

Implementation Regulation for the HZ University of Applied Sciences Academic and Examination Regulations for the Programme: Aquatic Ecotechnology (34332) 2020-2021

1.1 General

1.1.1 The Academic and Examination Regulation (OER HZ) forms the core of the teaching at HZ University of Applied Sciences (HZ), and gives a general picture of all the programmes that HZ provides. The OER HZ contains provisions that are specific to the institution, and these therefore apply to the University as a whole. Each year the Executive Board establishes an OER HZ Implementation Regulation (hereafter: Implementation Regulation) for each programme.

1.2 Programme Committee

- 1.2.1 The Programme Committee is given the opportunity to issue advice to the Executive Board before it establishes a specific Implementation Regulation.
- 1.2.2 The Programme Committee assesses how the OER and the Implementation Regulation were applied each year.

1.3 Domain Director

- 1.3.1 The Domain Director in question is responsible for:
- a. the implementation of the OER HZ;
 - b. the interpretation and implementation of the Implementation Regulation;
 - c. an annual evaluation of the OER HZ and the Implementation Regulation to be presented to the Executive Board; in this evaluation he or she considers how much of the student's time the OER HZ and the Implementation Regulations require, and consequently monitors and if necessary modifies the student workload (art. 7.14 Higher Education and Academic Research Act (WHW));
 - d. the preparation of modifications to the Implementation Regulation.

Chapter 2 Implementation Regulation per programme: Aquatic Ecotechnology, full-time

2.1 Enrolment, required qualifications and entry requirements

There are no new enrolments since 2015-2016 and in 2016-2017. The enrolment requirements for previous study years are stated below.

- 2.1.1 Overview of further qualification requirements (art. 2.3 OER HZ in addition to the requirements stated in article 2.2. OER HZ)

HAVO profiles	NT	NG	EM	CM
Programme:				
Student with HAVO diploma (up to 1-Aug-2009)	✓	✓	✗	✗
Student with HAVO diploma from 1-Aug-2009	✓	✓	✗	✗

VWO profiles	NT	NG	EM	CM
Programme:				
Student with VWO diploma (up to 1-Aug-2010)	✓	✓	✗	✗
Student with VWO diploma from 1-Aug-2010	✓	✓	✗	✗

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- ✓ right to access (with deficiency, if applicable)
- ✗ no right to access

Students with a MBO level 4 diploma have right to access, except when the programme is a part of the domain “handel en ondernemerschap” or economie en administratie”. In that case the student is deficient.

2.1.2. Deficiency investigation (article 2.4 of the HZ AER)

Enrolment: the investigation for HAVO and VWO students for the Water Management / Aquatic Ecotechnology programme will be into the following subjects at HAVO level 5:

- Mathematics A (for social sciences)
- Chemistry
Supplemented by one of the following subjects:
- Biology
- Mathematics B

Students must demonstrate before 1 September 2016 that they have no shortfall by means of certificates showing that the subjects in question have been passed at HAVO level 5, scoring at least a pass mark (5.5) in all subjects.

*For students with a MBO diploma the deficiency investigation is a part of the SKC.(Studie Keuze Check)
A positive advice based on the SKC means that the student have the right to access.
A negative advise leads to refusal of the access.*

2.1.3 Additional requirements (art. 2.5 OER HZ)
None

2.1.4 Working environment requirements for the part-time programme (art. 2.6. OER HZ)
Not applicable, it's a fulltime programme

2.1.5 Working environment requirements for the dual programme (art. 2.7. OER HZ)
Not applicable, it's a fulltime programme

2.1.6 Admission of students coming from foreign educational partner institutions (Articles 2.8 and 4.8 of HZ CER).
No longer applicable.

2.2 Structure of the programme and teaching, supplement with degree certificate

2.2.1 Study programme profile (Article 3.2, HZ Academic and Examination Regulations)

Current developments in the profession of a water manager

The key water problems that the Bachelor of Water management / Aquatic Ecotechnology will face in society are (still) contamination, water nuisance/floods and water shortages. There is a lack of water managers who can be deployed nationally and internationally in these fields

The focus is increasingly on cross-border water management (based on catchment areas). The European water guideline framework (EWFD) is an important force behind the changes in water management. (Cross-border) catchment area-based water management is central to the WGF. To Dutch water management, the WGF also means greater attention to fisheries management (objectives and monitoring) and continuous monitoring of indicator groups such as plants, algae and macro fauna. In addition, the WGF requires active participation by the parties (interest groups and members of the public) in the creation of catchment area-management plans.

Because of climate change, it is important to tackle water nuisance and any water shortages too. According to the WB21 policy document, the Dutch public sector faces a water challenge: 60,000 hectares of land will have to be allocated as a water reservoir over the coming years.

Industry and the business sector have a lot of questions about water purification and the reuse of water (water pinch). Attention to the whole water chain is increasing; extraction, transport, consumption, recirculation and discharges. This means that the boundaries of the tasks of traditional water managers - companies such as utility companies, water boards and provinces - are becoming blurred.

Increasing salination of the soil and the poor economic outlook for traditional agriculture require solutions and measures. Solutions could be in the field of spatial planning (see the governmental decisions in the Memorandum on Spatial Planning) by indicating what type of land use or water use provides what opportunities.

The shellfish sector (cockles and mussels) and wild-caught fish (in particular sole, cod and eel) are both under heavy pressure (fish quotas plus the closing off of the Waddenzee for cockle seed and mussel seed fishery). This pressure is being felt even more in our Delta and the Province of Zeeland is playing an important role in combining knowledge and experience about saline cultivation (crops, shellfish and fish).

In addition to these national and regional developments, the global water-related themes remain current: shortages of clean drinking-water in many areas of the world, poor quality of groundwater and surface water, and the risk of floods coming from the sea or the hinterland.

Vision for the programme

To respond to the above-mentioned challenges and developments in water management, future water managers are expected to have a broad, generalised vision of water on one hand. On the other hand, however, water managers are also expected to have focused further in specific specialist fields or areas of knowledge.

The foundations for the water managers who are trained at HZ University of Applied Sciences is thorough knowledge and understanding of the supporting capacity of water and water systems. The ecological functions of water, the processes in water and their interrelationships thus form the core of the programme.

Bachelors of Water management / Aquatic Ecotechnology (BWM) are professionals who resolve water-related problems: they can present and work out useful solutions for various types of problems, based on their excellent fundamental knowledge of water and using a variety of concepts.

BWMs know about the possible technical solutions, but are sufficiently aware that water-related problems almost always have other dimensions (economics, legislation and regulations, culture, communication and administration).

The mission of the educational programme is:

The Aquatic Ecotechnology / Bachelor of Water Management educational programme is a high-quality international vocational programme in Integrated Water Resources Management. The programme works together with educational institutions, advice bureaus, authorities and knowledge institutes in the Netherlands and in other countries (particularly in Europe). A limited number of initial and subsequent Bachelor's and Master's water management programmes are being developed for various target groups together with these partners.

Focal points of the programme

The BWM degree programme focuses on water in broad terms and is unique in that students study saline water, fresh water and the transitions between them. In addition, the programme is unique because it combines knowledge of water ecology with water technology (including hydraulic engineering).

Specific areas of interest within it are the water system approach and the water chain approach. The water system approach emphasizes the water system as an entity: problems (e.g. caused by the way humans use it) and solutions for instance for a lake, an estuary, a river or pond are approached by looking at how the system functions. Within this, the emphasis is particularly on natural and semi-natural water systems in urban areas.

