ES 3139 The Economy and the Environment. Student project may involve field work.

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material.
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

Assessment Methods:

In ES32xx Responses to Climate Changes, students are assessed as follows:

Summative:

Student Project (2000 – 2500 words)	40%
Final Examination (2 hours)	60%

Formative:

Critical Essays	0

In SO/ES3002 Environment and Society, students are assessed as follows:

Summative:

First assessment: term project (2,500 words, +/-10%). Project based on applications of culture in the social construction of the environment.	40%
The first assessment tests Learning Outcomes 1, 2	
Second assessment: portfolio of 3 critical responses on selected journal topics pertinent to key course topics.	10%

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

The second assessment tests Learning Outcomes 1, 2, 4	
Final assessment: final examination (2-hour, comprehensive. Essay questions with choice)	50%
The final assessment tests Learning Outcomes 1, 2, 3, 4	

Formative:

Diagnostic take home examination	0%
The formative “diagnostic take home examination” aims to prepare students for the examination.	

In ES 3216 Environmental Policy and Legislation, students are assessed as follows:

Summative:

Project (2,000 to 2,500 words)	50%
Final examination (2-hour)	50%

Formative:

Critical response to selected questions during the semester – sample test or in-class, 1-hour, "diagnostic" test	0%
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Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

ES 3220 Principles of Environmental Management, students are assessed as follows:

Summative:

Student project (2,000 to 2,500 words)	45%
Critical response to selected essay questions (comprehensive - take home)	45%
Portfolio	10%

The Portfolio assessment includes formative activities that aim to prepare students for the final examination and the preparation of an effective paper. It addresses all learning outcomes.

The student papers and the final examination test all learning outcomes.

In ES 3139 The Economy and the Environment and SO/ES 3002 Environment and Society students are assessed as follows:

Summative:

Project (2,000 to 2,500 words)	40%
Final Examination (2-hour)	60%

Formative:

“Diagnostic” examination (in-class or take-home)	0%
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In BI 3215 Environmental Health students are assessed as follows:

Summative:

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

First Assessment Written project (2,000-2,500 words) -summative	40
Second Assessment Final Examination (2-hour, comprehensive), Essays - summative	50
Third assessment Portfolio Essay questions aiming to prepare students for their first and second assessments in terms of content, context and time management	10

Formative:

Essay questions (as homework assignments)	0
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The formative tests aim to prepare students for the examinations. Students are expected to submit feedback on their performance.

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

A3. Demonstrate knowledge and understanding of human responses to contemporary environmental problems such as the development of environmental policy and law and environmental management, as well as of the importance of temporal and spatial scales in considering the environmental impact of human decisions in different environmental fields.

In all above modules, students are assessed by a project based on research on selected topics relevant to class material in different ways (literature review or primary data collection through observations, measurements, interviews, surveys). The project includes paper preparation (through which they develop skills for critical evaluation, analysis and synthesis) and in some cases oral presentation of student work and/or poster. Critical essays, role playing and case study analysis can also be included as part of the project. In SO/ES 3002, the project is based on analysing connections between social changes and environment in a specific area. An analytical description of the requirements of the project and of the assessment method is always included as part of the module information package. The final exam of these modules consists of essay questions. In BI 3215, SO/ES 3002 and ES3220, students are additionally assessed through a Coursework Portfolio on short assignments.

A3.

Where it is taught:

The build-up of knowledge is gradual, starting from level 5 modules and continuing with the more specialized level 6 modules.

Students take the following level 5 modules:

ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION

ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT

ES 3139 THE ECONOMY AND THE ENVIRONMENT

ES/CH 3241 ENVIRONMENTAL CHEMISTRY

BI 3215 ENVIRONMENTAL HEALTH

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

LEVEL 5:

- **ES 3216 Environmental Policy and Legislation**
The module provides an overview of environmental policy, politics and related legislation from both a national and international perspective, examining the key concepts, conflicts, political systems and the practices of policy-making.
- **ES 3220 Principles of Environmental Management**
An introduction to the basic principles, significant underlying concepts and techniques of environmental management. Issues like uncertainty and public goods and their relation to environmental management as well as cases of environmental management practices in different settings are discussed.
- **ES 3139 The Economy and the Environment**
Valuing the environment. Sustainability. Market failure and environmental problems. Environmental regulatory policies. Management of natural resources.
- **ES/CH 3241 Environmental Chemistry**
A study of the chemistry of the atmosphere, water, and soil as well as the associated pollution problems. Chemical hazards in the environment such as heavy metals and synthetic organic compounds, risk assessment, and the chemistry and environmental implications of energy production are also discussed.
- **BI 3215 Environmental Health**
The module examines health issues, the scientific understanding of their causes and possible future approaches to control major environmental health problems in industrialized and developing countries.

Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following tools are used:

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

- Class lectures, interactive learning (class discussions, group work), video presentations, invited speakers, articles from scientific journals and case studies discussed in class.
- Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class.
- Blackboard online tools are also used in some modules.
- Student term project and, in some cases, presentation (except in BI 3215 Environmental Health). Student project may involve field work.
- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material.
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

Assessment Methods:

In ES 3216 Environmental Policy and Legislation, students are assessed as follows:

Summative:

Project (2,000 to 2,500 words)	50%
Final examination (2-hour)	50%

Formative:

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

Critical response to selected questions during the semester – sample test or in-class, 1-hour, "diagnostic" test	0%
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ES 3220 Principles of Environmental Management, students are assessed as follows:

Summative:

Student project (2,000 to 2,500 words)	45%
Critical response to selected essay questions (comprehensive - take home)	45%
Portfolio	10%

The Portfolio assessment includes formative activities that aim to prepare students for the final examination and the preparation of an effective paper. It addresses all learning outcomes.

The student papers and the final examination test all learning outcomes.

In ES 3139 The Economy and the Environment and SO/ES 3002 Environment and Society students are assessed as follows:

Summative:

Project (2,000 to 2,500 words)	40%
Final Examination (2-hour)	60%

Formative:

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

“Diagnostic” examination (in-class or take-home)	0%
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In ES 3139, ES 3216 and ES 3220, students are assessed by a project based on research on selected topics relevant to class material in different ways (literature review or primary data collection through observations, measurements, interviews, surveys). The project includes paper preparation (through which they develop skills for critical evaluation, analysis and synthesis) and in some cases oral presentation of student work and/or poster. Critical essays, role playing and case study analysis can also be included as part of the project. In SO/ES 3002, the project is based on analysing connections between social changes and environment in a specific area. An analytical description of the requirements of the project and of the assessment method is always included as part of the module information package. The final exam of these modules consists of essay questions. In ES3220, students are additionally assessed through a Coursework Portfolio on short assignments.

In BI 3215 Environmental Health students are assessed as follows:

Summative:

First Assessment Written project (2,000-2,500 words) -summative	40
Second Assessment Final Examination (2-hour, comprehensive), Essays - summative	50

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

A4. Demonstrate knowledge and understanding of the concepts of sustainability and sustainable development, their different dimensions and of their applications in addressing environmental issues in an integrated manner.

Third assessment Portfolio	
Essay questions aiming to prepare students for their first and second assessments in terms of content, context and time management	10

Formative:

Essay questions (as homework assignments)	0
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The formative tests aim to prepare students for the examinations. Students are expected to submit feedback on their performance.

In the level 5 ES/CH 3241, a paper, a final exam and a Portfolio of short assignments are used to assess students:

Summative:

Project (2,000 to 2,500 words)	40%
Final examination (2 hours)	50%
Portfolio of short assignments (critical thinking essay questions/exercises)	10%

Formative:

Essay questions (as homework assignments)	0%
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ES/CH 3241 explores the chemistry of the environment. Students are assessed by a project that includes research on a selected topic (literature review) and includes paper preparation (through which they develop skills for critical

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

evaluation, analysis and synthesis), oral presentation of student work and/or poster. The final examination consists of essay questions that examine knowledge understanding and critical evaluation of specific topics. The Coursework Portfolio comprises of critical thinking essay questions.

A4.

Where it is taught:

In the following level 5 modules:

ES 32XX RESPONSES TO CLIMATE CHANGE

SO/ES 3002 ENVIRONMENT AND SOCIETY

ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT

ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION

ES 3139 THE ECONOMY AND THE ENVIRONMENT

LEVEL 5

➤ **ES 32XX Responses to Climate Change**

An overview of the basic principles of climate, the greenhouse effect and the physical and chemical changes occurring as a result of human activity, leading to the phenomenon of human-induced climate change. The impacts of climate change, mitigation and adaptation options are also discussed.

➤ **SO/ES 3002 Environment and Society**

The study of the interactions between the physical environment, social organization and social behaviour. Focus on both local and global dimensions of social behaviours and their environmental impact.

<u>Learning Outcomes – LEVEL 5</u>	
3A. Knowledge and understanding	
<p>A5. Demonstrate knowledge and understanding of a) basic tools in mathematics and statistics, as well as of quantitative techniques and data processing methods including Geographic Information Systems (GIS)</p>	<ul style="list-style-type: none"> ➤ ES 3216 Environmental Policy and Legislation The module provides an overview of environmental policy, politics and related legislation from both a national and international perspective, examining the key concepts, conflicts, political systems and the practices of policy-making. ➤ ES 3220 Principles of Environmental Management An introduction to the basic principles, significant underlying concepts and techniques of environmental management. Issues like uncertainty and public goods and their relation to environmental management as well as cases of environmental management practices in different settings are discussed ➤ ES 3139 The Economy and the Environment Valuing the environment. Sustainability. Market failure and environmental problems. Environmental regulatory policies. Management of natural resources. <p><u>Learning and Teaching Strategy:</u> In congruence with the Learning and Teaching strategy of the College, the following tools are used:</p> <ul style="list-style-type: none"> ➤ Class lectures, interactive learning (class discussions, group work), video presentations, invited speakers, articles from scientific journals and case studies discussed in class. ➤ Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class. ➤ The level 5 modules SO/ES 3002 Environment and Society, ES 3216 Environmental Policy and Legislation, ES 3220 Principles of Environmental Management, ES 3139 The Economy and the Environment. Student project may involve field work.

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

techniques and b) of tools, techniques and research methods used to study and address environmental issues at an advanced level.

- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material.
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

Learning, Teaching and Assessment Strategies of these L5 modules are described in the previous sections (A1-A4).

A5. a)

Where it is taught:

Students take one module in MA 2025 Applied Statistics for Sciences - Level 4 which is included in the US program and could not fit into the L4 OU modules. They take one module in Geographic Information Systems, GG 3115 GEOGRAPHIC INFORMATION SYSTEMS

➤ **GG 3115: Geographic Information Systems**

An introduction to the field of Geographic Information Systems (GIS), its diversified applications and exploration of basic concepts, principles, approaches and techniques of GIS. Topics include applications of geographic information system; spatial data collection; data accuracy and uncertainty; cartographic principles; data visualization; geographic analysis; legal, economic and ethical issues.

Learning and Teaching Strategy:

GG 3115, classes consist of lectures and class discussions. Blackboard and office hours are available, as stated previously. Computer software is available both as

Learning Outcomes – LEVEL 5

3A. Knowledge and understanding

a teaching aid and as a medium for solving problems. GG 3115 also includes programming, problem solving and laboratory sessions, involving training and practice in program design and development.

Assessment Methods:

Student performance in GG 3115 is assessed by one term project:

Summative:

Project: 1,500-1,800 words report describing the work done with references and a map output	100%
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Formative:

Take-home “diagnostic” case study	0%
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In the GG 3115 module, students use GIS to examine a specific topic/question of environmental interest, producing a report with references and a map output.

A5. b)

Where it is taught:

Students take the first module of environmental analysis that has a strong empirical component:

ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I (LEVEL 5)

In ES 3240 they get exposed to research methodology and methods used in both natural and social sciences.

