



**AERES**  
UNIVERSITY OF  
APPLIED SCIENCES

# Aquatic Ecosystem Analysis (IAEA)

## Bachelor Degree

COURSE CATALOGUE

Academic year

CROHO:30009

ISCED: 052 Environment



# Content

<b>1</b>	<b>Introduction</b>	<b>4</b>
<b>2</b>	<b>Competency Based Education &amp; Final Qualifications</b>	<b>6</b>
2.1.	Aeres Competencies	6
2.2.	Final Qualifications Applied Biology	7
<b>3</b>	<b>Programme structure</b>	<b>8</b>
3.1.	Overview	8
3.2	Course outline Aquatic Ecosystem Analysis 2021-2022	9
3.3	Matrix of competences and minors	10
3.4	Course schedule Aquatic Ecosystem Analysis 2021-2022	11
<b>4</b>	<b>Educational Examination Regulations</b>	<b>13</b>
4.1.	Student Contract	13
4.2.	Student Charter and Code of Conduct	13
4.3.	Examination Regulations	13
4.4.	Academic Accommodations	13
4.5.	Student Counsellors	14
<b>5</b>	<b>Minor and module descriptors</b>	<b>15</b>
5.1	AWQA - Water quality analysis	15
5.2	AWSA – Water system analysis	16
5.3	AIPR – Integrated Project	17
5.4	AGWPa – Graduation Work Placement	18
5.5	AAWAi – Thesis project	19
5.6	AP4Ai - Personal development and ethics	20
	Annex 1: Aeres Competencies and indicators for different levels	2

# 1 Introduction

This course catalogue is for the International Aquatic Ecosystem Analysis one-year degree programme for the academic year of . Registered under the Dutch CROHO 30009 Applied Biology and ISCED 052 Environment. This catalogue contains all official information about the programme and is therefore leading. During the course, detailed information will be presented in Canvas, our online learning environment. Students graduating from this programme receive a Bachelor of Science from Aeres UAS.

As the program is an international study, all courses, exams, and assessments will be delivered in English. Submissions from students (exams or assessments) are also required to be in the English language.

The International Aquatic Ecosystems Analysis programme is a unique programme in many ways . This first cycle, full-time, 1-year, 60 ECTS programme has been developed aiming at a wide range of future careers in the main themes of aquatic ecology, water systems, and area conservation. To ensure that students are well prepared for the professional practice the programme takes the challenges into account that a present day water professional has to deal with. The program uses learning techniques such as traditional taught methods, practical assignments and case studies and internships to provide students with a unique, practical and valuable learning experience. This course catalogue provides an overview of the courses that will be taught throughout the study

The duration of the study is one academic year. The mode of study is full-time in a face-to-face classroom setting.

## **Programme content and focus**

Its strength lies in looking at all aspects of the water system: both biotic and abiotic elements in the water system are explored on different spatial and temporal scales. And there are many fascinating interactions between those factors in the system to be studied as well. In the first semester two parallel minors are taught. One minor focuses on biotic, smaller scale aquatic ecology. The second minor is rather abiotic and focuses at larger scales. Each minor includes a professional task, the acquisition of knowledge and practical skills and field visits. The practical application of all expertise comes in the shape of a multidisciplinary project abroad in the second semester, solving a water-quality problem. The graduation phase further includes an internship and the writing of a thesis.

## **Personal and professional development**

At Aeres UAS both professional and personal development are extremely important. We believe in personal education, not in numbers. Due to the nature and character of the programme these two elements are therefore imbedded in the programme offering students in need of academic accommodations also a chance to become a successful young professional.

The quality of the programme is continuously being monitored and the International Water team will do the utmost to keep the quality of the education at a high level. In addition we have a board of advisors with professionals from the professional work field to ensure that the programme keeps on meeting the needs of the world of work.

Once you are admitted as a student at Aeres University of Applied Sciences, you have access to several facilities. More information can be found on the website: [www.aeresuas.com](http://www.aeresuas.com).

**Aeres Group; corporate organisation structure**

The Dutch green sector is at the forefront of the world. Aeres significantly contributes to this position. At Aeres, education, research and entrepreneurship come together around the major themes. Our talent ensures that there are people who take responsibility for the sustainable growth of plants and animals, feeding people, creating a healthy environment and giving room to nature. (Aeres, 2021).