The central theme in the water chain approach is use of the water by humans, which is optimised to match the supporting capacity of the water systems. The emphasis here is on water flow and water systems in more urban and industrial environments. Knowledge of techniques and technology plays an important role.

Sustainable development of water systems and water consumption is a central theme in all situations.

The Delta Academy Applied Research Centre plays a key role where long-term research programmes into water themes are involved. Students of this programme work structurally with students of other programmes on education projects and graduation projects based on those themes. There is intensive cooperation with a number of knowledge institutes in the EU region. As well as making work placements available, this cooperation consists of working together on third-party projects, educational projects, and working out elements of programmes involving specialist themes to be provided by knowledge institutes. The teaching staff and the programme itself jointly make up the Centre for Sustainability and Water. The centre focuses on applications of knowledge for small and medium-sized enterprises and the public sector, and on developing instruments for changes. Institutes and centres of expertise that the Delta Academy cooperates with are WMR (Wageningen Marine Research), Ghent University, Antwerp University, Wageningen University and Syntens. Lecturers from water-related degree programmes at Larenstein/van Hall, Alkmaar and Noordelijke Hogeschool Leeuwarden are working together and present a joint profile to the interest groups. The positioning of the programme and the teaching staff in this is content-based, using a technical angle of approach with an international outlook. Its strength also lies in the multidisciplinary approach to the themes, such as saline cultivation methods and freshwater problems.

2.2.2. Competences (art 3.2 OER HZ)

Description of the competences of the study program Aquatic Ecotechnology:

Description of the competencies of the study programme:	
1	Giving information and advice for, and drawing up and assessing, (policy) plans for aquatic systems and spatial planning. Representing the water sector during the integral weighing-up of interests.
	1.1 Giving information to parties that are directly and indirectly involved in water management.
	1.2 Representing the interests of the water sector in multidisciplinary discussions.
	1.3 Providing advice for (policy) plans and assessing them.
	1.4 Lobbying and creating / maintaining networks.
2	Formulating a vision and realising objectives regarding the sustainable functioning and social use of aquatic systems.
	2.1 Formulating targets for and/or visions on the desired future situation for a water system or for water use, wholly or partly based on a reference view and in consultation with those involved
	2.2 Realising a vision and/or target for the objectives and/or standards, in consultation with those involved.
3	The HBO Bachelor can ask a question, think up a method to find an answer to it, collect and analyse data, formulate an answer to the study question and report to third parties about all the activities and findings.
	3.1 You are able to draw up a proposal for (applied) research and set up research for solving problems in practical situations.
	3.2 The HBO Bachelor performs the study as described in the study proposal, monitors the progress and quality and makes adjustments where necessary.
	3.3 The HBO Bachelor interprets the collected and structured data and draws conclusions about the study question. In addition, he/she evaluates the results and the process and draws up a report on them.
	3.4 The HBO Bachelor's conduct is in accordance with the (ethical) standards of behaviour for research.
4	Thinking up and developing ecotechnological directions for the solutions for problems in aquatic systems, taking policy into account.
	4.1 Drawing up alternatives/variants/packages of measures
	4.2 Analysing/assessing/prioritising alternatives/variants.
	4.3 Drawing up a schedule of requirements
	4.4 Drawing up a restructuring plan at the area level.
	4.5 Designing the layout work.
	4.6 Drawing up a work plan.
5	Providing leadership to and/or coordination or guidance for execution and maintenance activities in aquatic systems.
	5.1 5.1 Supervising execution projects (realisation).
	5.2 5.1 Planning and supervising management and maintenance activities.
6	Monitoring the condition of aquatic systems, evaluating data from monitoring, and reporting on the effects of measures.
	6.1 Drawing up a monitoring plan and supervising its execution
	6.2 Processing large amounts of data using IT tools.

2.2.3. Structure of the programme (art 3.3, 3.13, OER HZ)

Structure of the programme:	
National name:	<i>Aquatische Ecotechnologie</i>
International name:	<i>Water Management / Aquatic Ecotechnology</i>
Degree awarded:	<i>Bachelor of Water management / Aquatic Ecotechnology</i>
Duration of study:	4 years
Study workload during the first-year phase:	60 EC
Study workload during the main phase:	180 EC
Variant:	Full-time
CROHO code:	34332
Location:	Vlissingen
Teaching language:	Dutch/English
Starting date of accreditation:	01-01-2014
Ending date of programme:	31-08-2021
Associate degree:	<i>Not applicable</i>
Joint programme:	<i>Not applicable</i>
Accelerated programme	<i>Not applicable</i>

The bachelor programme Aquatic Eco Technology (Croho 34332) has been disestablished by the government since September 1st 2015. Since then the programme has been conjoined with the bachelor programme Delta Management (Croho 39278) under the new 'root' programme Water Management (Croho 34074). As off 31st of August 2021 the programme AET 34332 will fully expire (art. 7.3, 6 WHO). Thus 2021 is the last year in which the programme AET can be completed by students who are still subscribed to the programme. After the 31st of August 2021 it is no longer possible to acquire the diploma Aquatic Eco Technology.

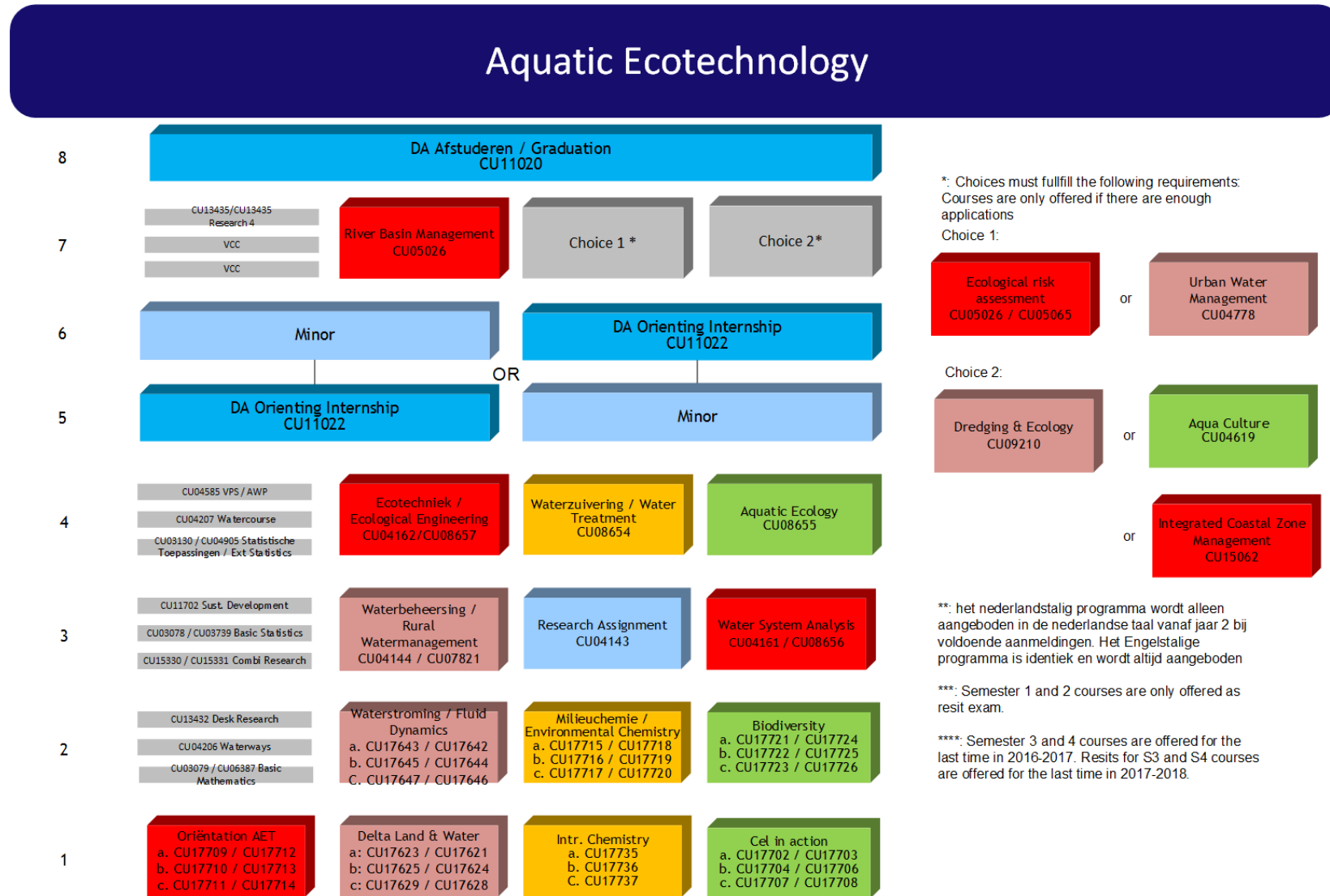
The programme is taking several measures to help students graduate in time:

1. Every student that is still in the programme will receive a letter and e-mail about the expiration of the programme in July 2020.
2. Every student will be invited personally to attend an informative meeting before the start of the study year. In this meeting the dean, study career coach, programme coordinator and education supporter will be present. During this meeting all students get an individual study plan for the year ahead.
3. Resits will be adjusted according to the individual study plans; if possible, resits will be clustered with resits of other students of the programme.
4. Students can only claim resits for courses that are presented in the table on page 7 of the implementation regulation 2017-2018 (*The programme that is offered for CROHO 34332 in 2017 – 2018 see the figure below and the transition regulations in 2.2.14*). Here copied below (p. 7)
5. Next to participating in individual coaching by the study career coach, every student needs to attend a progress meeting every six weeks. It is mandatory to be present.

After 31-08-2021 it is only possible to subscribe for the new and broad programme Water Management if students wish to complete a bachelor degree. Based on comparison of the two programmes Aquatic Eco Technology and Water Management it will be decided per student what study route can lead to graduation within Water Management.

This regulation is based upon art. 6.2, 11 of the Implementation Regulation HZ Bachelor and art. 7.3, 6 of the Wet op het Hoger onderwijs en Wetenschappelijk Onderzoek.

The programme that was last offered for CROHO 34332 in 2017 – 2018 see the figure below and the transition regulations in 2.2.14:



2.2.5.a HZ annual schedule

HZ annual schedule is available on HZ's website, www.hz.nl, and via HZ Infonet (infonet.hz.nl)

2.2.6 Free composition courses (Art. 3.12 HZ OER)

See CU06281 and CU06282

2.2.7 Graduation specialisations (Article 3.10, HZ OER)

There are no specialisations within the Water management / Aquatic Ecotechnology programme.

The programme has a number of optional courses which are provided in semester 7 of the 4th year of the course. Students draw up their elective packages at the start of that semester, choosing between subjects provided within the training programme as defined in the "Course programme structure", coming to 30 EC. These electives are part of the 240 EC that are required to obtain the Bachelor degree. As an option, students can choose a maximum of two additional electives from the courses provided by the Delta Academy. These two electives are in addition to the 240 EC of the package chosen.

Students have to indicate by no later than 13 September 2014 which choices they have made for implementing Semester 1 of their study programme in the 4th year of the course by submitting the completed option form to the academy office.

2.2.8 Work placement (Article 3.9, HZ OER)

Students who want to take part in the orienting work placement course CU11022 (internship) of the study programme must meet the following conditions:

- The student must have an approved and signed work placement contract
- Students who need to enter a construction site are strongly advised to have a valid VCA-certificate. If you do not have a VCA-certificate you are not allowed access a construction site in the Netherlands, this can be essential to acquire the competencies linked to the work placement.

The maximum period in which students are allowed to work on the same internship project:

- The period in which a specific internship project is worked out is 1 semester, with a maximum extension of 1 semester.

Additional conditions for work placements (Internships) abroad (outside the Netherlands):

- A maximum amount of 15 EC of resits in the semester of internship is allowed. If the student has more than 15EC of resits in the simultaneous running semester of the internship, the student is not allowed to attend the internship abroad since this will cause difficulties in attending the resits.

2.2.9 Minor (art 3.8 OER HZ)

Students who want to take part in the Minor of the study programme must meet the following conditions:

- Students who need to enter a construction site are strongly advised to have a valid VCA-certificate. If you do not have a VCA-certificate you are not allowed access a construction site in the Netherlands, this can be essential to acquire the competencies linked to the work placement.

Additional conditions for work placements (Internships) abroad (outside the Netherlands):

- A maximum amount of 15 EC of resits in the semester of internship is allowed. If the student has more than 15EC of resits in the simultaneous running semester of the internship, the student is not allowed to attend the internship abroad since this will cause difficulties in attending the resits.

The core of the minor regulations can be found in article 3.8 of the OER HZ. Further regulations and explanation can be found in the minor catalogue. The contents of HZ minors can be found at

www.kiesopmaat.nl

AET

2.2.10 Participation in international exchange programme (art 4.5 OER HZ)

The Water management / Aquatic Ecotechnology programme does not take part in any international exchange programmes. There are no additional conditions of participation besides the conditions stated in article 4.5. of the Academic and Examination Regulations of HZ.

2.2.11 Graduation (art. 3.9. OER)

In order to participate in the Water management / Aquatic Ecotechnology programme graduation phase, students must:

- *have obtained at least 175 EC from the first-year phase and main phase when starting the graduation study period.*
- *have obtained 210 study points from the first year phase and main phase, before the graduation study report is submitted for assessment, as defined in the course programme.*
- *carry out the graduation project at a company, body or department within the AET field of expertise.*

The test plan is included in the article "Main phase courses", Semester 8

The maximum period in which students are allowed to work on the same graduation project:

The period in which a specific graduation project is worked out is 1 semester, with a maximum extension of 1 semester.

2.2.12 Supplement with degree certificate (art. 6.11 OER HZ)

Annulled

2.2.13 Not applicable

2.2.14 Course adaptation overview AET year 1 - 4

- No lectures and no standard resits are offered anymore. If a student needs to do a resit, the student needs to contact the study career coach to find a proper solution.
- Resits are only offered individually.
- See paragraph 2.2.3 'structure of the programme' for more information.