➤ **ES 3240 Integrated Methods in Environmental Analysis I**

The course aims to cover basic methods and techniques needed in environmental science. Selected natural science methods and their basic

<u>Learning Outcomes – LEVEL 5</u>			
3A. Knowledge and understanding			
A6. Demonstrate knowledge and understanding in more specialized fields of environmental studies (such	<p>principles and techniques are presented, with emphasis on interdisciplinary inquiry. Hands-on experience, laboratory and field work on some of the presented methods and techniques are offered. involves a project on an environmental issue/topic of local or national relevance.</p> <p><u>Learning and Teaching Strategy:</u> In ES 3240 the following tools are used:</p> <ul style="list-style-type: none"> ➤ Class lectures, interactive learning (class discussions, group work), video presentations, and case studies discussed in class. ➤ Laboratory and field practical work and reports ➤ Practical problems addressed (e.g. creation of a questionnaire) ➤ Formative activities (e.g. homework assignments, involvement with on-line tools) which are reviewed in class ➤ Students' projects and presentations ➤ Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material. ➤ Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources. <p><u>Assessment Methods:</u> Student performance in ES 3240 is assessed by a project, a portfolio of lab reports and a final examination in the following way:</p> <p>Summative:</p> <table border="1" style="width: 100%;"> <tr> <td>Coursework: It includes the following components: a) reports on practical work (25%); b) short research</td> <td style="text-align: center;">50%</td> </tr> </table>	Coursework: It includes the following components: a) reports on practical work (25%); b) short research	50%
Coursework: It includes the following components: a) reports on practical work (25%); b) short research	50%		

<u>Learning Outcomes – LEVEL 5</u>		
3A. Knowledge and understanding		
as management and conservation of natural resources, policy and environmental management of corporations)	proposal or analysis of a scientific paper with focus on methodology (25%)	
	Portfolio of short assignments (answers to critical thinking questions and exercises)	10%
	Final examination (2-hour)	40%
	Formative:	
	Critical response to selected questions during the semester – including a sample test	0
<p>A6. <u>Where it is taught:</u> Students take five out of nine level 6 optional modules in which they acquire knowledge in specialized fields of environmental studies (see under L6 A6)</p>		

3B. Cognitive skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
Upon completion of the Environmental Studies program, students will be able to:	<p>B1. <u>Where it is taught:</u></p>

3B. Cognitive skills	
<p>B1. Recognize the moral and ethical issues of investigations, appreciate the need for professional codes of conduct and undertake a reasoned moral assessment of actions/persons/business practices.</p>	<p>The moral and ethical issues of investigations are discussed throughout the curriculum, but are mostly emphasized in the following modules: LEVEL 5:</p> <p>ES 32XX RESPONSES TO CLIMATE CHANGE ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I SO/ES 3002 ENVIRONMENT AND SOCIETY</p> <p>SO/ES 3002 examines issues of social inequality and environmental justice, ES 3220 teaches principles of environmental management at all levels. ES 3240 introduces students to methods of environmental research and discusses basic principles of scientific investigation. ES 32XX discusses the many dimensions and implications of climate change, including moral and ethical issues.</p> <p>LEVEL 5</p> <ul style="list-style-type: none"> ➤ ES 32XX Responses to Climate Change An overview of the basic principles of climate, the greenhouse effect and the physical and chemical changes occurring as a result of human activity, leading to the phenomenon of human-induced climate change. The impacts of climate change, mitigation and adaptation options are also discussed. ➤ ES 3220 Principles of Environmental Management An introduction to the basic principles, significant underlying concepts and techniques of environmental management. Issues like uncertainty and public goods and their relation to environmental management as well as cases of environmental management practices in different settings are discussed. ➤ ES 3240 Integrated Methods in Environmental Analysis I

3B. Cognitive skills	
	<p>The course aims to cover basic methods and techniques needed in environmental science. Selected natural science methods and their basic principles and techniques are presented, with emphasis on interdisciplinary inquiry. Hands-on experience, laboratory and field work on some of the presented methods and techniques are offered.</p> <ul style="list-style-type: none"> ➤ SO/ES 3002 Environment and Society The study of the interactions between the physical environment, social organization and social behavior. Focus on both local and global dimensions of social behaviors and their environmental impact. <p><u>Learning and Teaching Strategy:</u> In congruence with the Learning and Teaching strategy of the College, the following tools are used:</p> <ul style="list-style-type: none"> ➤ Class lectures, interactive learning (class discussions, group work), video presentations, invited speakers, articles from scientific journals and case studies discussed in class. ➤ Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class. ➤ Use of Blackboard online tools. ➤ Student term project (may involve field work). ➤ Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material. ➤ Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources. <p>As outlined in learning outcome A5 b), ES 3240 involves practical work (laboratory or field work, exercises) and reports.</p> <p><u>Assessment Methods:</u></p>

3B. Cognitive skills	
<p>B2. Collect and analyse data and information on environmental issues using a range of techniques appropriate to the subject.</p> <p>B3. Critically evaluate the reliability, validity and significance of data and information collected and the evidence provided to support conclusions.</p> <p>B4. Categorize ideas, data and information, reformat and transform them towards a given purpose and design solutions.</p>	<p>Assessment methods for the above modules are described in learning outcomes A1 to A4.</p> <p>B2.</p> <p><u>Where it is taught:</u> This learning outcome is achieved through all the modules of the curriculum. In level 4 natural science modules, students learn basic methods in natural sciences, including the ability to collect and process data and information. In most higher level modules they collect and analyse data and/or information for their term projects, in GG 3115 Geographic Information Systems and ES 3240. .</p> <p><u>Module Description, Learning and Teaching Strategy and Assessment Methods as outlined above in Learning Outcomes (LOs) of section A (A1 through A6).</u></p> <p>B3 and B4.</p> <p><u>Where it is taught:</u> This learning outcome is achieved through all the level 5 and level 6 modules of the curriculum that include a term project. In level 5 modules students develop the ability to critically evaluate data and information through essay questions, case study analyses, critical responses to selected questions and term projects. In the projects, students develop their ability for synthesis, as they are asked to propose solutions based on the information collected and analysed. .</p> <p>LEVEL 5</p> <p>ES 3XXX RESPONSES TO CLIMATE CHANGE</p>

3B. Cognitive skills	
	<p>GG 3115 GEOGRAPHIC INFORMATION SYSTEMS SO/ES 3002 ENVIRONMENT AND SOCIETY ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT ES 3139 THE ECONOMY AND THE ENVIRONMENT ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I ES/CH 3241 ENVIRONMENTAL CHEMISTRY BI 3215 ENVIRONMENTAL HEALTH</p> <p>LEVEL 5</p> <ul style="list-style-type: none"> ➤ ES 3XXX Responses to Climate Change An overview of the basic principles of climate, the greenhouse effect and the physical and chemical changes occurring as a result of human activity, leading to the phenomenon of human-induced climate change. The impacts of climate change, mitigation and adaptation options are also discussed. ➤ GG 3115: Geographic Information Systems An introduction to the field of Geographic Information Systems (GIS), its diversified applications and exploration of basic concepts, principles, approaches and techniques of GIS. Topics include applications of geographic information system; spatial data collection; data accuracy and uncertainty; cartographic principles; data visualization; geographic analysis; legal, economic and ethical issues. ➤ SO/ES 3002 Environment and Society The study of the interactions between the physical environment, social organization and social behavior. Focus on both local and global dimensions of social behaviors and their environmental impact. ➤ ES 3216 Environmental Policy and Legislation The module provides an overview of environmental policy, politics and related legislation from both a national and international perspective,

3B. Cognitive skills	
	<p>examining the key concepts, conflicts, political systems and the practices of policy-making.</p> <ul style="list-style-type: none"> ➤ ES 3220 Principles of Environmental Management An introduction to the basic principles, significant underlying concepts and techniques of environmental management. Issues like uncertainty and public goods and their relation to environmental management as well as cases of environmental management practices in different settings are discussed. ➤ ES 313 The Economy and the Environment Valuing the environment. Sustainability. Market failure and environmental problems. Environmental regulatory policies. Management of natural resources. ➤ ES 3240 Integrated Methods in Environmental Analysis I The course aims to cover basic methods and techniques needed in environmental science. Selected natural science methods and their basic principles and techniques are presented, with emphasis on interdisciplinary inquiry. Hands-on experience, laboratory and field work on some of the presented methods and techniques are offered. ➤ ES/CH 3241 Environmental Chemistry A study of the chemistry of the atmosphere, water, and soil as well as the associated pollution problems. Chemical hazards in the environment such as heavy metals and synthetic organic compounds, risk assessment, and the chemistry and environmental implications of energy production are also discussed. ➤ BI 3215 Environmental Health The module examines health issues, the scientific understanding of their causes and possible future approaches to control major environmental health problems in industrialized and developing countries.

3B. Cognitive skills	
<p>B5. Identify key elements of environmental problems and apply appropriate interdisciplinary knowledge and skills to their solution.</p>	<p><u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs of section A (A1 through A6).</u></p> <p>B5.</p> <p><u>Where it is taught:</u> This learning outcome is achieved through the most advanced, level 6 modules of the curriculum. Students use knowledge from lower level modules to identify key elements of environmental problems and apply it to their solution.</p>
3C. Practical and professional skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>Upon completion of the Environmental Studies program, students will be able to:</p> <p>C1. Describe and record materials in the field and laboratory and to interpret practical results in a logical manner.</p> <p>C2. Use appropriate laboratory and field equipment competently and safely</p>	<p>C1 and C2:</p> <p><u>Where it is taught:</u> Students attain these learning outcomes by taking modules that include a lab component and /or field trip:</p> <p>LEVEL 5: ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I</p>

3C. Practical and professional skills	
<p>C3. Select and apply a range of methods, including spatial technologies, to study and solve address environmental problems</p>	<p>LEVEL 5:</p> <ul style="list-style-type: none"> ➤ ES 3240 Integrated Methods in Environmental Analysis I The course aims to cover basic methods and techniques needed in environmental science. Selected natural science methods and their basic principles and techniques are presented, with emphasis on interdisciplinary inquiry. Hands-on experience, laboratory and field work on some of the presented methods and techniques are offered. <p><u>Learning and Teaching Strategy and Assessment Methods as outlined above in LO A5b).</u></p> <p>An essential element of most of these modules is the lab component or field trip. Most of them include reports on the practical work (lab or field activities) or a lab exam, as a way to assess the ability to interpret practical results.</p> <p>C3. <u>Where it is taught:</u> These skills are mostly developed in modules through which students learn and apply methods used in environmental analysis such as: GG 3115 GEOGRAPHIC INFORMATION SYSTEMS ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I</p> <p>LEVEL 5</p> <ul style="list-style-type: none"> ➤ GG 3115: Introduction to Geographic Information Systems An introduction to the field of Geographic Information Systems (GIS), its diversified applications and exploration of basic concepts, principles, approaches and techniques of GIS. Topics include applications of geographic information system; spatial data collection; data accuracy and uncertainty; cartographic principles; data visualization; geographic analysis; legal, economic and ethical issues.

3C. Practical and professional skills	
<p>C4. Plan, conduct and present an independent project effectively and appropriately with reliance on guidance, to relate investigations to prior work and to reference</p>	<ul style="list-style-type: none"> ➤ ES 3240 Integrated Methods in Environmental Analysis I The course aims to cover basic methods and techniques needed in environmental science. Selected natural science methods and their basic principles and techniques are presented, with emphasis on interdisciplinary inquiry. Hands-on experience, laboratory and field work on some of the presented methods and techniques are offered. <p>These modules have a practical component (lab, use of specific software, use of social science methods) that prepares students to apply different methods to analyse environmental problems.</p> <p><u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A1 to A5.</u></p> <p>C4 <u>Where it is taught:</u> These skills are developed progressively, in all level 5 modules with a term project.</p> <p><u>Module Description as provided in LOs B3 and B4.</u> <u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A1 to A5.</u></p>

3D. Key/transferable skills	
<p>D5. Conduct independent study and self-evaluation</p>	<p><u>Module Description, Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A1 through A6.</u></p> <p>D5. <u>Where it is taught:</u> This is attained at level 6 (see L6 D5).</p>

Title of exit award at Level 5

DIPLOMA OF HIGHER EDUCATION IN ENVIRONMENTAL STUDIES (245 CREDITS)

Compulsory Modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY (LEVEL 4) – 20 CREDITS

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION (LEVEL 4) – 20 CREDITS

CH 1002 PRINCIPLES OF CHEMISTRY (LEVEL 4) – 20 CREDITS

GG 1000 ENVIRONMENTAL GEOLOGY (LEVEL 4) – 20 CREDITS

ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I (LEVEL 5) – 20 CREDITS

ES 32XX CLIMATE CHANGE (LEVEL 5) – 15 CREDITS

GG 3115 GEOGRAPHIC INFORMATION SYSTEMS (LEVEL 5) – 15 CREDITS

SO/ES 3002 ENVIRONMENT AND SOCIETY (LEVEL 5) – 15 CREDITS

ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION (LEVEL 5) – 15 CREDITS

ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT (LEVEL 5) – 15 CREDITS

ES 3139 THE ECONOMY AND THE ENVIRONMENT (LEVEL 5) – 15 CREDITS

Optional Modules Level 4:

BIOLOGY OPTION 1 (LEVEL 4) – 20 CREDITS

- BI 1000 INTRODUCTION TO BIOLOGY I (LEVEL 4) – 20 CREDITS
- BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES (LEVEL 4) – 20 CREDITS

BIOLOGY OPTION 2 (LEVEL 4) – 20 CREDITS

- BI 1101 INTRODUCTION TO BIOLOGY II (LEVEL 4) – 20 CREDITS
- BI 1007 ENVIRONMENTAL ECOLOGY (LEVEL 4) – 20 CREDITS

Optional Modules Level 5:

BI 3215 ENVIRONMENTAL HEALTH (LEVEL 5) – 15 CREDITS

ES/CH 3241 ENVIRONMENTAL CHEMISTRY (LEVEL 5) – 15 CREDITS

Programme Structure - LEVEL 6					
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensatable?	Semester runs in
ES 4017 ENVIRONMENTAL JUSTICE	15	Five out of the following:	15		
ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II	15	ES 4115 ENERGY AND ENVIRONMENT	15		
ES 4430 ENVIRONMENTAL STUDIES CAPSTONE	15	ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT	15		
SUBTOTAL	45	ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES	15		
		ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT	15		
		ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS	15		
		ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION	15		
		ES 4229 SUSTAINABLE CITIES	15		
		ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT	15		
		ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY	15		
		ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES	15		
TOTAL	120	SUBTOTAL	75		