Aeres was created between 2004 and 2009 from mergers of the former Groenhorst College, the CAH University of Applied Sciences, Stoas University of Applied Sciences and PTC+ (now Aeres Tech and Aeres Training Centre). In 2013, the CAH and Stoas merged to form Vilentum University of Applied Sciences, thereby founding the three current Aeres University of Applied Sciences faculties in Dronten, Almere and Wageningen. Aeres provides education (pre-vocational secondary education, TVET, Bachelor and Master) and is also active in the field of applied research and innovation and commercial courses and services for individuals and businesses (Aeres, 2021).

Aeres Group Executive Board of directors consists of: Mr B.M.P. Pellikaan (chairman), Mrs I.D. Dulfer-Kooijman (member), Mr M.H.C. Komen (member) [INFO](#)

The remainder of this catalogue will highlight examination regulations, the year schedule, final qualifications, and the structure of the courses provided within the IAEA Programme

## 2 Competency Based Education & Final Qualifications

Aeres has chosen to work with competency based education in all its programmes. Competencies are identified behaviours, knowledge, skills, and abilities that directly and positively impact the success of employees and organizations. Competencies can be objectively measured, enhanced, and improved through coaching and learning opportunities. Throughout the programme students work on the 10 Aeres competencies, please check ANNEX 1 Aeres Competencies and indicators for different levels.

### 2.1. Aeres Competencies

- 1. To show leadership**  
Coaches the development of employees and shows exemplary behaviour; retains overview in complex situations, takes initiative at key strategic moments to administer processes of change and applies an appropriate leadership style.
- 2. To cooperate**  
Creates a good atmosphere, handles the interests of others with care, is able to conquer resistance and conflict and utilizes the qualities of all individual team members to collectively reach the predetermined goals.
- 3. To present**  
Is able to communicate messages about complex topics in an understandable and persuasive manner to a critical target audience, thereby consciously choosing the most effective form of communication.
- 4. To research**  
Is able to recognise and describe a problem or development, is able to formulate the practical research inquiry and is able to supply a solution using the appropriate research methods.
- 5. To innovate**  
Uses creativity to develop new products, services and applications that are of use in practice.
- 6. To organise**  
Plans and executes activities, brings both employees and resources effectively into action, supervises progress, adjusts when necessary and achieves the desired results.
- 7. To reflect/ to introspect**  
Is able to assess and adjust development to ensure that own performance and the work environment are in keeping with each other.
- 8. To enterprise**  
Is able to see opportunities and is able to achieve the desired results by taking risks.
- 9. To endorse sustainable behaviour**  
Is responsible for the respectful treatment and sustainability of available sources, taking into account moral standards.
- 10. To appreciate the global perspective**  
Sees the whole world as a work field and is able to operate in an international environment.

In the Bachelor programmes Aeres offers, there are 3 levels defined for these competencies: Propaedeutic phase, Main phase and Graduation phase.

Graduating students must have obtained 8 out of 10 of these competencies at the Graduation phase level and be able to proof this. Each group gets a personal coach who will be there to guide the student through their studies and support students in the process of getting to the requested competency level.

## 2.2. Final Qualifications Applied Biology

In order to guarantee that all bachelor programmes in Applied Biology reach the same national set objectives developed, the Higher Educational Institutions have developed 5 final qualifications for bachelor programmes with CROHO registration number 30009 in cooperation with the professional environment in which our graduates will work.

1. Is able to appropriately set up, implement and record biological practical research from the perspective of organism, population and biotic community (competence 1- 6)
2. Can communicate the results of the biological research in an appropriate way to the target audience(competence 3, 5)
3. Can value the knowledge of the biological specialization within the context of the discipline and in relation to other relevant disciplines, can apply the latest developments and acquire new applied knowledge (competence 4, 5)
4. Can work project based on a biological issue in a project team(competence 1, 2, 6, 7 and 8)
5. Can use insight into his/her own functioning in the biological field to act self-responsible and sustainably and is accountable for his/her own actions ((competence 1, 7 , 9 and 10).

# 3 Programme structure

## 3.1. Overview

The Major Aquatic Ecosystem Analysis is a one-year fulltime Bachelor study programme. The following section deals with the contents of the course in more detail.

The first semester you work 2 scheduled days per minor: Water Quality Analysis (Tuesday and Friday) and Water System Analysis (Monday and Thursday). Each minor includes various smaller units, courses, trainings and coaching sessions.

