

Academy Profession Degree Programme in Environmental Management (ADEM)

*Total Study description
2010- 2012*

BUSINESS ACADEMY
AARHUS



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1 Introduction to the ADEM programme

The 2 year Academy Profession Degree Programme in Environmental Management (ADEM) is an international and practice-oriented higher education.

The education qualifies to work independently with analysis, planning and implementation of solutions concerning nature and environment in local, national and international contexts.

Programme Structure

The Environmental Management education comprises four semesters, each of them focusing on an overall theme:

- Soil science
- Water science
- Environmental management
- Career making, including work placement and final examination project (main project).

During the 2 years of study, the student will be working with many aspects of nature and environmental protection, and there will be subjects like:

- Soil science and geology
- Soil pollution problems
- Land use and GIS
- Streams and lakes studies
- Drinking water problems
- Plant and insect studies
- Conservation
- Waste water and waste treatment
- Sampling and lab work
- Environmental management
- Environmental economics

Besides these subjects related to nature and environment, there is also special focus on communication, computer skills as well as useful knowledge of management, marketing, business economy, sociology and politics. The student will be trained in all aspects of producing a professional report and making oral presentations.

2 Summary of the ADEM Programme 2010 – 2012

Summery ADEM 2010 - 2012

	1. semester	2. semester	3. semester	4. semester			
Week	19	23	20	18	Total	Exam	ECTS
Activity							
Intro	26				26		1,4
Communication 1	80				80		4,4
Communication PC skills	18				18		1,0
Communication 2		84			84		4,7
Business Economy	64				64		3,6
Management		52			52		2,9
Marketing		40			40		2,2
Globalization			36		36		2,0
Communication 3			40		40		2,2
Environmental economy			48		48		2,7
Main Subject 1	216				216		12,0
Soil Science and Geology	50						
Chemistry	30						
Soil Pollution	58						
Land use and GIS	50						
Project	28						
Main Subject 2		274			274		15,2
Stream, Lake and Ocean		124					
Drinking Water		90					
Plants and Insects		60					
Main Subject 3			210		210		11,7
Conservation			96				
Wastewater and Waste			90				
Sampling and Labwork			62				
Wednesday profile	72	28	20		120		6,7
Firm contact/placement		56		212	268		14,9
Environmental management				64	64		3,6
Globalization (excursion)			38		38		2,1
Main Project/placement			8		8		0,4
Total lessons	476	534	400	276	1686		93,6
Exam Project 1	76				76	76	4,2
Exam Project 2		84			84	84	4,7
Exam project 3a and 3b			112		112	112	6,2
Main Project				134	134	134	7,4
Exam Main Project				70	70	70	3,9
Exam Total	76	84	112	204	476	406	26,4
Study activity	552	618	512	480	2162	406	120,0
Lessons pr. week	29,1	26,9	25,6	26,7	27,0	100,0	1,50

3 Subjects

3.1 Soil Science and Geology

Number of lessons 50

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

That the student acquires basic insight in formation and characteristics of soils, and in the use of soils as a prerequisite for agriculture.

Content

Basic geology, soil components (particles, structure and water), soil fertility, concepts of arable land, soil analysis, nutrient cycles, surveying and classification.

Evaluation

The subject will be evaluated in Exam project 1.

3.2 Chemistry and Soil Pollution

Number of lessons 88

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

Having completed the subject the student must be able to give advice on, supervise and monitor soil pollution and waste disposal.

Content

Contaminated land. Organic and inorganic pollutants. Sorption, transport, degradation and persistence. Physical and chemical methods for pollutant removal. Bioremediation. Mapping, supervising and monitoring. Waste production and handling. Landfills. Legislation.

Evaluation

The subject will be evaluated in Exam project 1.

3.3 Land use and GIS

Number of lessons 50

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

That the student acquires basic insight in the different types of nature and the crops grown in agriculture in Denmark. Furthermore that the student gets familiar to the use of GPS and mapping.

Content

Characteristics of different types of nature and landscapes. Establishment of wildlife areas in agriculture. Typical crops grown in Denmark. Practical use of GPS and mapping.

Evaluation

The subject will be evaluated in Exam project 1.

3.4 Communication 1, 2 and 3

Number of lessons 222

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

Having completed this course the student is able to employ relevant communicative skills when writing reports and when making oral presentations, as well as when communicating information to various target groups.

Content

Computer skills.

Professional communication, i.e. preparing efficient communication; the requirements of different kinds of message, media and target group to communication; oral and written communication such as lecturing and presentation techniques, giving feed-back, writing professional texts (articles, press releases, memos, reports, brochures, etc.)