Intended learning outcomes at Level 6 are listed below:

<u>Learning Outcomes – LEVEL 6</u>	
3A. Knowledge and understanding	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>A1. Demonstrate knowledge and understanding of core concepts, principles and tools in natural sciences, of the structure and functioning of natural systems and of their role in supporting life and human activities.</p> <p>A2. Demonstrate knowledge and understanding of the role of social sciences in analysing and addressing environmental problems and of the social, economic, political, health and ecological implications of human interactions with the environment.</p>	<p><u>Where it is taught:</u> This LO is attained by all level 4 and two level 5 modules as described in the previous sections.</p> <p><u>Where it is taught:</u> This LO is attained by level 4 and 5 modules as described in the previous sections and by the following L6 module ES 4017 ENVIRONMENTAL JUSTICE</p> <p>LEVEL 6: ➤ ES 4017 Environmental Justice</p> <p>The course explores how social inequalities, like social class, ethnicity and gender, relate with the environment; how they impact the environment and how the environment affects different social groups. Issues of environmental justice (distributive and participative), resource colonization, environmental insecurity and just sustainability are also analyzed</p> <p><u>Learning and Teaching Strategy:</u> In congruence with the Learning and Teaching strategy of the College, the following tools are used:</p>

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

- Class lectures, interactive learning (class discussions, group work), video presentations, invited speakers, articles from scientific journals and case studies discussed in class.
- Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class.
- the level 6 module ES 4017 Environmental Justice include a student term project and, in some cases, a presentation. Student project may involve field work.
- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material.
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

Assessment Methods:

In ES 4017, students are assessed in the following way:

Summative:

Project (3,000-3,500 words)	45%
Critical response to selected essay questions (take home)	45%
Portfolio	10%

The student project in the L6 ES 4017 module is also based on research on selected topics relevant to class material (literature review or primary data collection through observations, measurements, interviews, surveys) and

<u>Learning Outcomes – LEVEL 6</u>	
3A. Knowledge and understanding	
<p>A3. Demonstrate knowledge and understanding of human responses to contemporary environmental problems such as the development of environmental policy and law and environmental management, as well as of the importance of temporal and spatial scales in considering the environmental impact of human decisions in different environmental fields.</p>	<p>includes paper preparation (through which they develop skills for critical evaluation, analysis and synthesis), and in some cases oral presentation of student work and/or poster. Critical essays, role playing and case study analysis can also be included as part of the project. The final assessment consists of critical response to 3 selected essay questions; this assessment is expected to allow more in-depth engagement with the topic of the essay than a conventional 2-hour final examination.</p> <p>The Portfolio includes responsibility for a class meeting, and participation in other class activities.</p> <p>A3.</p> <p><u>Where it is taught:</u> The build-up of knowledge is gradual, starting from level 5 modules and continuing with the more specialized level 6 modules. Students take the following level 6 modules:</p> <p>LEVEL 6:</p> <ul style="list-style-type: none"> ➤ ES 4017 Environmental Justice The module explores how social inequalities, like social class, ethnicity and gender, relate with the environment; how they impact the environment and how the environment affects different social groups. Issues of environmental justice (distributive and participative), resource colonization, environmental insecurity and just sustainability are also analysed. ➤ ES 4115 Energy and the Environment

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

The course provides an overview of different energy resources with an analysis of main fossil fuels, nuclear, and renewable energy resources, energy management aspects with supply and demand technologies and practices, and finally key energy policies and associated challenges.

- **ES 4223 Water Resources: Threats and Sustainable Management**
World water resources and threats such as the increasing demand for water, overuse and depletion of freshwater resources, changes to the hydrologic cycle and water pollution. Current legislation on water and sustainable management of water resources.
- **ES 4124 Air Quality and Global Atmospheric Changes**
Discussion of the structure of the atmosphere, urban air pollution, acid deposition, stratospheric ozone depletion, global climate change and their impacts. Policy issues, international legislation, energy options and solutions towards a more sustainable future are examined.
- **ES 4126 Conservation of Wildlife and Mediterranean Ecosystems**
An analysis of terrestrial, aquatic and marine Mediterranean ecosystems and wildlife with emphasis on endangered and protected species, conservation and management techniques.
- **ES 4125 Sustainable Food Production: Soil and Environment**
An integrated approach to soil fertility and sustainable food production. The principles of soil formation and self-sustaining soil systems, biodiversity, biologically grown food, irrigation, water management and social values are also discussed. Focus on crops and livestock management cases, minimizing the severe irreversible soil damages to Mediterranean ecosystems. Sustainable food production and organic farming for the society. Food as a product, food policies.
- **ES 4328 Environmental Governance in the European Union**

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

- The course discusses the the growing global role of EU environmental and sustainable development policies, introduces and examines the major European and global environmental issues, the Environment Action Programme to 2030 and the renewed Sustainable Development strategy as well as the integration of environmental issues in the decisions and activities of other policy sectors.
- **ES 4229 Sustainable Cities**
This course studies cities and how these can be sustainable. It addresses the political, social and physical dimensions of sustainable cities. It explores why and how to plan living environments that are attractive, functional, appropriately scaled and enjoyable, while reducing their environmental impacts and the energy it takes to build them and operate them.
 - **ES 4135 Sustainable Use of Resources and Waste Management**
Integrated Solid Waste Management with emphasis on Waste Prevention, Reuse, Recycling and Composting. Discussion of principles and policies aiming at Zero Waste societies. Discussion of Municipal Solid Waste Management Systems based on current Environmental E.U Policy. Economic and regulatory tools applied in order to promote prevention, reuse and recycling strategies and implementation of the “polluter pays principle”. Discussion of disposal options, landfills and incinerators, with emphasis on their environmental impacts.
 - **ES 4XXX Special Topics in Environmental Studies**
The course explores specific contemporary environmental issues using an in-depth, integrated, multi/interdisciplinary approach. Topics may vary from year to year and draw from all environmental studies fields, following current research trends and priorities at global, EU and national level. Emphasis is given on presenting innovative research in the fields examined.

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following tools are used:

- Class lectures, interactive learning (class discussions, group work), video presentations, invited speakers, literature discussions on articles from scientific journals and case studies discussed in class and presented by the instructor or the students. Posters or multimedia presentations by students in some modules.
- Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class.
- Other formative activities (e.g. involvement with Blackboard online tools) which may be reviewed in class and/or peer-reviewed.
- Student term project with presentation, in most cases. Student project may involve field work.
- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material.
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

Assessment Methods:

In the L6 modules ES 4017 Environmental Justice and ES 4229 Sustainable Cities, the following assessment strategy, consisting of a project and a take-home exam is used:

Summative:

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

Project (3,000-3,500 words)	45%
Critical response to selected essay questions (take home)	45%
Portfolio	10%

Formative:

Critical response to selected questions during the semester	0%
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In the L6 courses ES4223 Water Resources: Threats and Sustainable Management, ES 4126 Conservation of Wildlife and Mediterranean Ecosystems and in ES 4xxx Special Topics in Environmental Studies the assessment method includes a student project (40%) and a Coursework Portfolio with 3 critical analysis assignments (60%), as described below.

Summative:

Project (3,000-3,500 words)	40%
Coursework Portfolio – summative: 3 coursework items selected among: critical response to selected essay questions, literature/journal discussions, case study analysis, multimedia presentation (e.g. videos, posters)	60%

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

Formative:

Critical response to selected questions during the semester – including a sample test	0%
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In the L6 courses ES4115 Energy and Environment, ES 4125 Sustainable Food Production: Soil and Environment and ES 4328 Environmental Governance in the EU, the assessment method consists of a project and a final examination, with weights 50:50, as follows:

Summative:

Project (3,000 to 3,500 words).	50%
Final examination (2 hours, comprehensive):	50%

Formative:

Critical response to selected questions during the semester – including a sample test	0%
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In the L6 courses ES4124 Air Quality and Global Atmospheric Changes and ES 4135 Sustainable Use of Resources and Waste Management, the assessment strategy consists of a project and a final examination, with weights 40:60, as follows:

Summative:

Project (3,000-3,500 words)	40%
Final examination (2 hours)	60%

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

A4. Demonstrate knowledge and understanding of the concepts of sustainability and sustainable development, their different dimensions and of their applications in addressing environmental issues in an integrated manner.

Formative:

Critical response to selected questions during the semester – including a sample test	0
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A4.

Where it is taught:

Students take the following level 6 modules:

ES 4017 ENVIRONMENTAL JUSTICE

Optional Modules:

Five out of the following:

ES 4115 ENERGY AND ENVIRONMENT

ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT

ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES

ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT

ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS

ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION

ES 4229 SUSTAINABLE CITIES

ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT

ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES

LEVEL 6

➤ **ES 4017 Environmental Justice**

The module explores how social inequalities, like social class, ethnicity and gender, relate with the environment; how they impact the environment and how the environment affects different social groups.

Issues of environmental justice (distributive and participative), resource

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

- colonization, environmental insecurity and just sustainability are also analysed.
- **ES 4115 Energy and Environment**
The module provides an overview of different energy resources with an analysis of main fossil fuels, nuclear, and renewable energy resources, energy management aspects with supply and demand technologies and practices, and finally key energy policies and associated challenges.
 - **ES 4223 Water Resources: Threats and Sustainable Management**
World water resources and threats such as the increasing demand for water, overuse and depletion of freshwater resources, changes to the hydrologic cycle and water pollution. Current legislation on water and sustainable management of water resources.
 - **ES 4124 Air Quality and Global Atmospheric Changes**
Discussion of the structure of the atmosphere, urban air pollution, acid deposition, stratospheric ozone depletion, global climate change and their impacts. Policy issues, international legislation, energy options and solutions towards a more sustainable future are examined.
 - **ES 4126 Conservation of Wildlife and Mediterranean Ecosystems**
An analysis of terrestrial, aquatic and marine Mediterranean ecosystems and wildlife with emphasis on endangered and protected species, conservation and management techniques.
 - **ES 4125 Sustainable Food Production: Soil and Environment**
An integrated approach to soil fertility and sustainable food production. The principles of soil formation and self-sustaining soil systems, biodiversity, biologically grown food, irrigation, water management and social values are also discussed. Focus on crops and livestock management cases, minimizing the severe irreversible soil damages to

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

- Mediterranean ecosystems. Sustainable food production and organic farming for the society. Food as a product, food policies.
- **ES 4327 Environmental Management Systems**
An exploration of the commonly applied Environmental Management Systems by corporations, with emphasis on international environmental management systems, such as ISO 14001 and EMAS. The Valdez principles and the Natural Step approach are also discussed.
 - **ES 4328 Environmental Policies in the European Union**
The course provides an introduction to the EU environmental policy, the seventh Environment Action Programme to 2020 and the renewed sustainable development strategy as well as the integration of environmental issues in the decisions and activities of other policy sectors.
 - **ES 4229 Sustainable Cities**
This course studies cities and how these can be sustainable. It addresses the political, social and physical dimensions of sustainable cities. It explores why and how to plan living environments that are attractive, functional, appropriately scaled and enjoyable, while reducing their environmental impacts and the energy it takes to build them and operate them.
 - **ES 4135 Sustainable Use of Resources and Waste Management**
Integrated Solid Waste Management with emphasis on Waste Prevention, Reuse, Recycling and Composting. Discussion of principles and policies aiming at Zero Waste societies. Discussion of Municipal Solid Waste Management Systems based on current Environmental E.U Policy. Economic and regulatory tools applied in order to promote prevention, reuse and recycling strategies and implementation of the

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

“polluter pays principle”. Discussion of disposal options, landfills and incinerators, with emphasis on their environmental impacts.

➤ **ES 4242 Education for the Environment and Sustainability**

This course aims to provide students with knowledge and skills on how to teach about / for / in the environment and for sustainability in order to engage students in the learning process and mobilize them towards a sustainable society. The history of Education for Sustainable Development, pedagogy and teaching methods will be discussed.

➤ **ES 4XXX Special Topics in Environmental Studies**

The course explores specific contemporary environmental issues using an in-depth, integrated, multi/interdisciplinary approach. Topics may vary from year to year and draw from all environmental studies fields, following current research trends and priorities at global, EU and national level. Emphasis is given on presenting innovative research in the fields examined.

Learning and Teaching Strategy: In congruence with the Learning and Teaching strategy of the College, the following tools are used:

For the above listed level 6 modules, the following teaching and learning methods are used:

- Class lectures, interactive learning (class discussions, group work), video presentations, invited speakers, literature discussions on articles from scientific journals and case studies discussed in class and presented by the instructor or the students. Posters or multimedia presentations by students in some modules.
- Exercises and primary source documents are assigned as homework, the answers and critical response to which are reviewed in class.