2.3. Study advice

2.3.1. Definition of conditions of enrolment in programme after negative binding study advice (art. 8.1 paragraph 9 OER HZ): Annulled

3.1. Establishment

3.1.1 The period of the Implementation Regulation is equal to the period of the OER HZ 2020-2021.

3.1.2 This Implementation Regulation was established by the Executive Board on 06-10-2020.

Appendices:

Appendix 1. Course overview AET year 1, 2, 3 and 4

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Appendix 1. Course overview AET

Semester 1 phased out										
CU17623 CU17621 (Eng)	Title: Delta, Land & Water part 1 Contacttime: 22 hrs				Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English			
Conditions of participation: <i>none</i>										
Special condition for awarding study points (tick-box test): <i>none</i>										
<p>Brief description of the course content: Deltas across the whole world have attracted people for centuries. More and more people are settling in the delta areas to work, for recreation or to live there. For example, consider major cities such as New Orleans (Mississippi delta), New York (Hudson delta), Alexandria (Nile delta), or - in the Netherlands - Rotterdam and Zeeland (the Rhine/Maas and Schelde delta).</p> <p>Living in a delta area really does mean living with water. This course therefore discusses extensively what a delta is and how it is created, so that the structure of the soil and the surface becomes clear. A delta also continues to develop further, which requires cooperation with nature. All these 'delta' aspects are looked at on a global scale and supplemented with basic skills such as digital drawing and use of GIS.</p> <p>Delta, Land and Water part 1 covers the first theoretical part of this course.</p>										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resit in week
	V	W	O	Form						
1		X		Exam: Part 1 DL & W	3.1	100%	5.5			

CU17625 CU17624 (Eng)		Title: Delta, Land & Water part 2 Contacttime: 22 hrs			Number of ECs: 2.5		Mandatory		Teaching language: Dutch / English		
Conditions of participation: <i>none</i>											
Special condition for awarding study points (tick-box test): <i>none</i>											
<p>Brief description of the course content: Deltas across the whole world have attracted people for centuries. More and more people are settling in the delta areas to work, for recreation or to live there. For example, consider major cities such as New Orleans (Mississippi delta), New York (Hudson delta), Alexandria (Nile delta), or - in the Netherlands - Rotterdam and Zeeland (the Rhine/Maas and Schelde delta).</p> <p>Living in a delta area really does mean living with water. This course therefore discusses extensively what a delta is and how it is created, so that the structure of the soil and the surface becomes clear. A delta also continues to develop further, which requires cooperation with nature. All these 'delta' aspects are looked at on a global scale and supplemented with basic skills such as digital drawing and use of GIS.</p> <p>Delta, Land and Water part 2 covers the second theoretical part of this course.</p>											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of Resits in week
	V	W	O	Form							
1		X		Exam: Part 2 DL & W	3.1	100%	5.5				

CU17629 CU17628 (Eng)	Title: Delta, Land & Water part 3 Contacttime: 22 hrs			Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English				
Conditions of participation: <i>none</i>										
Special condition for awarding study points (tick-box test): <i>none</i>										
<p>Brief description of the course content: Deltas across the whole world have attracted people for centuries. More and more people are settling in the delta areas to work, for recreation or to live there. For example, consider major cities such as New Orleans (Mississippi delta), New York (Hudson delta), Alexandria (Nile delta), or - in the Netherlands - Rotterdam and Zeeland (the Rhine/Maas and Schelde delta).</p> <p>Living in a delta area really does mean living with water. This course therefore discusses extensively what a delta is and how it is created, so that the structure of the soil and the surface becomes clear. A delta also continues to develop further, which requires cooperation with nature. All these 'delta' aspects are looked at on a global scale and supplemented with basic skills such as digital drawing and use of GIS.</p> <p>Delta, Land and Water part 3 covers digital drawing and the use of GIS</p>										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of Resits in week
	V	W	O	Form						
1			X	Exam: AutoCAD	3.1	50%	5.5			
2			X	Exam: GIS	3.1	50%	5.5			

CU17702 CU17703 (Eng.)	Title: Cell in Action part 1 Contact hours: 21,5				Number of ECs: 2.5	Mandatory	Teaching language: Dutch/English			
Conditions of participation: <i>not applicable</i>										
Special condition for awarding study points (tick-box test): <i>not applicable</i>										
Brief description of the course content: As a Bachelor of Water management / Aquatic Ecotechnology (BWM), you will regularly need to be able to understand biology. The basis of every living creature is the cell, which is why the cell is the central theme in this course. Together with your fellow students, you are going to observe living cells, measure their activities and find out what affects the activities of cells. You will do this by studying cells in an experiment that you have set up for yourself. Carrying out the experiment will automatically raise more questions which you will discuss with your fellow students. Additional lectures and/or practical lessons may be required to find answers to the questions. Finally, you will have acquired the knowledge and insight to explain phenomena at the cellular level and say what they mean for aquatic systems and ecosystems.										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O							
1		x		Exam	3.1, 3.2, 3.3, 3.4	100%	5.5			

CU17704 CU17706 (Eng.)	Title: Cell in Action part 2 Contact hours: 21,5				Number of ECs: 2.5	Mandatory	Teaching language: Dutch/English			
Conditions of participation: <i>not applicable</i>										
Special condition for awarding study points (tick-box test): <i>not applicable</i>										
Brief description of the course content: As a Bachelor of Water management / Aquatic Ecotechnology (BWM), you will regularly need to be able to understand biology. The basis of every living creature is the cell, which is why the cell is the central theme in this course. Together with your fellow students, you are going to observe living cells, measure their activities and find out what affects the activities of cells. You will do this by studying cells in an experiment that you have set up for yourself. Carrying out the experiment will automatically raise more questions which you will discuss with your fellow students. Additional lectures and/or practical lessons may be required to find answers to the questions. Finally, you will have acquired the knowledge and insight to explain phenomena at the cellular level and say what they mean for aquatic systems and ecosystems.										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O							
2		X		Exam	3.1, 3.2, 3.3, 3.4	100%	5.5			

CU17707		Title: Cell in Action part 3			Number of ECs: 2.5		Mandatory		Teaching language: Dutch/English		
CU17708 (Eng)		Contact hours: 21,5									
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>not applicable</i>											
Brief description of the course content: As a Bachelor of Water management / Aquatic Ecotechnology (BWM), you will regularly need to be able to understand biology. The basis of every living creature is the cell, which is why the cell is the central theme in this course. Together with your fellow students, you are going to observe living cells, measure their activities and find out what affects the activities of cells. You will do this by studying cells in an experiment that you have set up for yourself. Carrying out the experiment will automatically raise more questions which you will discuss with your fellow students. Additional lectures and/or practical lessons may be required to find answers to the questions. Finally, you will have acquired the knowledge and insight to explain phenomena at the cellular level and say what they mean for aquatic systems and ecosystems.											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week	
	V	W	O								Form
3		X		Practical	3.1, 3.2, 3.3, 3.4	50%	5.5				
4		X		Saltwater aquarium	3.1, 3.2, 3.3, 3.4	50%	5.5				

CU17735	Title: Introductory Chemistry part 1 Contact hours: 24				Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English				
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>not applicable</i>											
Brief description of the course content: This course teaches you basic knowledge and skills for chemistry. The theory of atomic structures, chemical reactions, acidic and basic substances, pH calculations, redox reactions, chemical equilibrium, organic chemistry and biochemistry will all be dealt with. The practical lessons that you take will teach you to work properly and safely in a laboratory.											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
1		X		Theory	1.1, 3.1, 3.2, 3.3, 3.4	100%	5.5				

CU17736	Title: Introductory Chemistry part 2 Contact hours: 24				Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English			
Conditions of participation: <i>not applicable</i>										
Special condition for awarding study points (tick-box test): <i>not applicable</i>										
Brief description of the course content: This course teaches you basic knowledge and skills for chemistry. The theory of atomic structures, chemical reactions, acidic and basic substances, pH calculations, redox reactions, chemical equilibrium, organic chemistry and biochemistry will all be dealt with. The practical lessons that you take will teach you to work properly and safely in a laboratory.										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O							
2		X		Theory	1.1, 3.1, 3.2, 3.3, 3.4	100%				