Besides 2 minors the Major has 4 mandatory modules in semester 2.

Table 2 discusses the contents of the modules.

*Table 1 This section provides an overview of the Major programme Int. Aquatic Ecosystem Analysis: the minors and the several modules*

<b>Sem. 1</b>	<b>week 36 2022 – week 5 2023</b>		<b>ECTS*</b>
1	Water quality analysis	AWQA	15
2	Water system analysis	AWSA	15
<b>Sem. 2</b>	<b>week 6 – week 28 2023</b>		
3	Integrated Project	AIPR	8
4	Company placement	AGWPa	9
5	Thesis project	AAWAi	10
6	Personal development and ethics	AP4Ai	3
	<b>Total ECTS*</b>		<b>60</b>

\* One ECTS corresponds with a study load of 28 hours, so 15 ECTS corresponds with 420 hours of study load. The study load is what an average student should spend on the module in time. Therefore, the student is expected to work 28 hours / ECTS in total, including seminars, trainings, meetings and study or research time.

## 3.2 Course outline Aquatic Ecosystem Analysis 2022-2023

Table 2 Course outline Aquatic Ecosystem Analysis

1 <sup>st</sup> semester	week 36 2022 – week 5 2023	code	ECTS
1	<p><b>Water quality analysis</b></p> <p>This minor focuses on the ecological aspects of water quality in a European context. The student will learn to describe the ecological status of a Dutch water body according to the WFD and analyse the results in contrast with a reference area. In order to do so, this minor includes courses on aquatic organisms, ecosystems and monitoring. The student will be trained in designing a monitoring grid, sampling and aquatic species determination.</p>	AWQA	15
2	<p><b>Water system analysis</b></p> <p>In this minor the focus is on the functioning of the water system. The student will study possible future changes for a water system in the EU to be used as a preparation study for area redevelopment. In order to do this we will look into the geophysical features of the system and describe scenarios such as climate change, hydro morphological changes and land-use changes. Courses are presented on geology, geomorphology, soils and land use, climate and hydrology, water systems and (water dependent) flora and fauna communities. You will get training in geographic information systems (GIS) and remote sensing (RS) and on how to model a water balance.</p>	AWSA	15
2 <sup>nd</sup> semester	week 6 – week 11 2023 (dates with reservation)		
3	<p><b>Integrated Project</b></p> <p>In this module students will integrate knowledge from previous minors. The students will work together as a project team in a foreign country, to combine stakeholder interests and water system functioning into restoration / conservation designs that meet policy framework and wishes. The student will test the design in an impact assessment and present and defend it for stakeholders.</p>	AIPR	8
2 <sup>nd</sup> semester	week 12 – week 28 2023 (dates with reservation due to Int. project)		
4	<p><b>Graduation Work placement</b></p> <p>In the placement the student is expected to operate as a young professional within a job profile that matches the programme the student is in</p>	AGWPa	9
5	<p><b>Graduation Project</b></p> <p>Students conduct their research and write their thesis independently. The thesis can be a research report, literature review, business plan or advisory report.</p>	AAWAI	10
5	<p><b>Personal development and ethics</b></p> <p>You will not only develop expertise in the field of aquatic ecosystem analysis, but also develop the “soft skills” a young professional needs in the working field. And as a graduated Bachelor you have to be able to deal responsibly with ethical aspects in general and in ecological issues in particular. You will develop your own code of behaviour based on your personal values and standards. These professional skills and attitudes will be assessed at the end of the programme.</p>	AP4Ai	3
<b>Total ECTS for the program</b>			<b>60</b>

### 3.3 Matrix of competences and minors

The following matrix gives you an overview on how different competences and qualifications link to each other. After completing the minors of this course you are expected to reach level 3 in the named competences and to be able to fulfil professional tasks.