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

- Other formative activities (e.g. involvement with Blackboard online tools) which may be reviewed in class and/or peer-reviewed.
- Student term project with presentation, in most cases. Student project may involve field work.
- ES 4242 Education for the Environment and Sustainability involves a lesson plan.
- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material.
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

Assessment Methods:

The assessment strategies of all modules are described in the previous section (A1).

In the ES 4242 Education for the Environment and Sustainability module, students are assessed by selected take-home essay questions, a lesson plan and peer review of a colleague's lesson plan, as follows:

Summative:

Selected take-home essay questions	40%
Lesson plan (preparation and presentation or implementation) – with a theoretical for a selected environmental and sustainability topic	50%
Peer-review of a colleague's lesson plan	10%

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

A5. Demonstrate knowledge and understanding of a) basic tools in mathematics and statistics, as well as of quantitative techniques and data processing methods including Geographic Information Systems (GIS) techniques and b) of tools, techniques and research methods used to study and address environmental issues at an advanced level.

Formative:

Participation to selected educational activities during the semester and/or engagement with on-line tools	0%
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A5. a & b

Where it is taught:

Students take
ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II (LEVEL 6)
ES 4430 ENVIRONMENTAL STUDIES CAPSTONE (LEVEL 6)

In ES 4343 they get exposed to research methodology and methods used in both natural and social sciences and in ES 4430 they apply previous knowledge to research a specific topic.

➤ **ES 4343 Integrated Methods in Environmental Analysis II**

This module aims to cover basic methods and techniques needed in environmental studies and management. It includes the presentation of selected natural scientific and social scientific methods and their basic principles and techniques, in order to provide a sound basis for the interdisciplinary inquiry required in environmental studies. It also offers hands-on experience on some of the presented methods and techniques, since it involves laboratory work and a small field research project.

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

➤ **ES 4430 Environmental Studies Capstone**

This module is the culmination of the work in Environmental Studies. It is designed to provide students with opportunities to research significant environmental issues from multiple perspectives. It involves a project on an environmental issue/topic of local or national relevance.

Learning and Teaching Strategy:

In ES 4343, the following tools are used:

- Class lectures, interactive learning (class discussions, group work), video presentations, and case studies discussed in class.
- Laboratory and field practical work and reports
- Practical problems addressed (e.g. creation of a questionnaire)
- Formative activities (e.g. homework assignments, involvement with on-line tools) which are reviewed in class
- Students' projects and presentations
- Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over lecture/lab material.
- Use of a blackboard site, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

ES 4430 does not involve regular lectures and class discussion; students conduct independent research that includes literature review, collection of data and information, critical evaluation, analysis and synthesis. Depending on the project, laboratory or field work may be required. Students should regularly meet with teaching staff who should follow the progress of their work and provide feedback. They should make maximum use of the instructor's office hours and of the blackboard site.

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

Assessment Methods:

In ES 4343, students will prepare the proposal for their capstone projects and will be assessed by a project (the capstone proposal), practical work and take-home essay questions in the following way:

Summative:

Student's capstone proposal (2,000 - 3,000 words)	40%
Selected practical exercises	30%
Critical response to selected essay questions (take home)	30%

Formative:

Critical response to selected questions during the semester and/or engagement with on-line tools	0
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The students will be trained to social science methods used in environmental studies and will be assessed by selected practical exercises (application of methods) and critical response to selected essay questions that will allow them to engage in more depth with the material of the module than what would be possible in an in-class 2-hour examination. In this module, they will apply knowledge on research methodology by preparing the proposal for their capstone projects that they will conduct in the Environmental Studies Capstone module.

Student performance in ES 4430 is assessed by the capstone project as follows:

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

<p>A6. Demonstrate knowledge and understanding in more specialized fields of environmental studies (such as management and conservation of natural resources, policy and environmental management of corporations)</p>	<p>Summative:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Research project (6,500 - 7,000 words)</td> <td style="padding: 2px; text-align: center;">100%</td> </tr> </table>		Research project (6,500 - 7,000 words)	100%
	Research project (6,500 - 7,000 words)	100%		
<p>Formative:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Regular meetings with instructor at different stages of research in which students receive feedback on their work (use of appropriate tools and techniques, preparation of structured documentation, planning and meeting project deadlines will be assessed)</td> <td style="padding: 2px; text-align: center;">0%</td> </tr> </table>		Regular meetings with instructor at different stages of research in which students receive feedback on their work (use of appropriate tools and techniques, preparation of structured documentation, planning and meeting project deadlines will be assessed)	0%	
Regular meetings with instructor at different stages of research in which students receive feedback on their work (use of appropriate tools and techniques, preparation of structured documentation, planning and meeting project deadlines will be assessed)	0%			
<p>The capstone project is the culmination of students' work in the programme and will consist of a one-semester research project on a selected topic; research will be based on literature review or primary data collection (through observations, measurements, interviews, surveys). Students will have to synthesize a paper in which they will provide a background on the topic, describe their methodology, present the results of their work, interpret and discuss them and provide conclusions. They will present their work orally to Environmental Studies teaching staff and students. The project may also involve poster preparation and/or production of audiovisual material.</p> <p>An analytical description of the requirements of all projects and of the assessment method is always included as part of the module information package.</p>				
<p>A6. <u>Where it is taught:</u></p>				

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

Students take five out of nine level 6 optional modules in which they acquire knowledge in specialized fields of environmental studies:

ES 4115 ENERGY AND ENVIRONMENT
ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT
ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES
ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT
ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS
ES 4328 ENVIRONMENTAL POLICIES IN THE EUROPEAN UNION
ES 4229 SUSTAINABLE CITIES
ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT
ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY
ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES

- **ES 4115 Energy and Environment**
The module provides an overview of different energy resources with an analysis of main fossil fuels, nuclear, and renewable energy resources, energy management aspects with supply and demand technologies and practices, and finally key energy policies and associated challenges.
- **ES 4223 Water Resources: Threats and Sustainable Management**
World water resources and threats such as the increasing demand for water, overuse and depletion of freshwater resources, changes to the hydrologic cycle and water pollution. Current legislation on water and sustainable management of water resources.
- **ES 4124 Air Quality and Global Atmospheric Changes**
Discussion of the structure of the atmosphere, urban air pollution, acid deposition, stratospheric ozone depletion, global climate change and

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

their impacts. Policy issues, international legislation, energy options and solutions towards a more sustainable future are examined.

- **ES 4126 Conservation of Wildlife and Mediterranean Ecosystems**
An analysis of terrestrial, aquatic and marine Mediterranean ecosystems and wildlife with emphasis on endangered and protected species, conservation and management techniques.
- **ES 4125 Sustainable Food Production: Soil and Environment**
An integrated approach to soil fertility and sustainable food production. The principles of soil formation and self-sustaining soil systems, biodiversity, biologically grown food, irrigation, water management and social values are also discussed. Focus on crops and livestock management cases, minimizing the severe irreversible soil damages to Mediterranean ecosystems. Sustainable food production and organic farming for the society. Food as a product, food policies.
- **ES 4328 Environmental Governance in the European Union**
The course discusses the the growing global role of EU environmental and sustainable development policies, introduces and examines the major European and global environmental issues, the Environment Action Programme to 2030 and the renewed Sustainable Development strategy as well as the integration of environmental issues in the decisions and activities of other policy sectors..
- **ES 4229 Sustainable Cities**
This course studies cities and how these can be sustainable. It addresses the political, social and physical dimensions of sustainable cities. It explores why and how to plan living environments that are attractive, functional, appropriately scaled and enjoyable, while reducing their environmental impacts and the energy it takes to build them and operate them.
- **ES 4135 Sustainable Use of Resources and Waste Management**

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

Integrated Solid Waste Management with emphasis on Waste Prevention, Reuse, Recycling and Composting. Discussion of principles and policies aiming at Zero Waste societies. Discussion of Municipal Solid Waste Management Systems based on current Environmental E.U Policy. Economic and regulatory tools applied in order to promote prevention, reuse and recycling strategies and implementation of the “polluter pays principle”. Discussion of disposal options, landfills and incinerators, with emphasis on their environmental impacts.

➤ **ES 4242 Education for the Environment and Sustainability**

This course aims to provide students with knowledge and skills on how to teach about / for / in the environment and for sustainability in order to engage students in the learning process and mobilize them towards a sustainable society. The history of Education for Sustainable Development, pedagogy and teaching methods will be discussed.

➤ **ES 4XXX Special Topics in Environmental Studies**

The course explores specific contemporary environmental issues using an in-depth, integrated, multi/interdisciplinary approach. Topics may vary from year to year and draw from all environmental studies fields, following current research trends and priorities at global, EU and national level. Emphasis is given on presenting innovative research in the fields examined.

Learning and Teaching Strategy as well as Assessment Strategy are described in the previous sections A3 and A4.

<u>Learning Outcomes – LEVEL 6</u>	
3A. Knowledge and understanding	
3B. Cognitive skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>Upon completion of the Environmental Studies program, students will be able to:</p> <p>B1. Recognize the moral and ethical issues of investigations, appreciate the need for professional codes of conduct and undertake a reasoned moral assessment of actions/persons/business practices.</p>	<p>B1. <u>Where it is taught:</u> The moral and ethical issues of investigations are discussed throughout the curriculum, but are mostly emphasized in the following modules: LEVEL 6: ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II ES 4430 ENVIRONMENTAL STUDIES CAPSTONE ES 4017 ENVIRONMENTAL JUSTICE Optional Modules: ES 4115 ENERGY AND ENVIRONMENT ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT</p>

3B. Cognitive skills	
	<p>ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS</p> <p>ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION</p> <p>ES 4229 SUSTAINABLE CITIES</p> <p>ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT</p> <p>ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY</p> <p>ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES</p> <ul style="list-style-type: none"> ➤ ES 4017 Environmental Justice The course explores how social inequalities, like social class, ethnicity and gender, relate with the environment; how they impact the environment and how the environment affects different social groups. Issues of environmental justice (distributive and participative), resource colonization, environmental insecurity and just sustainability are also analyzed. ➤ ES 4115 Energy and Environment The module provides an overview of different energy resources with an analysis of main fossil fuels, nuclear, and renewable energy resources, energy management aspects with supply and demand technologies and practices, and finally key energy policies and associated challenges. ➤ ES 4223 Water Resources: Threats and Sustainable Management World water resources and threats such as the increasing demand for water, overuse and depletion of freshwater resources, changes to the hydrologic cycle and water pollution. Current legislation on water and sustainable management of water resources. ➤ ES 4124 Air Quality and Global Atmospheric Changes Discussion of the structure of the atmosphere, urban air pollution, acid deposition, stratospheric ozone depletion, global climate change and

3B. Cognitive skills	
	<p>their impacts. Policy issues, international legislation, energy options and solutions towards a more sustainable future are examined.</p> <ul style="list-style-type: none"> ➤ ES 4126 Conservation of Wildlife and Mediterranean Ecosystems An analysis of terrestrial, aquatic and marine Mediterranean ecosystems and wildlife with emphasis on endangered and protected species, conservation and management techniques. ➤ ES 4125 Sustainable Food Production: Soil and Environment An integrated approach to soil fertility and sustainable food production. The principles of soil formation and self-sustaining soil systems, biodiversity, biologically grown food, irrigation, water management and social values are also discussed. Focus on crops and livestock management cases, minimizing the severe irreversible soil damages to Mediterranean ecosystems. Sustainable food production and organic farming for the society. Food as a product, food policies. ➤ ES 4328 Environmental Governance in the European Union The course discusses the the growing global role of EU environmental and sustainable development policies, introduces and examines the major European and global environmental issues, the Environment Action Programme to 2030 and the renewed Sustainable Development strategy as well as the integration of environmental issues in the decisions and activities of other policy sectors.. ➤ ES 4229 Sustainable Cities This course studies cities and how these can be sustainable. It addresses the political, social and physical dimensions of sustainable cities. It explores why and how to plan living environments that are attractive, functional, appropriately scaled and enjoyable, while reducing their environmental impacts and the energy it takes to build them and operate them. ➤ ES 4135 Sustainable Use of Resources and Waste Management Integrated Solid Waste Management with emphasis on Waste Prevention, Reuse, Recycling and Composting. Discussion of principles

3B. Cognitive skills	
<p>B2. Collect and analyse data and information on environmental issues using a range of techniques appropriate to the subject.</p>	<p>and policies aiming at Zero Waste societies. Discussion of Municipal Solid Waste Management Systems based on current Environmental E.U Policy. Economic and regulatory tools applied in order to promote prevention, reuse and recycling strategies and implementation of the “polluter pays principle”. Discussion of disposal options, landfills and incinerators, with emphasis on their environmental impacts.</p> <ul style="list-style-type: none"> ➤ ES 4242 Education for the Environment and Sustainability This course aims to provide students with knowledge and skills on how to teach about / for / in the environment and for sustainability in order to engage students in the learning process and mobilize them towards a sustainable society. The history of Education for Sustainable Development, pedagogy and teaching methods will be discussed. ➤ ES 4XXX Special Topics in Environmental Studies The course explores specific contemporary environmental issues using an in-depth, integrated, multi/interdisciplinary approach. Topics may vary from year to year and draw from all environmental studies fields, following current research trends and priorities at global, EU and national level. Emphasis is given on presenting innovative research in the fields examined. <p><u>Learning and Teaching Strategy as well as Assessment Strategy are described in the previous sections A2 to A4.</u></p> <p>B2.</p> <p><u>Where it is taught:</u> This learning outcome is achieved through all the modules of the curriculum. In level 4 natural science modules, students learn basic methods in natural sciences, including the ability to collect and process data and information. In most higher level modules they collect and analyse data and/or information for</p>