CU17737	Title: Introductory Chemistry part 3 Contact hours: 24				Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English			
Conditions of participation: <i>not applicable</i>										
Special condition for awarding study points (tick-box test): <i>not applicable</i>										
Brief description of the course content: This course teaches you basic knowledge and skills for chemistry. The theory of atomic structures, chemical reactions, acidic and basic substances, pH calculations, redox reactions, chemical equilibrium, organic chemistry and biochemistry will all be dealt with. The practical lessons that you take will teach you to work properly and safely in a laboratory.										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O							
3		X		Practical work	1.1, 3.1, 3.2, 3.3, 3.4	30%	5.5			
4		X		Report on practical work	1.1, 3.1, 3.2, 3.3, 3.4	70%	5.5			

CU17709/ CU17712 (Eng.)		Title: Orientation AET/WM part 1 Contact hours: 14				Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English			
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>Participation in the excursion within the framework of this course</i>											
Brief description of the course content: This course provides an orientation to the Aquatic Ecotechnology degree programme and the profession of water manager. You learn how varied water management is, what the potential water problems there are and their solutions, and where you may be working in future. The course has many different working formats (small tasks, work tutorials, lectures and guest lectures, role-playing, excursions and a larger task).											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
1		X		Exam	1.1, 1.2, 1.3, 1.4, 2.2, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4	100%	5.5				

CU17710/ CU17713 (Eng.)		Title: Orientation AET/WM part 2 Contact hours: 14				Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English			
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>Participation in the excursion within the framework of this course</i>											
Brief description of the course content: This course provides an orientation to the Aquatic Ecotechnology degree programme and the profession of water manager. You learn how varied water management is, what the potential water problems there are and their solutions, and where you may be working in future. The course has many different working formats (small tasks, work tutorials, lectures and guest lectures, role-playing, excursions and a larger task).											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
2		X		Exam	1.1, 1.2, 1.3, 1.4, 2.2, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4	100%	5.5				

CU17711/ CU17714 (Eng.)		Title: Orientation AET/WM part 3 Contact hours: 14				Number of ECs: 2.5		Mandatory		Teaching language: Dutch / English	
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>Participation in the excursion within the framework of this course</i>											
Brief description of the course content: This course provides an orientation to the Aquatic Ecotechnology degree programme and the profession of water manager. You learn how varied water management is, what the potential water problems there are and their solutions, and where you may be working in future. The course has many different working formats (small tasks, work tutorials, lectures and guest lectures, role-playing, excursions and a larger task).											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
3		X		Project	1.1, 1.2, 1.3, 1.4, 2.2, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4	100%	5.5				

Semester 2 phased out										
VCCU17643 VCCU17642 (Eng)		Title: Fluid dynamics part 1 Contacttime: 10 hrs				Number of ECs: 1,25		Mandatory	Teaching language: Dutch / English	
Conditions of participation: none										
Special condition for awarding study points (tick-box test): none										
Brief description of the course content: <i>The water flow course discusses the basic principles of fluid mechanics. It looks at practical applications of the theory, such as calculating details of a culvert, a waterway and a dam. Attention is also paid to hydrostatics (the force water exerts on a wall) and soil protection. During this course, students perform measurements at the Hydraulic Flow Laboratory and are given an introduction to the Sobek simulation programme (1dflow and RR). The task will be to make calculations, using Excel or Sobek, for a water-permeable construction in the Grevelingen or Veerse Meer. Part 1 of this course covers the interim exam.</i>										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form						
1		X		Exam: Interim test	3.1	100%	5.5			

CU17645 CU17644 (Eng)		Title: Fluid dynamics part 2 Contacttime: 20 hrs				Number of ECs: 2,5		Mandatory	Teaching language: Dutch / English	
Conditions of participation: none										
Special condition for awarding study points (tick-box test): none										
Brief description of the course content: <i>The water flow course discusses the basic principles of fluid mechanics. It looks at practical applications of the theory, such as calculating details of a culvert, a waterway and a dam. Attention is also paid to hydrostatics (the force water exerts on a wall) and soil protection. During this course, students perform measurements at the Hydraulic Flow Laboratory and are given an introduction to the Sobek simulation programme (1dflow and RR). The task will be to make calculations, using Excel or Sobek, for a water-permeable construction in the Grevelingen or Veerse Meer. Part 2 of this course covers the final exam.</i>										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form						
1		X		Exam: Final test	3.1	100%	5.5			

CU17647 CU17646 (Eng)	Title: Fluid dynamics part 3 Contacttime: 30 hrs				Number of ECs: 3,75	Mandatory	Teaching language: Dutch / English				
Conditions of participation: <i>none</i>											
Special condition for awarding study points (tick-box test): <i>none</i>											
Brief description of the course content: <i>The water flow course discusses the basic principles of fluid mechanics. It looks at practical applications of the theory, such as calculating details of a culvert, a waterway and a dam. Attention is also paid to hydrostatics (the force water exerts on a wall) and soil protection. During this course, students perform measurements at the Hydraulic Flow Laboratory and are given an introduction to the Sobek simulation programme (1dflow and RR). The task will be to make calculations, using Excel or Sobek, for a water-permeable construction in the Grevelingen or Veerse Meer. Part 3 of this course covers two practicals and a task.</i>											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
1			X	Report: Practical: Water lab	3.1	40%	5.5				
2			X	Report: Practical: Sobek	3.1	40%	5.5				
3			X	Report: Course task	1.1	20%	5.5				

CU17715/ CU17718 (Eng.)	Title: Environmental chemistry part 1 Contact hours: 17			Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English				
Conditions of participation: <i>not applicable</i>										
Special condition for awarding study points (tick-box test): <i>not applicable</i>										
<p>Brief description of the course content: The central theme of Environmental Chemistry is a task about the water quality of the Grevelingenmeer. The Grevelingenmeer is stratified. This causes increased oxygen deprivation in the deeper parts of the stratified lake. Studies are currently being performed to flush water through the Grevelingenmeer now that the Flakkeese Spuisluis has been commissioned. To monitor any future changes, the chemical water quality of the Grevelingenmeer is being mapped out and the focus will be on oxygen, pH, salinity and nutrients. You will also cover drinking water quality and the effects of contaminants during the Environmental Chemistry lessons.</p> <p>Environmental Chemistry is the study of the sources, reactions, transport and effects of chemical substances in the environment. Because the environmental chemistry course is intended in particular for aquatic ecotechnology, the emphasis will be on the quality of the water.</p>										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form						
1		X		Exam	2.1, 3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	100%	5.5			

CU17716/ CU17719 (Eng.)	Title: Environmental chemistry part 2 Contact hours: 17			Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English					
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>not applicable</i>											
<p>Brief description of the course content: The central theme of Environmental Chemistry is a task about the water quality of the Grevelingenmeer. The Grevelingenmeer is stratified. This causes increased oxygen deprivation in the deeper parts of the stratified lake. Studies are currently being performed to flush water through the Grevelingenmeer now that the Flakkeese Spuisluis has been commissioned. To monitor any future changes, the chemical water quality of the Grevelingenmeer is being mapped out and the focus will be on oxygen, pH, salinity and nutrients. You will also cover drinking water quality and the effects of contaminants during the Environmental Chemistry lessons.</p> <p>Environmental Chemistry is the study of the sources, reactions, transport and effects of chemical substances in the environment. Because the environmental chemistry course is intended in particular for aquatic ecotechnology, the emphasis will be on the quality of the water.</p>											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
2		X		Exam	2.1, 3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	100%	5.5				