Table 3 An overview on how different competences and qualifications link to each other and in which module they will be developed

Applied Biology – Major Aquatic Ecosystem Analysis						
	AWQA	AWSA	AIPR	AGWPa	AAWai	AP4Ai
<b>Final qualifications</b>						
1. Design, execute and report biological applied research from the perspective of organism- and population level.	x		x	x	x	
2. Communicate results of the biological research in an appropriate way to the target audience.			x	x	x	
3. Appreciate knowledge of biological specialisation, apply latest developments and obtain new knowledge.	x	x	x	x	x	
4. Being able to work on a biological problem in a project-based approach.	x	x	x	x	x	
5. Have insight in own functioning within the biological field, show sustainable behaviour and be able to justify one's actions within this field.		x	x	x	x	x
<b>Aeres-competencies</b>						
1: To show leadership capabilities			x	*)	*	
2: To cooperate	x	x		*	*	
3: To present			x	*	*	
4: To research	x	x		*	*	
5: To innovate			x	*	*	
6: To organise	x	x		*	*	
7: To self-direct/ to be self-driven			x	*	*	
8: To identify and persue opportunities			x	x	*	
9: To endorse sustainable behaviour		x		*	*	x
10: To appreciate the global perspective/ to globalize	x	x	x	*	*	

\*) The student may chose the competencies for the Company Placement and the Thesis in such a way that at the end of the year 8 of the 10 Aeres competencies are developed at level 3.

### 3.4 Course schedule Aquatic Ecosystem Analysis

week		type	Academic year	Activities
35	31 Aug			
36	05 Sep	L0	Introduction week	
37	12 Sep	L1	Start classes	
38	19 Sep	L2		
39	26 Sep	L3		
40	03 Oct	L4		
41	10 Oct	L5		
42	17 Oct	**	<b>Autumn break</b>	
43	24 Oct	L6		
44	31 Oct	L7		
45	07 Nov	T1	Exams T1 + assessments	Exam period T1
46	14 Nov	T1	Exams T1 + assessments	
47	21 Nov	L1		
48	28 Nov	L2	International Week Dronten	
49	05 Dec	L3		
50	12 Dec	L4		
51	19 Dec	L5		
52	26 Dec	**	<b>Christmas break</b>	
01	02 Jan	**	<b>Christmas break</b>	
02	09 Jan	L6		
03	16 Jan	L7		
04	23 Jan	T2	Exams T2 + assessments	Exam period T2
05	30 Jan	T2	Exams T2 + assessments	
06	06 Feb	L0		
07	13 Feb	L1	Sign in for resit T3	
08	20 Feb	L2		
09	27 Feb	**	<b>Spring break / Project work</b>	
10	06 Mar	L3		
11	13 Mar	L4		
12	20 Mar	L5		
13	27 Mar	L6		
14	03 Apr	L7	<i>(07 Apr: Good Friday university closed)</i>	
15	10 Apr 11 Apr	T3	<i>(10 Apr: Easter Monday – university closed)</i> Exams T3 + resits T1 and T2	Exam period T3
16	17 Apr	T3	Exams T3 + resits T1 and T2	Exam period T3
17	24 Apr	L1	<i>(27 Apr: King’s Day – university closed)</i>	
18	01 May	**	<b>Holidays; university closed Whole week</b>	
19	08 May	L2		
20	15 May	L3	<i>Thursday 18 and Friday 19 May – Ascension day; university closed</i>	
21	22 May	L4		
22	29 May	L5	<i>29 May: Pentecost Monday - university closed</i>	
23	05 June	L6		
24	12 June	L7		
25	19 June	L8		
26	26 June	T4	Exams T4 + assessment	Exam period T4
27	03 July	T4	Exams T4 + assessment	Exam period T4
28	10 July		<b>13 July: Almere: Graduation international students</b> <b>14 July: Dronten: Graduation international students</b>	
<b>29/32</b>	<b>17 July</b>		<b>Summer holidays (university closed 24 July – 14 Aug)</b>	
33	14 Aug	T5	16, 17 and 18 August Resits T5	Exam Period T5

34	21 Aug	T5	21 August Resits T5	Exam Period T5
35	28 Aug			
36	04 Sep	L0	Introduction week	
37	11 Sep	L1	Start classes academic year 2023-2024	

# 4 Educational Examination Regulations

## 4.1. Student Contract

Each student will have a student contract that indicates the individual study path of the student for that academic year. The study contract also expresses specific conditions that would have to be met at a given date during the academic year. The student contract can be regarded as a supplement to the Educational Exam Regulations and is registered in the Student Administration System (Osiris).

## 4.2. Student Charter and Code of Conduct

This student charter has been drawn up on the basis of the provisions of Article 7.59 of the Higher Education and Scientific Research Act (WHW). This charter contains the rights and obligations of students enrolled at Aeres University of Applied Sciences.