3B. Cognitive skills	
<p>B3. Critically evaluate the reliability, validity and significance of data and information collected and the evidence provided to support conclusions.</p> <p>B4. Categorize ideas, data and information, reformat and transform them towards a given purpose and design solutions.</p>	<p>their term projects, in GG 3115 Geographic Information Systems and ES 3240 and ES 4343 Integrated Methods in Environmental Analysis modules they get exposed to a range of techniques needed for environmental research. In the ES 4430 Environmental Studies Capstone they collect and analyse data and information for their thesis project.</p> <p><u>Module Description, Learning and Teaching Strategy and Assessment Methods as outlined above in Learning Outcomes (LOs) of section A (A2 through A6).</u></p> <p>B3 and B4.</p> <p><u>Where it is taught:</u> This learning outcome is achieved through all the level 5 and level 6 modules of the curriculum that include a term project. In level 6 modules students develop the ability to critically evaluate data and information through essay questions, case study analyses, critical responses to selected questions and term projects. In the projects, students develop their ability for synthesis, as they are asked to propose solutions based on the information collected and analysed. In level 6 modules, students conduct longer research projects on more specialized topics.</p> <p>LEVEL 6 ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II ES 4430 ENVIRONMENTAL STUDIES CAPSTONE ES 4017 ENVIRONMENTAL JUSTICE</p> <p>Optional Modules: Five out of the following: ES 4115 ENERGY AND ENVIRONMENT ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES</p>

3B. Cognitive skills	
	<p>ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION ES 4229 SUSTAINABLE CITIES ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES</p> <p>LEVEL 6</p> <ul style="list-style-type: none"> ➤ ES 4017 Environmental Justice The course explores how social inequalities, like social class, ethnicity and gender, relate with the environment; how they impact the environment and how the environment affects different social groups. Issues of environmental justice (distributive and participative), resource colonization, environmental insecurity and just sustainability are also analyzed. ➤ ES 4343 Integrated Methods in Environmental Analysis II This module aims to cover basic methods and techniques needed in environmental studies and management. It includes the presentation of selected natural scientific and social scientific methods and their basic principles and techniques, in order to provide a sound basis for the interdisciplinary inquiry required in environmental studies. It also offers hands-on experience on some of the presented methods and techniques, since it involves laboratory work and a small field research project. ➤ ES 4430 Environmental Studies Capstone This module is the culmination of the work in Environmental Studies. It is designed to provide students with opportunities to research significant environmental issues from multiple perspectives. It involves a project on an environmental issue/topic of local or national relevance. ➤ ES 4115 Energy and Environment

3B. Cognitive skills	
	<p>The module provides an overview of different energy resources with an analysis of main fossil fuels, nuclear, and renewable energy resources, energy management aspects with supply and demand technologies and practices, and finally key energy policies and associated challenges.</p> <ul style="list-style-type: none"> ➤ ES 4223 Water Resources: Threats and Sustainable Management World water resources and threats such as the increasing demand for water, overuse and depletion of freshwater resources, changes to the hydrologic cycle and water pollution. Current legislation on water and sustainable management of water resources. ➤ ES 4124 Air Quality and Global Atmospheric Changes Discussion of the structure of the atmosphere, urban air pollution, acid deposition, stratospheric ozone depletion, global climate change and their impacts. Policy issues, international legislation, energy options and solutions towards a more sustainable future are examined. ➤ ES 4126 Conservation of Wildlife and Mediterranean Ecosystems An analysis of terrestrial, aquatic and marine Mediterranean ecosystems and wildlife with emphasis on endangered and protected species, conservation and management techniques. ➤ ES 4125 Sustainable Food Production: Soil and Environment An integrated approach to soil fertility and sustainable food production. The principles of soil formation and self-sustaining soil systems, biodiversity, biologically grown food, irrigation, water management and social values are also discussed. Focus on crops and livestock management cases, minimizing the severe irreversible soil damages to Mediterranean ecosystems. Sustainable food production and organic farming for the society. Food as a product, food policies. ➤ ES 4328 Environmental Governance in the European Union The course provides an introduction to the EU environmental policy, the seventh Environment Action Programme to 2020 and the renewed sustainable development strategy as well as the integration of

3B. Cognitive skills	
	<p>environmental issues in the decisions and activities of other policy sectors.</p> <ul style="list-style-type: none"> ➤ ES 4229 Sustainable Cities This course studies cities and how these can be sustainable. It addresses the political, social and physical dimensions of sustainable cities. It explores why and how to plan living environments that are attractive, functional, appropriately scaled and enjoyable, while reducing their environmental impacts and the energy it takes to build them and operate them. ➤ ES 4135 Sustainable Use of Resources and Waste Management Integrated Solid Waste Management with emphasis on Waste Prevention, Reuse, Recycling and Composting. Discussion of principles and policies aiming at Zero Waste societies. Discussion of Municipal Solid Waste Management Systems based on current Environmental E.U Policy. Economic and regulatory tools applied in order to promote prevention, reuse and recycling strategies and implementation of the “polluter pays principle”. Discussion of disposal options, landfills and incinerators, with emphasis on their environmental impacts. ➤ ES 4242 Education for the Environment and Sustainability This course aims to provide students with knowledge and skills on how to teach about / for / in the environment and for sustainability in order to engage students in the learning process and mobilize them towards a sustainable society. The history of Education for Sustainable Development, pedagogy and teaching methods will be discussed. ➤ ES 4XXX Special Topics in Environmental Studies The course explores specific contemporary environmental issues using an in-depth, integrated, multi/interdisciplinary approach. Topics may vary from year to year and draw from all environmental studies fields, following current research trends and priorities at global, EU and national level. Emphasis is given on presenting innovative research in the fields examined.

3B. Cognitive skills	
<p>B5. Identify key elements of environmental problems and apply appropriate interdisciplinary knowledge and skills to their solution.</p>	<p><u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs of section A (A2 through A6).</u></p> <p>B5.</p> <p><u>Where it is taught:</u> This learning outcome is achieved through the most advanced, level 6 modules of the curriculum. Students use knowledge from lower level modules to identify key elements of environmental problems and apply it to their solution.</p> <p>LEVEL 6</p> <p>ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II ES 4430 ENVIRONMENTAL STUDIES CAPSTONE ES 4017 ENVIRONMENTAL JUSTICE</p> <p>Optional Modules: Five out of the following: ES 4115 ENERGY AND ENVIRONMENT ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION ES 4229 SUSTAINABLE CITIES ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES</p>

3B. Cognitive skills	
	<p>LEVEL 6</p> <ul style="list-style-type: none"> ➤ ES 4017 Environmental Justice The course explores how social inequalities, like social class, ethnicity and gender, relate with the environment; how they impact the environment and how the environment affects different social groups. Issues of environmental justice (distributive and participative), resource colonization, environmental insecurity and just sustainability are also analyzed. ➤ ES 4343 Integrated Methods in Environmental Analysis II This module aims to cover basic methods and techniques needed in environmental studies and management. It includes the presentation of selected natural scientific and social scientific methods and their basic principles and techniques, in order to provide a sound basis for the interdisciplinary inquiry required in environmental studies. It also offers hands-on experience on some of the presented methods and techniques, since it involves laboratory work and a small field research project. ➤ ES 4430 Environmental Studies Capstone This module is the culmination of the work in Environmental Studies. It is designed to provide students with opportunities to research significant environmental issues from multiple perspectives. It involves a project on an environmental issue/topic of local or national relevance. ➤ ES 4115 Energy and Environment The module provides an overview of different energy resources with an analysis of main fossil fuels, nuclear, and renewable energy resources, energy management aspects with supply and demand technologies and practices, and finally key energy policies and associated challenges. ➤ ES 4223 Water Resources: Threats and Sustainable Management World water resources and threats such as the increasing demand for water, overuse and depletion of freshwater resources, changes to the hydrologic cycle and water pollution. Current legislation on water and sustainable management of water resources.

3B. Cognitive skills	
	<ul style="list-style-type: none"> ➤ ES 4124 Air Quality and Global Atmospheric Changes Discussion of the structure of the atmosphere, urban air pollution, acid deposition, stratospheric ozone depletion, global climate change and their impacts. Policy issues, international legislation, energy options and solutions towards a more sustainable future are examined. ➤ ES 4126 Conservation of Wildlife and Mediterranean Ecosystems An analysis of terrestrial, aquatic and marine Mediterranean ecosystems and wildlife with emphasis on endangered and protected species, conservation and management techniques. ➤ ES 4125 Sustainable Food Production: Soil and Environment An integrated approach to soil fertility and sustainable food production. The principles of soil formation and self-sustaining soil systems, biodiversity, biologically grown food, irrigation, water management and social values are also discussed. Focus on crops and livestock management cases, minimizing the severe irreversible soil damages to Mediterranean ecosystems. Sustainable food production and organic farming for the society. Food as a product, food policies. ➤ ES 4328 Environmental Governance in the European Union The course provides an introduction to the EU environmental policy, the seventh Environment Action Programme to 2020 and the renewed sustainable development strategy as well as the integration of environmental issues in the decisions and activities of other policy sectors. ➤ ES 4229 Sustainable Cities This course studies cities and how these can be sustainable. It addresses the political, social and physical dimensions of sustainable cities. It explores why and how to plan living environments that are attractive, functional, appropriately scaled and enjoyable, while reducing their environmental impacts and the energy it takes to build them and operate them. ➤ ES 4135 Sustainable Use of Resources and Waste Management

3B. Cognitive skills

Integrated Solid Waste Management with emphasis on Waste Prevention, Reuse, Recycling and Composting. Discussion of principles and policies aiming at Zero Waste societies. Discussion of Municipal Solid Waste Management Systems based on current Environmental E.U Policy. Economic and regulatory tools applied in order to promote prevention, reuse and recycling strategies and implementation of the “polluter pays principle”. Discussion of disposal options, landfills and incinerators, with emphasis on their environmental impacts.

➤ **ES 4242 Education for the Environment and Sustainability**

This course aims to provide students with knowledge and skills on how to teach about / for / in the environment and for sustainability in order to engage students in the learning process and mobilize them towards a sustainable society. The history of Education for Sustainable Development, pedagogy and teaching methods will be discussed.

➤ **ES 4XXX Special Topics in Environmental Studies**

The course explores specific contemporary environmental issues using an in-depth, integrated, multi/interdisciplinary approach. Topics may vary from year to year and draw from all environmental studies fields, following current research trends and priorities at global, EU and national level. Emphasis is given on presenting innovative research in the fields examined.

Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A2 through A6.