CU17717/ CU17720 (Eng.)	Title: Environmental chemistry part 3 Contact hours: 17			Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English					
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>not applicable</i>											
<p>Brief description of the course content: The central theme of Environmental Chemistry is a task about the water quality of the Grevelingenmeer. The Grevelingenmeer is stratified. This causes increased oxygen deprivation in the deeper parts of the stratified lake. Studies are currently being performed to flush water through the Grevelingenmeer now that the Flakkeese Spuisluis has been commissioned. To monitor any future changes, the chemical water quality of the Grevelingenmeer is being mapped out and the focus will be on oxygen, pH, salinity and nutrients. You will also cover drinking water quality and the effects of contaminants during the Environmental Chemistry lessons.</p> <p>Environmental Chemistry is the study of the sources, reactions, transport and effects of chemical substances in the environment. Because the environmental chemistry course is intended in particular for aquatic ecotechnology, the emphasis will be on the quality of the water.</p>											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
4		x		Water quality report	2.1, 3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	100%	5.5				

CU17721 CU17724 (Eng.)		Title: Biodiversity part 1 Contact hours: 11				Number of ECs: 2.5		Mandatory		Teaching language: Dutch / English	
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>not applicable</i>											
Brief description of the course content: Central themes in this course are the rich diversity of life on Earth from past to present and the problems with the preservation of the biodiversity.											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week	
	V	W	O	Form							
1		X		Exam	3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	100%	5.5				

CU17722 CU17725 (Eng.)		Title: Biodiversity part 2 Contact hours: 11				Number of ECs: 2.5		Mandatory		Teaching language: Dutch / English	
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>not applicable</i>											
Brief description of the course content: Central themes in this course are the rich diversity of life on Earth from past to present and the problems with the preservation of the biodiversity.											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week	
	V	W	O	Form							
2		X		Exam	3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	100%	5.5				

CU17723 CU17726 (Eng.)		Title: Biodiversity part 3 Contact hours: 11				Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English		
Conditions of participation: <i>not applicable</i>										
Special condition for awarding study points (tick-box test): <i>not applicable</i>										
Brief description of the course content: Central themes in this course are the rich diversity of life on Earth from past to present and the problems with the preservation of the biodiversity.										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form						
3		X		Biodiversity practical, to be submitted 2 weeks after completing the practical	3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	70%	5.5			
4		X		Tasks in the project week	3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	30%	5.5			

CU03079 CU06387 (Eng.)	Title: Basic mathematics Contact hours: 19,5				Number of ECs: 2.5	Mandatory	Teaching language: Dutch / English				
Conditions of participation: HAVO NG or NT profile, or MBO with equivalent prior knowledge (HAVO maths B1 in free-format study points)											
Special condition for awarding study points (tick-box test): -											
Brief description of the course content: <i>Assessing manipulations with quantitative data. Being able to handle and process formulas. Graphical representation of quantitative items. Interpretation of graphical and mathematical data</i>											
Test no.	Form				Content	Weightin factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection resits in week
	V	W	O	Form							
1		X			<p>Open-ended questions, individual test</p> <p>Learning goals: You know the properties of operations and are able to apply them. You know the properties of powers, roots and logarithms and you are able to apply them.</p> <p>You can use letters in algebraic calculations. You can solve linear equations, simultaneous equations (2 equations with 2 unknowns), second-degree equations and linear inequalities and apply them to simple practical examples. You know what first and second-degree functions are and you can use them in simple practical examples. You know what exponential and logarithmic functions are and you can use them in simple practical examples.</p> <p>(Only for W, CT and EPT) You know the most important terms of plane geometry and are able to apply them to angles, triangles, squares and circles.</p>	100%	5.5				

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					You know the goniometric ratios sine, cosine and tangent and are able to use them to calculate angles and lines in triangles and squares.							
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CU04206	Title: Waterways Contact hours: 19,5			Number of ECs: 2.5	Mandatory	Teaching language: English				
Conditions of participation: -										
Special condition for awarding study points (tick-box test): not applicable										
Brief description of the course content: Level B-1 course preparing for practical professional situations dealing with technical English, targeting three skills (reading, speaking, writing) and paying special attention to grammar, vocabulary and pronunciation										
Test no.	Form (indicate if it is a verbal exam (V), written exam (W) or other (O) and describe the type of exam)			Content (make a connection with subtasks or learning goals (if present), use deepest level from 2.2.2)	Weighting factor	Minimum score	Planned test in week	Inspect of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form						
1		x		Written – reading, writing and vocabulary	<p>Read CanDo's: Student is capable of finding new information and specific details in texts about subjects of general interest or within their own specialist field or field of interest.</p> <p>Write CanDo's: Students can write an understandable summary. Can write a cohesive story. Vocabulary language strategy: distinguish between various types of learning: draw up lists; gain vocabulary through reading and listening; gain vocabulary through writing.</p>	50%	5.5			

2	X		Verbal – presentation	<p>CanDo's - give a presentation: Is able to give a clear explanation of a lot of topics within the student's own specialist field or field of interest and can bring out important points and relevant details properly. The student can give clear and detailed argumentation about topics from their own field of interest or field of activity.</p> <p>Vocabulary language strategy: distinguish between various types of learning: draw up lists; gain vocabulary through reading and listening; gain vocabulary through speaking and writing.</p>	50%	5.5				
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CU13432	Title: <i>Desk research</i> Contact hours: 19,5				Number of ECs: 2.5	Mandatory	Teaching language: Dutch/English				
Conditions of participation: -											
Special condition for awarding study points (tick-box test): 80% attendance.											
<p>Brief description of the course content: After completing the course Desk research you will be able to obtain and process information in reports and articles, according to international standards. This will improve the quality of your products, such as work placement reports and theses, due to the fact that a clear justification of those products contributes to their reliability, exchangeability and reproducibility (LOOWI, 2010).</p> <p>Competency: Conducting research is to pose a question, to find a method to get an answer, to collect and to analyse data, to formulate an answer to the research question and to report all activities and findings to a third party.</p>											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< working day after receipt grade)	Resit planned in week	Inspection resits in week
	M	S	A	Form							
1		X		Research proposal	HZ Research Competences	80%	5.5				
2		X		Assignment file (review)	HZ Research Competences	20%					

Semester 3 phased out, only resits are offered

CU04161 CU08656 (Eng.)		Title: Water system analysis Contact hours: 21			Number of ECs: 7.5	Mandatory	Teaching language: English			
Conditions of participation: <i>not applicable</i>										
Special condition for awarding study points (tick-box test): If students miss out on a guest lecture or excursion, they will be given a replacement task in which an item from the guest lecture or excursion is expanded upon through self-regulated study: a report has to be drawn up of this.										
Brief description of the course content: Water systems are complex systems. Processes in water vary in space and time. In this course, which is part of the 'green approach', you will learn how the behaviour of water, substances and sediment is interconnected. As a future water manager, you will learn to measure the right indicators for specific water systems and how to process the data, but above all how to interpret and analyse this data. You will learn to use the correct instruments for measurements and analyses (including models). The focus of the entire course is on the Schelde Estuary and its entire catchment area from Ghent to the North Sea. The water quality in the areas that discharge into the estuary is also discussed.										
Tes no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O							
1		X		Reporting/general water system analysis report	3.2, 3.3, 3.4	20%	5.5			
2		X		Reporting/riverbeds and lake beds (GIS) report	4.2	15%	5.5			
3		X		Reporting/calibration model (Sobek) report	3.2, 3.3, 3.4	15%	5.5			
4		X		Reporting/water chain management report	3.3, 4.2	15%	5.5			
5		X		Reporting/final detailed analysis report	4.2, 6.2	20%	5.5			
6	x			Presentation, final presentation of detailed analysis	4.2, 6.2	15%	5.5			