By recording the rights and obligations of students in a student charter, students can easily gain a full insight into their legal position. In addition to establishing rights and obligations that relate to the personal interest of the student, the charter also contains regulations (code of conduct) that aim to ensure that the student behaves according to the outlined norms/values and rules and regulation of studying in this academic environment. The Aeres UAS student charter and the code of conduct apply to all students of the (International) Bachelor's programs of Aeres UAS, that include students who are here on an exchange programme as part of their own study programme .

## 4.3. Examination Regulations

The Educational Exam Regulations as given here are published online as part of the Student charter. This can be found on intranet website, select "English" as a language and thereafter select the button "Student charter". Students are expected to know where to find and understand the content of the examination regulations. Although we explain the examination regulations during the introduction week and throughout the year by your personal coach and programme coordinator, students have a responsibility in reading these documents. <https://www.aereshogeschool.nl/over-aeres-hogeschool/publieke-verantwoording/onderwijs-en-examenregeling>

## 4.4. Academic Accommodations

Academic accommodations are put into place to reduce or eliminate a disadvantage as a result of their physical or mental condition. Students receiving academic accommodation are still expected to meet the requirements of the programme. Academic accommodations vary per student and are individually assessed and awarded provided that the student handed in official documentation to the academic accommodations coordinator before the start of any examination period. The academic accommodations coordinator will officially put academic accommodations in to place for those students who experience a barrier related to physical or mental condition, when:

- The intake has taken place with the academic accommodations officer
- the documentation is in order and states that the student has a disability/ condition and requires accommodations,
- the academic accommodations officer has given his or her official approval.

Students are responsible for academic accommodations at all times, parents/ guardians are only informed with written consent of the student. Students who experience the following conditions are eligible for academic accommodations:

- Learning disability (i.e. dyslexia, dyscalculia)
- Sensory impairment (i.e. hearing loss, blindness, low vision)
- Mobility

## 4.5. Student Counsellors

Student welfare is of great importance in order to succeed academically. Sometimes “life happens when you are busy making other plans” or you have or are still experiencing difficulties, problems, harassment and so on. If you cannot talk to your personal coach or this exceeds their ability to help you can contact yourself or we advise you to contact one of our student counsellors. These staff members are especially appointed and trained to work on problems with you, confidentially. Nothing you say to them will be shared with anybody.

In the event of undesirable behavior by others, a complaint can be submitted to the Complaints Committee together with the student counsellor. The latter then investigates the complaint and action can then be taken in short term. The student counsellor can also function as a liaison between you and others for other social-emotional problems.

The student counsellors can be reached by email, telephone, appointment or by walk-ins. If you prefer to make an appointment for a place outside the school, you can. If you experience problems and they exceed your personal coaches responsibilities and abilities, please contact our counsellors. Do not wait too long and contact us! Please remember that we cannot help if we do not know what is going on. We realise it can be extremely difficult to take the first step but we can are here to help. And will be there with you every step of the way.

Student counsellor in Almere:

Jeffrey van Lent

Email: [j.van.lent@aeres.nl](mailto:j.van.lent@aeres.nl)

Phone: +31(0)88- 0205321

# 5 Minor and module descriptors

## 5.1 AWQA - Water quality analysis

Minor Water Quality Analysis (AWQA)			
<b>Coordinator:</b>	A. Pouw (POA)	<b>credits:</b>	15

Elements	ECTS	Name	Exam	Period	Literature
AWQA01	6	Assessment and Learning tasks + Future monitoring	Assessment (report and presentation)	T2	Moss, B. 2018. <i>Ecology of freshwaters: Earth's Bloodstream</i> . John Wiley And Sons Ltd. EAN 9781119239406 Practical guides and additional documents will be provided on Canvas.
AWQA02	3	Advanced aquatic ecology	Written exam	T2	
AWQA03	2	International Institutions	Written exam	T1	
AWQA04	4	Sampling methods, species identification & Ecological assessment + Monitoring cycle	Report and presentation	T2	