Intercultural communication, i.e. the notion of culture, cultural standards and values, cultural awareness and cultural conflicts, describing culture using appropriate interview techniques and Denmark as a case.

Evaluation

The communication skills will be evaluated in all Exams.

3.5 Business economy

Number of lessons 64

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

That the student obtains a global understanding of environmental conditions in a business perspective and the ability to employ relevant methods concerning economy.

Content

Business economy, i.e. financial management, annual accounts, analysis of accounts, concepts of costs, calculation, budgeting, liquidity, provisions and investments.

Evaluation

The subject will be evaluated in Exam project 1.

3.6 Stream, lake and ocean

Number of lessons 124

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

To give the students a practical understanding of aquatic biology issues.

Content

Basic knowledge on aquatic ecology in surface waters; abiotic preconditions, zonation of aquatic biotas, energy transfer, water cycle and climate, examples on life cycles of characteristic organisms, and aquatic monitoring. A field sampling excursion and following laboratory work will constitute a major part of the course.

Evaluation

The subject will be evaluated in Exam project 2.

3.7 Drinking water

Number of lessons 90

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

Having completed the subject the student should be able independently to handle protection and production of drinking water.

Content

Geology, aquifers and wells. Chemistry of groundwater. Pesticides and nitrate in groundwater. Geophysical mapping and protection of groundwater. Microbial and chemical quality of drinking water. Water supply, function of waterworks and treatment of groundwater. Legislation and monitoring.

Evaluation

The subject will be evaluated in Exam project 2.

3.8 Plants and insects

Number of lessons 60

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

To give the students an understanding of

- natural (pristine), cultural and degraded landscapes
- the ecological interplay between human activities, grazing of livestock, and the resulting flora and fauna
- character and indicator species among flora and fauna, and how these are utilized in monitoring of habitat quality
- the basis for conservation biology and Natura 2000

Content

Basic knowledge on biogeographical zonation, and on the morphology and functioning of the characteristic plant species in various habitat types.

Plant and animal communities and character species

Evaluation

The subject will be evaluated in Exam project 2.

3.9 Management

Number of lessons 52

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

The student demonstrates the ability to

- Use and communicate basic knowledge of companies' organization and development.
- Use and communicate basic knowledge of human resource development.
- Combine theory and practice when answering assignments on management.
- Collect, register and process relevant information about management issues.
- Apply theories on management and human resource development to a practical context.

Content

Organizational theory, i.e. types of companies, vision and goal, analyzing and designing organizational structures, processes of management, including processes of decision-making, information, project planning and evaluation.

Human resource management (HRM) and Human resource development (HRD), i.e. motivation, job descriptions, dealing with conflicts, management concepts and management tools, HRD in terms of training, coaching, capacity-building, etc.

Evaluation

The subject will be evaluated in Exam project 2.

3.10 Marketing

Number of lessons 40

Learning objectives

- **Knowledge**
- **Skills**
- **Competences**

The student must have knowledge of common marketing concepts and notions. The student must be able to understand relevant theories and models used in describing the company's internal and external situation. The student must acquire basic insight in formation and characteristics of a company's marketing strategy and the resulting marketing mix.

Content SWOT-analysis and strategy, the Boston Box, Ansoff Growth Matrix, Market and Customer Research, Segmentation, Positioning, Marketing Communication and Advertising, Marketing Mix / The 5 P's: Product and Branding, Price Decisions, Place and Distribution, Promotion and People and Service.

Evaluation The subject will be evaluated in Exam project 2.

3.11 Globalization and excursion

Number of lessons 36 + excursion (38)

Learning objectives Having completed the course the students should be able to understand:

- Knowledge
- Skills
- Competences

History of environmental globalization
Recent international environmental politics
Climate change and global actions
Partners in global environmental debate

Content Sustainable development – the international environmental agenda
Conventions and protocols
Climate convention and Kyoto protocol
Environmental politics in EU

Half of the course is organized as class lectures.
Half is organized as an excursion

The course will build on:
Class lectures
Group work on international cooperation
Case stories
A study trip

Projects Globalization project

Evaluation The subject will be evaluated in relation to the exam prerequisites.

3.12 Environmental Economy

Number of lessons	48
Learning objectives	Having completed the subject the student should be able to understand the relation between environment and marked economies.
<ul style="list-style-type: none">• Knowledge• Skills• Competences	
Content	Nature resources and environment. Environment and market economics: supply, demand and regulation. Pricing of non-marketable goods. Interest rates in environmental projects. Cost / benefit analysis.
Evaluation	The subject will be evaluated in exam 3b.