CU04143				Title: Research assignment Contact hours: 42				Number of ECs: 7.5	Mandatory	Teaching language: English		
Conditions of participation: <i>The research action plan must be approved before you are allowed to start the execution phase.</i>												
Special condition for awarding study points (tick-box test): <i>The research action plan must be approved before you are allowed to start the execution phase.</i>												
Brief description of the course content: You will often be involved in the execution of water projects in your professional practice. Those projects are often outsourced as tasks. In this course, you will be working on 'true-to-life' tasks in a group. An organisation has a problem and you are asked to solve it. You have to find things out, consult the literature and experts, draw up detailed calculations and occasionally also perform measurements. Of course, the client also wants you to draw up reports on all this correctly.												
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week	
	V	W	O	Form								
1		X		Study portfolio (ind)	1.3, 3.1, 3.2, 3.3, 3.4	80%	5.5					
2	X			Final presentation (ind)	1.3, 3.1, 3.2, 3.3, 3.4	20%	5.5					

CU04144 CU07821 (Eng.)		Title: Rural Water management Contact hours: 2 blokken per week. 1 blok theorie en 1 blok course task				Number of ECs: 7.5		Mandatory		Teaching language: English	
Conditions of participation:											
<i>Special condition for awarding study points (tick-box test): none</i>											
Brief description of the course content: <i>The water systems in rural areas are very complex. The needs of different stakeholders (e.g. farmers, government) and environmental needs have to be satisfied. Consequently, water management tackles with issues such as potential flooding, maintaining certain groundwater and surface water level(s) in the area for agricultural purposes (e.g. GGOR), potential water shortage with droughts. Rural water management course focuses on the objectives and functions of water management systems for drainage purposes. After successful finishing of this course, the student should be able to design an irrigation and drainage system in rural area and analyse systems requirements in terms of technical engineering constraints, management possibilities and water users, based on the acquired knowledge. This knowledge is applied directly in a large project obtained from water board Scheldestromen.</i>											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week	
	V	W	O								Form
1		X		Final test (IND)	4.3, 4.4, 4.5, 5.2	50%	5.5				
2		X		Course task (GROUP)	4.3, 4.4, 4.5, 5.2	50%	5.5				

CU03078		Title: Basic statistics			Number of ECs: 2.5	Mandatory	Teaching language: English			
CU03739		Contact hours: 21								
(Eng.)										
Conditions of participation: <i>Sufficient statistics in the prior education, or successful completion of the statistics transition course.</i>										
Special condition for awarding study points (tick-box test): -										
Brief description of the course content: <i>Descriptive statistics, probability calculations, normal distribution, binomial distribution, estimates with confidence intervals, representation of research results (rounding off estimates) Creating graphs such as histograms, bar charts, pie charts, etc.</i>										
Competencies:										
<i>C1: You know what statistics are for, both within the professional context that is relevant to your programme as well as outside it</i>										
<i>C2: You are capable of applying statistics within the professional context that is relevant to your programme, as well as outside it</i>										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O							
1		X		Open questions, individual test (ind)	Learning goals: (K: knowledge) you are able to state the difference between descriptive and explanatory statistics	70%	5.5			
2		X		Interim tests or additional task during the test stated under 1 (ind)	(K) you are capable of using methods to describe various types of data (K) you are capable of calculating most elementary measures of central tendency (position) and spread (K) you are able to state the methods for collecting various types of data (K) you are able to determine the sample size needed for a required level of confidence and accuracy (K) you can show the importance of representativeness and how the best way to approach representativeness (S: skills) you are capable of calculating	30%	5.5			

AET

					<p>probabilities of events in simple operational situations or elsewhere (K/S) You can indicate what a sample distribution is and you are capable of determining its mean, its standard deviation and the probabilities of events. (S) You are able to determine confidence intervals for fractions and draw operational conclusions based on these intervals (S) You are able to determine reliability intervals for averages and draw operational conclusions, based on these intervals</p>						
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CU11702	Title: <i>Sustainable development</i> Contact hours: 21				Number of ECs: 2.5	Mandatory	Teaching language: English				
Conditions of participation: <i>none</i>											
Special condition for awarding study points (tick-box test): <i>none</i>											
Brief description of the course content: <p><i>Sustainable development is taking place on a global scale. At the same time, this development is having consequences for all the individual countries; this certainly applies to the Netherlands too. It is a radical development that will affect society as a whole deeply. Sustainable development is about the relationship between people and nature, and about aiming for a healthy balance between the interests of people, the economy and the environment. Sustainable development is also about the relationships among people, e.g. the distribution of wealth.</i></p> <p><i>The objective of sustainable development is to gradually create a world in which an increasing percentage of people will be able to live in an acceptable situation, in which they will at least have proper healthcare, food, housing, education, etc. This distribution of wealth and welfare to all parts of the world is one dimension: place, also indicated as 'here' and 'there'. At the same time, sustainable development aims to set up the world in such a way that all these wishes for wealth and welfare will be met sustainably, or in other words: permanently. This wish, for a society that will continue to exist into the distant future, is the other dimension: time, or 'now' and 'later'.</i></p> <p><i>Sustainable development is a highly complex process. It is certain that it will take decades or more before major improvements have really been achieved, so the time dimension stretches far into the future. Major improvements such as this are only possible when radical transitions are implemented. Sustainable development involves all kinds of things in the world. A good way to get a picture of all those things is the 'triple P' triangle: people, planet and profit. Rather than the last of these terms, the broader concept of 'prosperity' is also sometimes used.</i></p>											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< working da after receipt grade)	Resit plan in week	Inspection resits in week
	V	W	O	Form							
1		X	X	Report, presentation & assignments (jnd)	3.1, 3.2	50%	5.5				
2	X			Final test (ind)	3.1, 3.2	50%	5.5				

CU15330 CU15331 (Eng.)		Title: <i>Combination Research Qualitative / Quantitative research</i> Contact hours: 21				Number of ECs: 2.5		Mandatory		Teaching language: English	
Conditions of participation: The course aligns with Research 1 Desk research											
Special condition for awarding study points (tick-box test): <i>Attendance 80%</i>											
Brief description of the course content: The full cycle of research forms part of this course. Different types of qualitative and quantitative research will be discussed and executed by the students											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< working day after receiving grade)	Resit planned in week	Inspection resits in week	
	V	W	O								
1		X		Dossier (research proposal) (ind)	3.1	100	5.5				

Semester 4 phased out, only resits are offered											
CU04162 CU08657 (Eng.)		Title: Ecological engineering Contact hours: 79				Number of ECs: 7.5		Mandatory		Teaching language: English	
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>Participation in all excursions within the framework of this course are mandatory; Your portfolio must be sufficient before your study points are awarded.</i>											
Brief description of the course content: Ecological Engineering means designing, constructing, and managing sustainable ecosystems: integrating society with the natural environment to the benefit of both. Ecological Engineering covers multiple specialist fields, which is why you will be working with other disciplines in practice (depending on your project). You may work with a biologist, for instance, or a purification engineer, a planner and/or a hydrologist for a recovery project for swamp woodland, which stores and purifies water, and where numerous plant and animal species feel at home. You use your knowledge of ecological engineering to try to find possibilities that ensure that an area has more than just a single function.											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week	
	V	W	O	Form							
1		x		Final test, ecological engineering (ind)	2.2, 4.2, 4.3, 4.4, 4.5, 4.6	100%	5.5				