<b>Entrance requirements:</b>	Standard requirements for all international students (min.180 EC background in relevant field of study, appropriate level of English)
<b>Professional task:</b>	During this module the student will describe the ecological status of a Dutch waterbody according to the European Water Framework Directive (WFD) and analyse the results in contrast with a reference area. Based on this information the student designs a measure for improvement of the biotic quality, including a monitoring program.
<b>Role:</b>	Practical researcher monitoring and evaluation
<b>Methods:</b>	Lectures, trainings, assignments, excursions, fieldwork, team work and self-study
<b>Fields of expertise:</b>	<b>Learning objectives for the student. The student is able to:</b>
Aquatic organisms and monitoring	<ul style="list-style-type: none"> <li>Determine aquatic organisms up to species level.</li> <li>Evaluate and report results of monitoring on professional level.</li> <li>Evaluate ones role as practical researcher monitoring and evaluation in a broader professional perspective.</li> <li>Design a monitoring plan</li> </ul>
Policies	<ul style="list-style-type: none"> <li>Describe impacts of main water policies for management of aquatic ecosystems.</li> <li>Perform ecological assessment of field data according to WFD and is able to evaluate the methodology.</li> <li>Design measures according to the WFD.</li> </ul>
<b>Assessment:</b>	You receive the 15 ECTS for this minor when all module elements are granted with a pass or a minimum 5.5 for the written exams.
<b>Aeres competencies</b>	
During this minor students will develop at least the following competencies: 2 To cooperate 4 To research 6 To organise 10 To appreciate the global perspective	
<b>Final qualifications</b>	
This minor meets the following final qualifications from the bachelor programme of Applied Biology: 1. Design, execute and report biological applied research from the perspective of organism- and population level. 3. Appreciate knowledge of biological specialisation, apply latest developments and obtain new knowledge. 4. Being able to work on a biological problem in a project-based approach.	

## 5.2 AWSA – Water system analysis

Minor Water System Analysis - AWSA			
<b>Coordinator:</b>	W.Sewnandan (SEW)	<b>Credits:</b>	<b>15</b>

Elements	ECTS	Name	Mode of exam	Period	Literature
AWSA01	6	Assessment	Assessment	2	Holden, J. 2017. <i>An introduction to physical geography and the environment</i> . Harlow UK, Pearson Education Limited. ISBN 9781292083575  Practical guides and additional documents will be provided on Canvas
AWSA02	4	Water System Modelling and GIS Techniques	Portfolio	2	
AWSA03	5	Water System Theory	Written Exam	2	

<b>Entrance requirements:</b>	Standard requirements for all international students (min. 180 EC background in relevant field of study, appropriate level of English)
<b>Professional task:</b>	During this module the student will describe different scenarios for a water system based on geophysical features and possible future changes (e.g. due to climate change, hydro morphological changes, land-use changes) to be used as preparation study for area redevelopment.
<b>Role:</b>	Eco hydrologist
<b>Methods:</b>	Lectures, trainings, assignments, excursions, fieldwork, team work and self-study.
<b>Fields of expertise:</b>	<b>Learning objectives (the student ):</b>
Water systems	<ul style="list-style-type: none"> <li>• <b>internalises water system thinking:</b> the student is able to naturally analyse the relations in the system between different elements and on different temporal and spatial scales</li> <li>• is able to understand professional and scientific literature about water systems and select information relevant for his or her own use.</li> <li>• is able to produce comprehensive maps that serve water system analysis.</li> <li>• is able to set up a water and substance balance and use them to evaluate changes in a water system</li> </ul>
<b>Aeres competencies</b>	
2 To cooperate 4 To research 6 To organise 9 To endorse sustainable behaviour 10 To appreciate the global perspective	
<b>Final qualifications</b>	
This minor meets the following final qualifications from the bachelor programme of Applied Biology: 3 Appreciate knowledge of biological specialisation, apply latest developments and obtain new knowledge. 4 Being able to work on a biological problem in a project-based approach. 5 Have insight in own functioning within the biological field, show sustainable behaviour and be able to justify one's actions within this field.	