3.13 Conservation

Number of lessons	96
Learning objectives	Having completed the course the students should be able to understand:
<ul style="list-style-type: none">• Knowledge• Skills• Competences	Natural and cultural landscapes, their development and related legislation. Methods for sustainable use and management of landscapes and habitats. Nature conservation and project management.
Content	The following headlines will be included: Management of landscapes and habitats. Knowledge of relevant legislation. Nature conservation and planning of smaller habitats. Ecology of landscapes. Nature 2000 directives and Water Frame Directive. Wetland restoration. Project management: Theory and practice.
Evaluation	The subject will be evaluated in exam 3a.

3.14 Wastewater and waste

Number of lessons	90
Learning objectives <ul style="list-style-type: none">• Knowledge• Skills• Competences	Having completed the subject the student should be able independently to advice in and monitor wastewater treatment, sludge disposal and solid waste treatment.
Content	Sewer systems. Chemistry and pathogens in wastewater. Wastewater plants and processing. Advanced wastewater treatment. Sludge production and handling. Water reuse. Small scale treatment plants. Production and handling of solid waste. Monitoring. Legislation.
Projects	Waste Project in January.
Evaluation	The subject will be evaluated in exam 3a.

3.15 Sampling and laboratory work

Number of lessons	64
Learning objectives <ul style="list-style-type: none">• Knowledge• Skills• Competences	Having completed the subject the student must be able to work out planning programs and to do the sampling of all types of water and soils. Next, the student must be familiar with the most common fields and laboratory analysis as well as mathematical modelling and basic statistical disciplines.
Content	Mathematical modelling and basic statistic. Sampling programs and sampling routines in soils, wastewater and drinking water. Laboratory techniques and analysis. Field and laboratory exercises. Safety and working environment in field and laboratory.
Evaluation	The subject will be evaluated in exam 3b.

3.16 Environmental management

Number of lessons	64
Learning objectives <ul style="list-style-type: none">• Knowledge• Skills• Competences	That the students have a basic knowledge on and understanding of laws about environmental management and how this is used in the member states to control and minimize pollution, especially EU-laws.
Content	The IPPC-directive and permits, BAT, Environmental inspections, PRTR-register, EMAS, ISO and labeling, the Kyoto-protocol and climate work, working with a project of their own about environmental management.
Evaluation	The subject will be evaluated in relation to the exam prerequisites.

3.17 Placement

Number of lessons	268
Learning objectives <ul style="list-style-type: none">• Knowledge• Skills• Competences	The purpose of the placement is to build a strong link between education and the job market.
Content	10 week placement at firms chosen by the student and approved by the counselor. Different tasks have to be solved by the student to gain practical knowledge.

3.18 Main project

Number of lessons	134
Learning objectives <ul style="list-style-type: none">• Knowledge• Skills• Competences	The project must reflect the student's ability to work independently in an analytical and methodical way when seeking to solve a complex and practice-related problem. The project must also reflect the students ability to communicate his or hers findings to relevant target groups.

Content

The exam project is a limited part of the education in which the student works with central issues within one or more fields related to the AP Degree Programme in Environmental Management.

Evaluation

The subject will be evaluated in the main project exam.

4 Exams

Please note: The study activity must be fulfilled in all relevant subjects before the student can register for the exams.

	Name	Form and content	Grade	ECTS	Internal/ External
1st semester	EP 1 Soil Science	Interdisciplinary project exam All subjects from 1 st semester may be included	7-point scale	20 ECTS	Internal
2nd semester	EP 2 Water Science	Interdisciplinary project exam All subjects from 1 st and 2 nd semester may be included. At least 60 % is from compulsory subject areas	7-point scale	35 ECTS	External
3rd semester	EP 3a	Interdisciplinary project exam Compulsory subject and study programme subjects	7-point scale	25 ECTS	Internal
	EP3b	Elective form Specialization	7-point scale	15 ECTS	External
4th semester	Placement	Conducting internship period and written report	Approved/not approved	15 ECTS	Internal
	Main project	Project and oral part	7-point scale	10 ECTS	External

EP = Exam project

The programme contains a total of 6 exams which apply to all places of study providing the Agro Business programme. However, all exams are prepared by the individual institution. There is one grade per exam.

EP2 must be passed before the student can register for the following exams.

The student cannot register for the final exam until all other exams have been passed.

External exam means the censor is picked from the corps of censors for the Agro Business programme. Internal exam means that the academy appoints the censors. Furthermore, in each semester there are a number of compulsory assignments which have to be performed in a satisfactory manner in order that the student can complete the programme.