3C. Practical and professional skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>Upon completion of the Environmental Studies program, students will be able to:</p> <p>C1. Describe and record materials in the field and laboratory and to interpret practical results in a logical manner.</p> <p>C2. Use appropriate laboratory and field equipment competently and safely</p>	<p>C1 and C2:</p> <p><u>Where it is taught:</u> Students attain these learning outcomes by taking modules that include a lab component and /or field trip</p> <p>The ES 4430 ENVIRONMENTAL STUDIES CAPSTONE may also include a lab component, depending on project. The ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT module includes field work and a project based on this work.</p> <p>LEVEL 6:</p> <ul style="list-style-type: none"> ➤ ES 4430 Environmental Studies Capstone This module is the culmination of the work in Environmental Studies. It is designed to provide students with opportunities to research significant environmental issues from multiple perspectives. It involves a project on an environmental issue/topic of local or national relevance. ➤ ES 4125 Sustainable Food Production: Soil and Environment An integrated approach to soil fertility and sustainable food production. The principles of soil formation and self-sustaining soil systems, biodiversity, biologically grown food, irrigation, water management and social values are also discussed. Focus on crops and livestock management cases, minimizing the severe irreversible soil damages to Mediterranean ecosystems. Sustainable food production and organic farming for the society. Food as a product, food policies. <p><u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A1, A5b) and A6.</u></p>

3C. Practical and professional skills	
<p>C3. Select and apply a range of methods, including spatial technologies, to study and solve address environmental problems</p>	<p>An essential element of most of these modules is the lab component or field trip. Most of them include reports on the practical work (lab or field activities) or a lab exam, as a way to assess the ability to interpret practical results.</p> <p>C3. <u>Where it is taught:</u> These skills are mostly developed in modules through which students learn and apply methods used in environmental analysis such as: ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II ES 4430 ENVIRONMENTAL STUDIES CAPSTONE</p> <p>LEVEL 6</p> <ul style="list-style-type: none"> ➤ ES 4343 Integrated Methods in Environmental Analysis II This module aims to cover basic methods and techniques needed in environmental studies and management. It includes the presentation of selected natural scientific and social scientific methods and their basic principles and techniques, in order to provide a sound basis for the interdisciplinary inquiry required in environmental studies. It also offers hands-on experience on some of the presented methods and techniques, since it involves laboratory work and a small field research project. ➤ ES 4430 Environmental Studies Capstone This module is the culmination of the work in Environmental Studies. It is designed to provide students with opportunities to research significant environmental issues from multiple perspectives. It involves a project on an environmental issue/topic of local or national relevance. <p>These modules have a practical component (lab, use of specific software, use of social science methods) that prepares students to apply different methods to analyse environmental problems.</p>

3C. Practical and professional skills	
<p>C4. Plan, conduct and present an independent project effectively and appropriately with reliance on guidance, to relate investigations to prior work and to reference</p>	<p><u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A5a) and A5b) .</u></p> <p>C4 <u>Where it is taught:</u> These skills are developed progressively, in all level 6 modules with a term project.</p> <p>LEVEL 6 ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II ES 4430 ENVIRONMENTAL STUDIES CAPSTONE ES 4017 ENVIRONMENTAL JUSTICE Optional Modules: Five out of the following: ES 4115 ENERGY AND ENVIRONMENT ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION ES 4229 SUSTAINABLE CITIES ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES</p> <p><u>Module Description as provided in LOs B3 and B4.</u></p>

3C. Practical and professional skills	
	<u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A2 through A6.</u>
3D. Key/transferable skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>Upon completion of the Environmental Studies program, students will be able to:</p> <p>D1. Manage, select and process information from a variety of sources to support findings and hypotheses, develop a critical approach to academic literature and other sources of information and develop the ability to perform independent research (using simple to more complex research strategies) in different environmental studies fields.</p>	<p>D1. <u>Where it is taught:</u> These skills are attained in level 6 modules with a research project. For these projects, students usually do a literature review, critically evaluate information collected and develop their own ideas and solutions to problems. LEVEL 6 ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II ES 4430 ENVIRONMENTAL STUDIES CAPSTONE ES 4017 ENVIRONMENTAL JUSTICE Optional Modules: Five out of the following: ES 4115 ENERGY AND ENVIRONMENT ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION ES 4229 SUSTAINABLE CITIES ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT</p>

3D. Key/transferable skills	
<p>D2. a) Communicate effectively to a variety of audiences in written, graphical and verbal forms, to engage in debate in a professional manner and</p> <p>b) Produce detailed and coherent project reports.</p>	<p>ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES</p> <p><u>Module Description as provided in LOs B3 and B4.</u> <u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A2 through A6.</u></p> <p>D2. <u>Where it is taught:</u> a) This skill is attained in all modules (in level 4 modules through essay questions and lab reports and in level 5 and through essay questions and written projects that in some cases include a presentation)</p> <p>b) These skills are attained in all level 6 modules with a project, as students have to communicate the results of their research in written form and, in many cases, they also make an oral presentation of their work:</p> <p>LEVEL 6 ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II ES 4430 ENVIRONMENTAL STUDIES CAPSTONE ES 4017 ENVIRONMENTAL JUSTICE</p> <p>Optional Modules: Five out of the following: ES 4115 ENERGY AND ENVIRONMENT ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT</p>

3D. Key/transferable skills	
<p>D3. interact effectively within a team/learning group, giving and receiving information and ideas and modifying responses when appropriate.</p> <p>D4. Acquire, process, interpret and present data using appropriate qualitative and quantitative techniques including use of information technology and the internet, mathematics, statistics and GIS.</p>	<p>ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION ES 4229 SUSTAINABLE CITIES ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES</p> <p><u>Module Description as provided in LOs B3 and B4.</u> <u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A2 through A6.</u></p> <p>D3. <u>Where it is taught:</u> LEVEL 6: ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II</p> <p><u>Module Descriptions, Learning and Teaching Strategy and Assessment Methods as outlined above in LO A5.</u></p> <p>D4. <u>Where it is taught:</u> These skills are attained progressively in modules of all levels. In level 6 they get exposed to natural science and social science methods which they apply in their research projects.</p> <p><u>Module Description, Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A1 through A6.</u></p>

3D. Key/transferable skills	
D5. Conduct independent study and self-evaluation	<p>D5. <u>Where it is taught:</u></p> <p>ES 4430 Environmental Studies Capstone (level 6 modules) in which they develop the ability to plan and conduct a research project with minimum guidance (autonomy in work). In ES 4430 they make use of feedback, challenge received opinion and reflect on action (self-evaluation). LEVEL 6:</p> <ul style="list-style-type: none"> ➤ ES 4343 Integrated Methods in Environmental Analysis II This module aims to cover basic methods and techniques needed in environmental studies and management. It includes the presentation of selected natural scientific and social scientific methods and their basic principles and techniques, in order to provide a sound basis for the interdisciplinary inquiry required in environmental studies. It also offers hands-on experience on some of the presented methods and techniques, since it involves laboratory work and a small field research project. ➤ ES 4430 Environmental Studies Capstone This module is the culmination of the work in Environmental Studies. It is designed to provide students with opportunities to research significant environmental issues from multiple perspectives. It involves a project on an environmental issue/topic of local or national relevance. <p><u>Learning and Teaching Strategy and Assessment Methods as outlined above in LOs A5.</u></p>

[Please insert here title of exit awards(s) at Level 6]

4. Distinctive features of the programme structure

- **Where applicable, this section provides details on distinctive features such as:**
 - where in the structure above a professional/placement year fits in and how it may affect progression
 - any restrictions regarding the availability of elective modules
 - where in the programme structure students must make a choice of pathway/route
- **Additional considerations for apprenticeships:**
 - how the delivery of the academic award fits in with the wider apprenticeship
 - the integration of the 'on the job' and 'off the job' training
 - how the academic award fits within the assessment of the apprenticeship

N/A

5. Support for students and their learning.

(For apprenticeships this should include details of how student learning is supported in the work place)

All new students participate in an orientation programme as they begin their first semester at the College. The orientation program is designed to introduce them to the campus, the academic system, College regulations and policies, and student life.

Student Success Center (SSC)

The Student Success Centre supports students by offering comprehensive, integrated services in the areas of academic advising, OU validation issues, student records, registration, and payments in a one-stop area. The Centre is committed to providing students with consistent, high-quality service, both in person and through technology. The Student Success Centre aims to create the optimum conditions so that students can follow the path to academic success.

Students may visit the Student Success Centre to pay a bill, request a certificate, obtain a form, arrange to bring a visitor on campus, obtain their transcript, see an academic advisor, ask about OU validation, change a course, and obtain or replace their student ID.

The SSC web page has been set up to reflect the one-stop concept of the Centre and includes information from different departments. It may be accessed from the "Quick Links" on the ACG homepage (www.acg.edu) and it allows students to print forms or view the academic calendar, academic policies, final exams schedule, course schedule, graduation instructions, major requirements, frequently asked questions (FAQs), the e-mail directory, and financial aid and international student information. From the SSC web page students may choose to log on to the myACG portal, where they can print their personal course schedule and

their unofficial transcript. To log on, students need to go to the SSC and get their PIN, which is private, should not be shared with anyone, and will be given to the students only if they have no obligations (business office, library, or academic advising).

Academic Advising

All students are assigned an academic advisor responsible for assisting them in gaining the greatest benefit from their educational experience at the College. Good academic advising is a vital part of the learning process and an integral part of the basic teaching function of the College. Effective academic advising provides specific aid to students in considering and completing academic programs, but it goes beyond mere course scheduling; it includes planning, decision-making, implementation, and evaluation of academic, personal, and career-related matters, and exploration. The College assigns all entering freshmen a First-Year advisor from the Office of Academic Advising. Thereafter, the advising programme is faculty-based and fosters personal contact between students and faculty. Department Heads and Programme Coordinators act as educational consultants.

New incoming students and continuing Deree-ACG students are required to consult every semester and during the announced advising period with an advisor at the Office of Academic Advising.

Advisors never make decisions for students. Their overriding objective is to assist students in developing the maturity required to make their own choices and to be responsible for the consequences of those choices.

Student Academic Support Services (SASS)

Student Academic Support Services (SASS) provides support to the learning of Deree students at the undergraduate and graduate level through a variety of approaches encouraging participatory learning. SASS learning facilitators recognize that individual qualities and efforts vary; therefore, facilitators adopt a learner-centred approach without undue interference in order to promote individual development and to respond to the needs of each student. The goal of SASS is to help students become insightful readers, effective critical thinkers, and independent learners.

Student Academic Support Services offers two major types of academic support:

1. One-on-one Sessions, conducted on a one-on-one basis between a facilitator and a student. They are provided on a first-come-first-served basis and cover a wide range of college skills.
2. Group Sessions are of two kinds, both designed to emphasize direct interaction between participants:
 - a. Academic-skills workshops are offered on demand. They may focus on sharpening a quantitative or qualitative skill for a course or help participants sharpen conversational skills in a foreign language.
 - b. Study-skills workshops are offered regularly. They are designed to help participants improve a particular study skill, such as note-taking or exam preparation.

Disability and Learning Differences

The College Committee on Disability and Learning Differences monitors and recommends policies and procedures to benefit individuals with disabilities and learning differences. In addition, it makes recommendations in consultation with relevant academic departments/ areas regarding special assessments to be given by tutors to specific students with disability and/or learning differences.

The Committee proposes alternative assessment methods for specific students with disability and/or learning differences in consultation with relevant academic departments/ areas to ensure appropriateness of assessment method. The Committee is obliged to follow the advice of the department with regard to appropriateness and communicate with the Registrar about this. The Committee on Disability and Learning Differences submits the list of OU students with disabilities and learning difficulties and their approved alternative assessment methods to the OU Validation Office and Registrar.

6. Criteria for admission

The Admissions Process

To qualify for admission to the academic programs of the College, applicants must demonstrate that they possess the appropriate qualifications to enable them to be successful in the program of their choice. To this end, applicants must meet the following requirements:

The standard minimum entry requirement for the major's programme is the following: 14/20 in the Greek system, an overall average grade of C in the US system, or 24 and above in the International Baccalaureate or the equivalent of any other educational grading system. Applicants whose grades are between 11/20-13.99/20 or its equivalent, may be admitted to the College on a provisional basis.

Students admitted on a provisional basis will be required to fulfil the following conditions in order to be allowed to continue on their selected major after the completion of one academic year after their acceptance to Deree:

1. Meet with an assigned advisor at the Academic Advising Office at least twice every month or whenever the advisor thinks it is necessary. The assigned advisor will monitor the student progress very closely and may require that they seek academic help through the Student Academic Support Services.
2. The number of modules students will be allowed to register for will be determined by their English language placement (see section "English Language Requirements"). However, in no case will they be allowed to register for a total of more than 2 modules if placed in EAP 1002 or for more than 4 modules if placed in WP 1010. Students with provisional status who are placed in EAP 999, EAP 1000, EAP 1001 must first complete their English for Academic Purpose modules before they begin taking College level modules along with EAP 1002.
3. Students who have successfully completed only the EAP sequence during their first academic year will be able to continue.
4. Achieve a minimum cumulative average (CI) of at least 2.0 after one academic year.
5. After the completion of one academic year on provisional status, students' performance will be reviewed by the Committee on Academic Standards and Policies (CASP), which will decide on student progression and/or new conditions.
6. Students on provisional status are subject to the College probation policy (see section "Academic Probation").

The following is required for all freshmen applicants:

1. A completed application form.
2. A letter of recommendation from an academic teacher or professor.
3. An official secondary school transcript and an official copy of a secondary diploma, both legally certified.
4. A certified copy of their identity card for Greek citizens or a valid passport for non-Greek citizens.

5. An interview with an admissions counsellor.
6. Evidence of proficiency in English.

Evidence of Proficiency in English

All applicants must demonstrate proficiency in the English language either by taking the College's English Placement Test (EPT) or by submitting any evidence derived from one of the following tests:

Pearson test of Academic English (PTE Academic): 58 or greater
 Michigan State University Certificate of Language Proficiency (MSU-CELP)
 Michigan Proficiency Certificate
 Cambridge Proficiency Certificate
 Cambridge Advanced English (CAE) with Grade A only
 International Baccalaureate Certificate*
 International Baccalaureate Diploma
 IELTS: (academic) 6.5 or above
 SAT: 450 or above
 ACT: 18 or above
 TOEFL (paper based): 567 or above
 TOEFL (computer based): 227 or above
 TOEFL (internet based): 87 or above
 GCE higher level English: Grade C or greater
 Oxford Online Placement Test: 99 or above

* With grade 4 and above in the English higher level subject or at least an average of 12 in the higher level subjects.

Applicants presenting a TOEFL score should arrange to have the test results sent directly to the Office of Admissions by the Educational Testing Service (ETS). The College's Institution Code Number is 0925. TOEFL scores are valid for 2 years.