### 5.3 AIPR – Integrated Project

Integrated Project Aquatic Ecosystem Analysis - AIPR			
<b>Coordinator:</b>	A. Pouw (POA)	<b>ECTS credits:</b>	<b>8</b>

Module elements	ECTS	Name	Exam	Period	Literature
AIPR 01	8	Assessment and Learning tasks	Assessment	T3	Project Manual and additional documents will be provided on Canvas

<b>Entrance requirements:</b>	Standard requirements for all international students (min. 180 ECTS credits background in relevant field of study, appropriate level of English)
Professional task:	During this module the student will combine stakeholder interests and water system functioning into multiple restoration/conservation designs that meet policy framework and wishes. The student will test the design in an impact assessment and present and defend it for stakeholders.
Role:	Advisor spatial planning for water systems
Methods:	assignments, excursions, fieldwork, learning tasks, team work and self-study
Fields of expertise:	Learning objectives for the student: Work in interdisciplinary context Work in international context Develop relationship with stakeholders Develop a comprehensive plan on restoration/conservation integrating different stakeholder interests,
Assessment:	You receive the 8 ECTS credits for this project if the product and presentation are both granted with a minimum 5.5.

#### Aeres competencies

During the module International Integrated Project (AIPR) students will develop at least the following competencies out of the ten core CAH-competencies ("soft skills").

- 1 To show leadership capabilities
- 3 To present
- 5 To innovate
- 7 To introspect
- 8 To enterprise
- 10 To appreciate the global perspective

#### Final qualifications:

This minor meets the following final qualifications from the bachelor programme of Applied Biology:

1. Design, execute and report biological applied research from the perspective of organism- and population level.
2. Communicate results of the biological research in an appropriate way to the target audience.
3. Appreciate knowledge of biological specialisation, apply latest developments and obtain new knowledge.
4. Being able to work on a biological problem in a project-based approach.
5. Have insight in own functioning within the biological field, show sustainable behaviour and be able to justify one's actions within this field.

## 5.4 AGWPa – Graduation Work Placement

<b>Graduation Work Placement (AGWPa)</b> <b>(Company assignment as part of the International Water Year IAEA)</b>					
<b>Coördinator:</b>	Y. Maas (MAY / A. Pouw (POA)	<b>credits:</b>	<b>9</b>		
Elements	ECTS	Name	Mode of Exam	Exam in Period	Literature
AGWPa	9	Company Placement	Placement report	4	Company Placement Manual
<b>Entrance requirements:</b>	admitted to graduation phase				
<b>Professional task:</b>	The company placement period is adapted to the chosen profile of the student. The activities as performed by the student during the company placement are in line with the chosen study programme, in this case the International Water Year (IAEA). In the placement the student is expected to operate as a young professional within a job profile that matches the programme the student is in.				
<b>Role:</b>	Junior professional				
<b>Methods:</b>	Working independently at Bachelor-level The student must spend 252 hours (9 ECTS) on the company assignment. The student organizes a final presentation at the company and writes a reflection report on his / her own performance in the professional tasks and proofs that the chosen competencies have been shown at level 3.				
<b>Fields of expertise:</b>	<b>Learning objectives (the student):</b>				
	<ul style="list-style-type: none"> <li>• obtains insight into the operational practice of the placement company, and into the place of the company in its environment.</li> <li>• carries out a practical assignment, in a self-responsible manner. This implies that placement coaching by the company will have the characteristics of general supervision.</li> <li>• effectively applies current methods of research methodology and interpretation techniques.</li> <li>• obtains insight into relevant professional activities and the accompanying requirements for Higher Education graduates, as formulated by the company and its environment. 'Relevant' means relevant to the course of which the placement is a part</li> <li>• demonstrates that he/she is proficient in a number of professional skills and competencies, as required in the course programme the student can adapt or reformulate study goals on the basis of experiences in the training period. The student conforms to these individual learning goals, set either in advance or during the training period.</li> </ul>				
<b>Assessment:</b>	1. Assessment by the company coach as an indicator 2. Assessment by the University Coach based on: <ul style="list-style-type: none"> <li>• The final placement report.</li> <li>• Assessment by the Company coach</li> </ul>				
<b>Aeres competencies:</b>	To be chosen by the student, at level 3				
<b>Final Qualifications</b>	See curriculum overview major profile				

## 5.5 AAWAi – Thesis project

Thesis project (AAWai)			
<b>Coördinator:</b>	Y. Maas (MAY)/ A. Pouw (POA)	<b>credits:</b>	<b>10</b>

Elements	ECTS	Name	Mode of Exam	Exam in Period	Literature
AAWai	10	Final Thesis	Report	1234	n.a.