Students may also qualify to take WP 1010 by submitting evidence of fluency based on graduation from an English speaking secondary school or programme.

The above listed grades qualify the student for placement directly into WP 1010. Applicants who do not qualify for WP 1010 but who otherwise show academic promise may be admitted conditionally and placed in the English for Academic Purposes Program (see section "English Language Requirements").

7. Language of study

The language of instruction is English.

8. Information about non-OU standard assessment regulations (including PSRB requirements)

Deree faculty comprises experienced professionals active in their respective fields through their research, publications, think-tank work and other forms of professional engagement. Significant body of research has been garnered by Deree faculty in the fields of learning innovation and pedagogy. Recognizing the need of a structured holistic approach to teaching and learning, over the past years, Deree has been implementing a variety of initiatives aimed at boosting the faculty's teaching excellence geared toward maintaining high standards and their comparability across sections, modules, and schools. An important component of this strategy was driven by the recognition that new members of the faculty have to be socialized with the sophisticated, induced with best standard emulated by the OU, Deree teaching culture.

During the academic year 2017-18, a wide range of activities took place aiming to raising staff awareness with regards to the College's emphasis on pedagogy and research. Lectures, workshops, and seminars were organized by the College and were well-attended by the staff of all departments/areas.

Recognizing the importance of pedagogy and research, the College has established the Deree Teaching and Learning Center, which organizes workshops on current pedagogy, informs faculty about relevant opportunities abroad and seeks external funding for such purposes among other things. It also assists departments with planning and monitoring implementation of a series of events (e.g. lectures, workshops, symposia, round-table discussions, colloquia, retreats) every semester.

A variety of teaching, learning and assessment resources will be used that include:

1. web-based materials
2. hands-on practical work
3. virtual and augmented reality solutions
4. computer-aided learning packages
5. online forums
6. directed reading
7. formative assessments
8. summative assessments
9. self-assessment questions

9. For apprenticeships in England End Point Assessment (EPA).

(Summary of the approved assessment plan and how the academic award fits within this and the EPA)

Not applicable

10. Methods for evaluating and improving the quality and standards of teaching and learning.

10. Changes made to the programme since last (re)validation

New modules:

ES32xx Responses to Climate Change (L5) in replacement of MA3111 Statistics II

ES42xx Special Topics in Environmental Studies (L6 – Optional)

Changes in module:

Lab component was added in the ES3240 Integrated Methods in Environmental Analysis I

Overall credits:

DIPLOMA OF HIGHER EDUCATION IN ENVIRONMENTAL STUDIES (245 CREDITS)

BSc in ENVIRONMENTAL STUDIES (305 CREDITS)

(5 ADDITIONAL CREDITS are due to the additional Lab Component in the ES3240.

Annexe 1: Curriculum map

Annexe 2: Curriculum mapping against the apprenticeship standard or framework
(delete if not required.)

Annexe 3: Notes on completing the OU programme specification template

Annexe 1 - Curriculum map

This table indicates which study units assume responsibility for delivering (shaded) and assessing (●) particular programme learning outcomes.

Level	Study module/unit	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	C1	C2	C3	C4	D1	D2	D3	D4	D5	
4	ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY	●	●		●				●				●	●				●	●	●		
	ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION	●	●		●				●				●	●				●	●	●		
	CH 1002 PRINCIPLES OF CHEMISTRY	●							●				●	●				●	●	●		
	GG 1000 ENVIRONMENTAL GEOLOGY	●							●				●	●				●	●	●		
	Optional Module (one of the following)																					
	BI 1000 INTRODUCTION TO BIOLOGY I OR	●							●					●	●				●	●	●	
	BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES	●							●					●	●				●	●	●	
	Optional Module (one of the following)																					
	BI 1101 INTRODUCTION TO BIOLOGY II OR	●							●					●	●				●	●	●	
BI 1007 ENVIRONMENTAL ECOLOGY	●							●					●	●				●	●	●		

Level	Study module/unit	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	C1	C2	C3	C4	D1	D2	D3	D4	D5
5	SO/ES 3002 ENVIRONMENT AND SOCIETY		•		•			•	•	•	•					•	•	•		•	
	ES 32XX RESPONSES TO CLIMATE CHANGE	•	•	•	•			•	•	•	•					•	•	•		•	
	GG 3115 GEOGRAPHIC INFORMATION SYSTEMS					•			•	•	•				•	•	•	•		•	
	ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I					•		•	•	•	•		•	•	•	•	•	•		•	
	ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION		•	•	•				•	•	•					•	•	•		•	
	ES 3139 THE ECONOMY AND THE ENVIRONMENT		•	•	•				•	•	•					•	•	•		•	
	ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT		•	•				•	•	•	•					•	•	•	•	•	
	Optional																				
	BI 3215 ENVIRONMENTAL HEALTH		•	•					•	•	•					•	•	•		•	
	ES/CH 3241 ENVIRONMENTAL CHEMISTRY	•		•					•	•	•					•	•	•		•	

Level	Study module/unit	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	C1	C2	C3	C4	D1	D2	D3	D4	D5	
6	ES 4017 ENVIRONMENTAL JUSTICE		•	•	•			•	•	•	•	•				•	•	•		•		
	ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II					•		•	•	•	•	•			•	•	•	•		•	•	
	ES 4430 ENVIRONMENTAL STUDIES CAPSTONE					•		•	•	•	•	•	•	•	•	•	•	•		•	•	
	Optional (select 5 modules)																					
	ES 4115 ENERGY AND ENVIRONMENT			•	•		•	•	•	•	•	•	•				•	•	•		•	
	ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT			•	•		•	•	•	•	•	•	•				•	•	•		•	
	ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES			•	•		•	•	•	•	•	•	•				•	•	•		•	
	ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT			•	•		•	•	•	•	•	•	•	•	•		•	•	•		•	
	ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS			•	•		•	•	•	•	•	•	•				•	•	•		•	
	ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT			•	•		•	•	•	•	•	•	•				•	•	•		•	
	ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION			•	•		•	•	•	•	•	•	•				•	•	•		•	
	ES 4229 SUSTAINABLE CITIES			•	•		•	•	•	•	•	•	•				•	•	•	•	•	
	ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY				•		•	•	•	•	•	•	•				•	•	•		•	
	ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES			•	•		•	•	•	•	•	•				•	•	•		•		

Annexe 3 - Curriculum mapping against the apprenticeship standard

This table indicates which study units assume responsibility for delivering (shaded) and assessing (✓) particular knowledge, skills and behaviours.

Please ammend this mapping to suit Frameworks used within the different Nations if appropriate.

Level	Study module/unit	Apprenticeship standard																								
		K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5	S6	S7	S8	B1	B2	B3	B4	B5	B6	B7	B8	
4																										

Level	Study module/unit	Apprenticeship standard																								
		K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5	S6	S7	S8	B1	B2	B3	B4	B5	B6	B7	B8	
5																										

Level	Study module/unit	Apprenticeship standard																										
		K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5	S6	S7	S8	B1	B2	B3	B4	B5	B6	B7	B8			
6																												

Annexe 2: Notes on completing programme specification templates

- 1 - This programme specification should be mapped against the learning outcomes detailed in module specifications.
- 2 – The expectations regarding student achievement and attributes described by the learning outcome in section 3 must be appropriate to the level of the award within the **QAA frameworks for HE qualifications**: <http://www.qaa.ac.uk/AssuringStandardsAndQuality/Pages/default.aspx>
- 3 – Learning outcomes must also reflect the detailed statements of graduate attributes set out in **QAA subject benchmark statements** that are relevant to the programme/award: <http://www.qaa.ac.uk/AssuringStandardsAndQuality/subject-guidance/Pages/Subject-benchmark-statements.aspx>
- 4 – In section 3, the learning and teaching methods deployed should enable the achievement of the full range of intended learning outcomes. Similarly, the choice of assessment methods in section 3 should enable students to demonstrate the achievement of related learning outcomes. Overall, assessment should cover the full range of learning outcomes.
- 5 - Where the programme contains validated **exit awards** (e.g. CertHE, DipHE, PGDip), learning outcomes must be clearly specified for each award.
- 6 - For programmes with distinctive study **routes or pathways** the specific rationale and learning outcomes for each route must be provided.
- 7 – Validated programmes delivered in **languages other than English** must have programme specifications both in English and the language of delivery.

Annexe 2:

ACG-DEREE ENVIRONMENTAL STUDIES EXIT AWARDS

I. Certificate of Higher Education in Environmental Studies

In accordance with the Framework for Higher Education Qualifications (FHEQ), the holder of a Certificate of Higher Education in Environmental Studies will have a sound knowledge of the basic concepts of Environmental Studies and will have learned how to take different approaches for solving problems. He or she will be able to communicate accurately and will have the qualities needed for employment requiring the exercise of some personal responsibility.

In accordance with FHEQ, Certificates of Higher Education in Environmental Studies are awarded to students who have demonstrated:

- knowledge of the underlying concepts and principles associated with Environmental Studies, and an ability to evaluate and interpret these within the context of that area of study;
- an ability to present, evaluate, and interpret qualitative and quantitative data, to develop lines of argument and make sound judgments in accordance with basic theories and concepts of their subject(s) of study.

Typically, holders of the qualification will be able to:

- evaluate the appropriateness of different approaches to solving problems related to Environmental Studies;
- communicate the results of their study/work accurately and reliably, and with structured and coherent arguments;
- undertake further training and develop new skills within a structured and managed environment;

and will have:

- qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility.

Specifically, holders of the Certificate of Higher Education in Environmental Studies of ACG-DEREE (120 credits or six 20-credit modules) will be able to demonstrate knowledge and understanding of:

- core concepts, principles and tools in natural sciences, of the structure and functioning of natural systems and of their role in supporting life and human activities (all L4 modules: ES 1000, ES 1010, CH 1002, GG 1000, two modules in biology)
- the social, economic, political, health and ecological implications of human interactions with the environment. (ES 1000, ES 1010)
- the need for an interdisciplinary approach in addressing environmental problems (ES 1000, ES 1010)
- the concepts and dimensions of sustainability and sustainable development (ES 1000, ES 1010)

In addition, they will have the following cognitive, practical/professional and key/transferable skills:

- They will be able to collect, process, interpret and communicate data and information on environmental issues and related topics
- They will be able to describe and record materials in the field and laboratory, to interpret practical results in a logical manner and to use appropriate laboratory and field equipment competently and safely
- They will be able to interact effectively within a team/learning group, giving and receiving information and ideas and modifying responses when appropriate.

These skills are attained through all L4 modules (ES 1000, ES 1010, CH 1002, GG 1000, two modules in biology)

II. Intermediate level

The intermediate level includes the Diploma of Higher Education in Environmental Studies and the ordinary (non-Honours) degree in Environmental Studies.

In accordance with the Framework for Higher Education Qualifications (FHEQ), holders of qualifications at this level will have developed a sound understanding of the principles in Environmental Studies and will have learned to apply those principles more widely. Through this, they will have learned to evaluate the appropriateness of different approaches to solving problems. They will have the qualities necessary for employment in situations requiring the exercise of personal responsibility and decision-making. In accordance with FHEQ, non-Honours degrees are awarded to students who have demonstrated:

- knowledge and critical understanding of the well-established principles of Environmental Studies, and of the way in which those principles have developed;
- ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context;
- knowledge of the main methods of enquiry in their subject(s), and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study;
- an understanding of the limits of their knowledge, and how this influences analyses and interpretations based on that knowledge.

Typically, holders of the qualification will be able to:

- use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis;
- effectively communicate information, arguments, and analysis, in a variety of forms, to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively;
- undertake further training, develop existing skills, and acquire new competences that will enable them to assume significant responsibility within organisations;

and will have:

- qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision-making.

II.a. Diploma of Higher Education in Environmental Studies

Holders of the Diploma of Higher Education in Environmental Studies of ACG-DEREE (245 credits or seven 20 credit- and seven 15 credit-modules) will be able to demonstrate detailed knowledge and critical understanding of:

- core concepts, principles and tools in natural sciences, of the structure and functioning of natural systems and of their role in supporting life and human activities (all L4 modules and L5 modules ES/CH 3241 Environmental Chemistry, ES 32XX Climate Change)
- the role of social sciences in analysing and addressing environmental problems and of the social, economic, political, health and ecological implications of human interactions with the environment (ES 1000, ES 1010, SO/ES 3002, ES 3216, ES 3220, ES 3139, BI 3215)
- human responses to environmental problems such as the development of environmental policy and law and environmental management, as well as of the importance of temporal and spatial scales in considering the environmental impact of human decisions in different environmental studies fields (ES 3216, ES 3220, ES 3139, BI 3215, ES/CH 3241, ES 32XX)
- the concepts and dimensions of sustainability and sustainable development and of some of their applications in addressing environmental issues in an integrated manner (ES 1000, ES 1010, SO/ES 3002, ES 3216, ES 3220, ES 3139, ES 32XX)
- basic tools in mathematics and statistics, as well as of quantitative techniques and data processing methods including GIS techniques (ES 3240 Integrated Methods in Environmental Analysis I, GG 3115)

In addition, they will have the following cognitive skills:

- ability to recognize the moral and ethical issues of investigations, appreciate the need for professional codes of conduct and undertake a reasoned moral assessment of actions/persons/business practices (SO/ES 3002, ES 32XX Integrated Methods in Environmental Analysis I, ES 3220)
- ability to collect and analyse data and information on environmental issues using a range of techniques appropriate to the subject (all L4 and L5 modules to some extent)

- ability to critically evaluate the reliability and significance of data and information collected and the evidence provided to support conclusions (all L5 modules with a research project: SO/ES 3002, GG 3115, ES 3216, ES 3220, ES 3139, ES 32XX, ES/CH 3241, BI 3215)
- ability to categorize ideas, data and information, reformat and transform them towards a given purpose and propose solutions (all L5 modules with a research project: SO/ES 3002, GG 3115, ES 3216, ES 3220, ES 3139, ES/CH 3241, ES 3240, ES 32XX, BI 3215)

the following practical/professional skills:

- ability to describe and record materials in the field and laboratory and to interpret practical results in a logical manner (all L4 modules, as they have a lab component; ES 3240 Integrated Methods in Environmental Analysis I)
- ability to use appropriate laboratory and field equipment competently and safely (all L4 modules, as they have a lab component; ES 3240 Integrated Methods in Environmental Analysis I)
- ability to select and apply a limited range of methods, including spatial techniques, to study and solve environmental problems (ES 3240 Integrated Methods in Environmental Analysis I, GG 3115)
- ability to plan, conduct and present an independent project effectively and appropriately with reliance on guidance, to relate investigations to prior work and to reference appropriately (all L5 modules with a research project: SO/ES 3002, GG 3115, ES 3216, ES 3220, ES 3139, ES/CH 3241, ES 3240, ES 32XX, BI 3215)

and the following key/transferable skills:

- ability to manage, select and process information from a variety of sources to support findings and hypotheses and develop a critical approach to academic literature and other sources of information (all L5 modules with a research project: SO/ES 3002, GG 3115, ES 3216, ES 3220, ES 3139, ES/CH 3241, ES 3240, ES 32XX, BI 3215)
- ability to communicate effectively to a variety of audiences in written, graphical and verbal forms, engage in debate in a professional manner and produce detailed and coherent project reports (all L4 and L5 modules)

- ability to interact effectively within a team/learning group, giving and receiving information and ideas and modifying responses when appropriate (all L4 modules, ES 3220)
- ability to acquire, process, interpret and present data using appropriate qualitative and quantitative techniques including use of information technology and the internet, mathematics, statistics and GIS (all L4 and L5 modules to some extent)

II.b. BSc in Environmental Studies

Holders of the ordinary BSc in Environmental Studies of ACG-DEREE (305 credits or seven 20 credit- and eleven 15 credit-modules) will be able to demonstrate detailed knowledge and critical understanding of:

- core concepts, principles and tools in natural sciences, of the structure and functioning of natural systems and of their role in supporting life and human activities (all L4 modules and ES/CH 3241 Environmental Chemistry, ES 32XX Climate Change)
- the role of social sciences in analysing and addressing environmental problems and of the social, economic, political, health and ecological implications of human interactions with the environment (ES 1000, ES 1010, SO/ES 3002, ES 3216, ES 3220, ES 3139, BI 3215, ES 4017)
- human responses to environmental problems such as the development of environmental policy and law and environmental management, as well as of the importance of temporal and spatial scales in considering the environmental impact of human decisions in different environmental studies fields (ES 3216, ES 3220, ES 3139, BI 3215, ES/CH 3241, ES 32XX)
- the concepts and dimensions of sustainability and sustainable development and of some of their applications in addressing environmental issues in an integrated manner (ES 1000, ES 1010, SO/ES 3002, ES 3216, ES 3220, ES 3139, ES 32XX, most L6 optional modules)

- basic tools in mathematics and statistics, as well as of quantitative techniques and data processing methods including GIS techniques (ES 3240 Integrated Methods in Environmental Analysis I, GG 3115, ES 4343 Integrated Methods in Environmental Analysis II)
- Topics in more specialized fields of environmental studies (such as management and conservation of natural resources, policy and environmental management of corporations) (all L6 optional modules)

In addition, they will have the following cognitive skills:

- ability to recognize the moral and ethical issues of investigations, appreciate the need for professional codes of conduct and undertake a reasoned moral assessment of actions/persons/business practices (SO/ES 3002, ES 3240 Integrated Methods in Environmental Analysis I, ES 4343 Integrated Methods in Environmental Analysis II, ES 3220)
- ability to collect and analyse data and information on environmental issues using a range of techniques appropriate to the subject (all L4 and L5 modules to some extent)
- ability to critically evaluate the reliability and significance of data and information collected and the evidence provided to support conclusions (all L5 modules with a research project: SO/ES 3002, GG 3115, ES 3216, ES 3220, ES 3139, ES/CH 3241, ES 3240; ES 32XX, BI 3215, all L6 modules)
- ability to categorize ideas, data and information, reformat and transform them towards a given purpose and propose solutions (all L5 modules with a research project: SO/ES 3002, GG 3115, ES 3216, ES 3220, ES 3139, ES/CH 3241, ES 3240; ES 32XX, BI 3215; all L6 modules)
- ability to identify key elements of environmental problems and apply appropriate knowledge and skills to their solution (all L6 modules)

the following practical/professional skills:

- ability to describe and record materials in the field and laboratory and to interpret practical results in a logical manner (all L4 modules, as they have a lab component; ES 3240 Integrated Methods in Environmental Analysis I)

- ability to use appropriate laboratory and field equipment competently and safely (all L4 modules, as they have a lab component; ES 3240 Integrated Methods in Environmental Analysis I)
- ability to select and apply a limited range of methods, including spatial techniques, to study and solve environmental problems (ES 3240 Integrated Methods in Environmental Analysis I, ES 4343 Integrated Methods in Environmental Analysis II, GG 3115)
- ability to plan, conduct and present an independent project effectively and appropriately with reliance on guidance, to relate investigations to prior work and to reference appropriately (all L5 modules with a research project: SO/ES 3002, GG 3115, ES 3216, ES 3220, ES 3139, ES/CH 3241, ES 3240, ES 32XX, BI 3215; all L6 modules)

and the following key/transferable skills:

- ability to manage, select and process information from a variety of sources to support findings and hypotheses and develop a critical approach to academic literature and other sources of information (all L5 modules with a research project: SO/ES 3002, GG 3115, ES 3216, ES 3220, ES 3139, ES/CH 3241, ES 3240, ES 32XX, BI 3215; all L6 modules)
- ability to communicate effectively to a variety of audiences in written, graphical and verbal forms, engage in debate in a professional manner and produce detailed and coherent project reports (all modules to some extent)
- ability to interact effectively within a team/learning group, giving and receiving information and ideas and modifying responses when appropriate (all L4 modules, ES 3220, ES 4229)
- ability to acquire, process, interpret and present data using appropriate qualitative and quantitative techniques including use of information technology and the internet, mathematics, statistics and GIS (all modules to some extent)
- ability for independent study (ES 4343 Integrated Methods in Environmental Analysis II)

CERTIFICATE OF HIGHER EDUCATION IN ENVIRONMENTAL STUDIES (120 CREDITS)

Compulsory Modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY (LEVEL 4) – 20 CREDITS

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION (LEVEL 4) – 20 CREDITS

CH 1002 PRINCIPLES OF CHEMISTRY (LEVEL 4) – 20 CREDITS

GG 1000 ENVIRONMENTAL GEOLOGY (LEVEL 4) – 20 CREDITS

Optional Modules:

BIOLOGY OPTION 1 (LEVEL 4) – 20 CREDITS

- BI 1000 INTRODUCTION TO BIOLOGY I (LEVEL 4) – 20 CREDITS
- BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES (LEVEL 4) – 20 CREDITS

BIOLOGY OPTION 2 (LEVEL 4) – 20 CREDITS

- BI 1101 INTRODUCTION TO BIOLOGY II (LEVEL 4) – 20 CREDITS
- BI 1007 ENVIRONMENTAL ECOLOGY (LEVEL 4) – 20 CREDITS

DIPLOMA OF HIGHER EDUCATION IN ENVIRONMENTAL STUDIES (245 CREDITS)

Compulsory Modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY (LEVEL 4) – 20 CREDITS

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION (LEVEL 4) – 20 CREDITS

CH 1002 PRINCIPLES OF CHEMISTRY (LEVEL 4) – 20 CREDITS

GG 1000 ENVIRONMENTAL GEOLOGY (LEVEL 4) – 20 CREDITS

ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I (LEVEL 5) – 20 CREDITS

ES 32XX CLIMATE CHANGE (LEVEL 5) – 15 CREDITS

GG 3115 GEOGRAPHIC INFORMATION SYSTEMS (LEVEL 5) – 15 CREDITS

SO/ES 3002 ENVIRONMENT AND SOCIETY (LEVEL 5) – 15 CREDITS

ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION (LEVEL 5) – 15 CREDITS

ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT (LEVEL 5) – 15 CREDITS

ES 3139 THE ECONOMY AND THE ENVIRONMENT (LEVEL 5) – 15 CREDITS

Optional Modules Level 4:

BIOLOGY OPTION 1 (LEVEL 4) – 20 CREDITS

- BI 1000 INTRODUCTION TO BIOLOGY I (LEVEL 4) – 20 CREDITS
- BI 1017 HUMAN BIOLOGY: BODY ANATOMY AND CURRENT ISSUES (LEVEL 4) – 20 CREDITS

BIOLOGY OPTION 2 (LEVEL 4) – 20 CREDITS

- BI 1101 INTRODUCTION TO BIOLOGY II (LEVEL 4) – 20 CREDITS
- BI 1007 ENVIRONMENTAL ECOLOGY (LEVEL 4) – 20 CREDITS

Optional Modules Level 5:

BI 3215 ENVIRONMENTAL HEALTH (LEVEL 5) – 15 CREDITS

ES/CH 3241 ENVIRONMENTAL CHEMISTRY (LEVEL 5) – 15 CREDITS

BSc in ENVIRONMENTAL STUDIES (305 CREDITS)

Compulsory Modules:

ES 1000 ENVIRONMENTAL SCIENCE: ECOSYSTEMS AND BIODIVERSITY (LEVEL 4) – 20 CREDITS

ES 1010 ENVIRONMENTAL SCIENCE: ENERGY RESOURCES AND POLLUTION (LEVEL 4) – 20 CREDITS

CH 1002 PRINCIPLES OF CHEMISTRY (LEVEL 4) – 20 CREDITS

GG 1000 ENVIRONMENTAL GEOLOGY (LEVEL 4) – 20 CREDITS

ES 3240 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS I (LEVEL 5) – 20 CREDITS

ES 32XX CLIMATE CHANGE (LEVEL 5) – 15 CREDITS

GG 3115 GEOGRAPHIC INFORMATION SYSTEMS (LEVEL 5) – 15 CREDITS

SO/ES 3002 ENVIRONMENT AND SOCIETY (LEVEL 5) – 15 CREDITS

ES 3216 ENVIRONMENTAL POLICY AND LEGISLATION (LEVEL 5) – 15 CREDITS

ES 3220 PRINCIPLES OF ENVIRONMENTAL MANAGEMENT (LEVEL 5) – 15 CREDITS

ES 3139 THE ECONOMY AND THE ENVIRONMENT (LEVEL 5) – 15 CREDITS

Optional Modules Level 4:

BIOLOGY OPTION 1 (LEVEL 4) – 20 CREDITS

BIOLOGY OPTION 2 (LEVEL 4) – 20 CREDITS

Optional Modules Level 5:

BI 3215 ENVIRONMENTAL HEALTH (LEVEL 5) – 15 CREDITS
ES/CH 3241 ENVIRONMENTAL CHEMISTRY (LEVEL 5) – 15 CREDITS
Modules offered at level 6 (Students are required to take four of the following):
ES 4017 ENVIRONMENTAL JUSTICE
ES 4343 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II
ES 4430 ENVIRONMENTAL STUDIES CAPSTONE
ES 4115 ENERGY AND ENVIRONMENT
ES 4223 WATER RESOURCES: THREATS AND SUSTAINABLE MANAGEMENT
ES 4124 AIR QUALITY AND GLOBAL ATMOSPHERIC CHANGES
ES 4125 SUSTAINABLE FOOD PRODUCTION: SOIL AND ENVIRONMENT
ES 4126 CONSERVATION OF WILDLIFE AND MEDITERRANEAN ECOSYSTEMS
ES 4XXX SPECIAL TOPICS IN ENVIRONMENTAL STUDIES
ES 4328 ENVIRONMENTAL GOVERNANCE IN THE EUROPEAN UNION
ES 4229 SUSTAINABLE CITIES
ES 4135 SUSTAINABLE USE OF RESOURCES AND WASTE MANAGEMENT
ES 4242 EDUCATION FOR THE ENVIRONMENT AND SUSTAINABILITY