<b>Entrance requirements:</b>	admitted to graduation phase
<b>Professional task:</b>	Based on own choice
<b>Role:</b>	Junior professional
<b>Methods:</b>	Students conduct their research and write their thesis independently. The thesis can be a research report, literature review, business plan or advisory report.
<b>Fields of expertise:</b>	<b>Learning objectives (the student):</b>
Based on own choice	<ul style="list-style-type: none"> <li>...conducts research and reports on an important topic related to the future work environment ...is able to practice and show proof of selected Aeres competencies at level 3, based on the students own choice</li> </ul>
<b>Aeres competencies:</b>	To be chosen by the student, at level 3
<b>Final Qualifications</b>	See curriculum overview major profile

## 5.6 AP4Ai - Personal development and ethics

<b>Personal development (AP4Ai)</b>					
<b>Coordinator:</b>		Y. Maas (MAY) / A. Pouw (POA)		<b>credits:</b>	
				<b>3</b>	
<b>Module elements</b>	<b>EC</b>	<b>Name</b>	<b>Exam</b>	<b>Period</b>	<b>Literature</b>
AAP4i01	1	Managing competences	Report	4	Information on canvas
AAP4i02	2	Ethics	Presentation	2	Information on canvas
<b>Entrance requirements:</b>		To enter the 4 <sup>th</sup> year students should have obtained 170 ECTS credits at least, from the first three years of their studies and completed all of the personal development modules from year 1 to 3.			
<b>Professional task:</b>		Personal Development and self-reflection			
<b>Role:</b>		Junior professional			
<b>Methods:</b>		Training, class discussions, individual assignments.			
<b>Fields of expertise:</b>		<b>Learning objectives (the student):</b>			
Personal development		<ul style="list-style-type: none"> <li>Reflects constantly on his or her own personal- and competency development, part of the lifelong learning paradigm.</li> </ul>			
Ethics		<ul style="list-style-type: none"> <li>The student shows he or she is able to formulate an opinion on important and current aspects of the professional work environment, based on own experience and norms and values or that of others, while he or she is able to separate opinion from facts. The student shows that he or she can and is willing to openly discuss and exchange ideas with others on these kinds of topics.</li> </ul>			
<b>Aeres competencies:</b>		<ul style="list-style-type: none"> <li>8 out of 10 Aeres competencies must be at level 3 (highest level). Assessed by means of final report and meeting in which students show examples of situations where they worked on improving their competencies. The examples given are based on the goals students set at the beginning of the year and halfway through the third and fourth year. The examples are given using the STARR method and goals are formulated according to the SMART method.</li> </ul>			
<b>Final qualifications:</b>		<ul style="list-style-type: none"> <li>Management and development of own professional and personal attitude and skills</li> <li>Effective cooperation and communication in a multi-disciplinary, intercultural environment.</li> </ul>			



## Annex 1: Aeres Competencies and indicators for different levels

		1	2	3	4	5	6	7	8	9	10
Competencies →		To show leadership capabilities	To cooperate	To present	To research	To innovate	To organise	To introspect	To enterprise	To endorse sustainable behaviour	To appreciate the Global perspective
Growth indicators ↓											
1	Roles		X								
2	Responsibility	X					X	X		X	
3	Independence	X	X		X			X	X		
4	Public	X		X							X
5	Time limit		X			X	X		X	X	
6	Work						X				
7	Procedures				X						
8	Knowledge and insight			X	X	X					
9	Insecurity							X	X		X
10	Change	X				X		X			X
11	Scope			X			X		X	X	

		Level 1 (year 1)	Level 2 (main phase)	Level 3 (BSc)
1	Roles	skilled worker	specialist	researcher adviser
		manager	operational manager	strategic manager
		small business entrepreneur	entrepreneur	innovative manager
2	Responsibility	delegated responsible	co-responsible	final responsible
3	Independence	external control	own risk and initiative	own risk, own initiative
4	Public	familiar colleagues and contacts within the own field of work	new target group within the own sector	unfamiliar or expert target groups domestic or abroad
5	Time limit	1 year	1-5 years	5-10 years
6	Work	singular task	several tasks	combined tasks
7	Procedures	adjust and improve	develop	continuous innovation
8	Knowledge + insight	facts, methods, principles	background, explanation	integration and discussion
9	Insecurity	situations with unknown factors	situations with unpredictable	continuously changing circumstances
10	Change	introduce, initiate, direct	control, direct, form	pro-active behaviour, innovate, design
11	Scope	transfer within the sector	transfer within adjoining sectors	transfer across sectors



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