CU08655	Title: Aquatic Ecology Contact hours: 104 hour				Number of ECs: 7.5	Mandatory	Teaching language: English				
Conditions of participation: <i>not applicable</i>											
Special condition for awarding study points (tick-box test): <i>not applicable</i>											
Brief description of the course content: The aquatic ecology course provides insights into how aquatic systems work - from ditches to fast-flowing rivers. It deals with how organisms respond to each other, both underwater and on the banks, and to changes in the surroundings. Processes and structures at the levels of individuals, populations, communities and ecosystems are all studied. How can humans control the functioning of the aquatic system? Computer models make it possible to estimate the effects of measures taken; but your role as an aquatic ecologist means you give the final assessment of the practical feasibility.											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
1		X		mid-term exam (IND)	2.1, 3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	35%	5.5				
2		X		final exam (IND)	2.1, 3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	35%	5.5				
3		X		field week (GROUP, peer review)	2.1, 3.1, 3.2, 3.3, 3.4, 4.6, 5.1, 5.2, 6.1, 6.2,	15%	5.5				
4		x		simulation practicals (GROUP, peer review)	3.1, 3.2, 3.3, 3.4, 4.1, 4.2	15%	5.5				

CU08654	Title: Water Treatment Contact hours: 20 timeslots theory, 2 timeslots exams, 2 timeslots resits, 5 practicals of 6 hours of 45 minutes	Number of ECs: 7.5	Mandatory	Teaching language: English
Conditions of participation: <i>not applicable</i>				
Special condition for awarding study points (tick-box test): <i>not applicable</i>				
<p>Brief description of the course content: As a graduate aquatic ecotechnology you will be qualified to work as an advisor, researcher, technical assistant and project engineer in the field of water quality and water treatment. Water treatment is applied in drinking-water purification, treatment of wastewater from households and industry. Drinking-water purification and a good wastewater treatment are a matter of high importance to human health and environment. The interest in water treatment is increasing world-wide, even in non-western countries in Africa, Asia and South America.</p> <p>Drinking-water purification plants (DPP's) and waste water treatment plants (WWTP's) fall under the responsibility of private drinking-water companies or water boards. Many industrial companies, like Shell, Dow Chemical and Unilever have their own WWTP.</p> <p>Your tasks consist of coordinating and carrying out research on the performance of water treatment or a part of the treatment process. The field of water treatment is advancing quickly. You will be working on innovative technologies like ultrafiltration, wastewater treatment with the help of microalgae, ultrasound as a separation technique, the purification of wastewater of hospitals containing residues of medicine. You are looking for alternative solutions, which will contribute to a new design.</p> <p>During the course, you will do theoretical and practical work regarding the water quality of wastewater from households and industry. You will do research on the effects of discharge of wastewater on the surface water. You have to know the design requirements for a WWTP. You will make calculations on treatment processes by means of mass balances. Furthermore, you will analyze the treatment processes, like the degradation of organic matter, the conversion of nitrogen compounds and sludge growth. You will do research on the performance of wastewater treatment, give advice to adjust or improve available innovative technologies and draw up design criteria for an existing or new WWTP.</p>				

Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O							
1		X		mid-term exam: Wastewater and its effects (IND)	4.2, 4.4	30%	5.5			
2		X		final exam: Water treatment (IND)	4.1, 4.2, 4.3, 4.4, 4.5, 4.6	35%	5.5			
3		X		Practical: Water treatment (GROUP)	3.1, 3.2, 3.3, 3.4	15%	5.5			
4		X		Group assignment: Water treatment (GROUP)	3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6	20%	5.5			

CU03130		Title: Statistical applications			Number of ECs: 2.5		Mandatory		Teaching language:		
CU04905		Contact hours: 21							English		
(Eng.)											
Conditions of participation: CU03078 Basic statistics											
Special condition for awarding study points (tick-box test): -											
Brief description of the course content: In this course, a number of statistical tests will be discussed. The student will learn how to use statistical computer software (SPSS), perform various tests and analyse the output.											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 1 working day after receiving grade)	Resit planned in week	Inspection resits in week	
	V	W	O								
1		X		<p>Open-ended questions, Individual exam (ind)</p> <p>You are able to interpret the SPSS output. You are able to enter data in SPSS. You are able to perform various tests using SPSS and draw conclusions from your data. You are capable of using random sample information.</p> <p>You are able to use a test to determine two population averages and you are able to perform the tests for independent random sampling and the comparison of two alternatives.</p> <p>You are capable of comparing two populations fractions for independent random sampling</p> <p>You are able to determine a reliable and</p>	100%	5.5					

					<p>accurate sample size of two random samples.</p> <p>You know how to use a linear regression model and are able to determine a regression model by using the quadrant method.</p> <p>You know the following terms and you know how to use them:</p> <p>Correlation coefficient r</p> <p>Determination coefficient r^2</p> <p>One factor ANOVA model</p> <p>The chi-square test</p> <p>Two-way ANOVA</p> <p>Introduction to SPSS and generate output.</p>						
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CU04585		Title: <i>Obtaining a suitable work placement</i> Contact hours: 21			Number of ECs: 2.5	Mandatory	Teaching language: English			
Conditions of participation: -										
Special condition for awarding study points (tick-box test): 80% attendance										
Brief description of the course content: Intended for those who will be doing a work placement and are looking for a suitable position. The search process consists of 3 steps. Step 1: you take a good look at yourself and the labour market and discover what you can offer a company and what a company will want from you. Step 2: you obtain a work placement plus project by submitting applications. Step 3: you prepare for the work placement. You determine what you will be doing, what competencies you will work at and what your individual learning goals are. You draw up a work placement plan describing as accurately as possible what you will be doing, and a personal development plan (PDP) describing as accurately as possible what you will be learning.										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< working days after receiving grade)	Resit planned in week	Inspection resits in week
	V	W	O							
1		X		Reporting, Individual reflection dossier (ind)	100%	5.5				

CU04207		Title: Watercourse Contact hours: 21			Number of ECs: 2.5	Mandatory	Teaching language: English				
Conditions of participation: -											
Special condition for awarding study points (tick-box test): not applicable											
Brief description of the course content: Level B-2 course preparing for practical professional situations dealing with technical English, targeting three skills (reading, speaking, writing) and paying special attention to grammar, vocabulary and pronunciation											
Test no.	Format				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
1		x		Written – reading, writing and vocabulary (ind)	<p>Read CanDo's: Student is capable of finding new information and specific details in texts about subjects of general interest or within their own specialist field or field of interest..</p> <p>Write CanDo's: Students can write an understandable summary. Can write a cohesive story. Vocabulary language strategy: distinguish between various types of learning: draw up lists; gain vocabulary through reading and listening; gain vocabulary through writing.</p>	50%	5.5				
2	X			Verbal – presentation	<p>CanDo's - give a presentation: Is able to give a clear explanation of a lot of topics within the student's own specialist field or field of interest and can bring out important points and relevant details properly The student can give clear and detailed argumentation about topics from their own field of interest or field of activity.</p> <p>Vocabulary language strategy: distinguish between various types of learning: draw up lists; gain vocabulary through reading and listening; gain vocabulary through speaking and writing.</p>	50%	5.5				

Semester 5 or 6												
CU11022		Title: Orienting work placement / internship Contact hours: 3					Number of ECs: 30		Mandatory		Teaching language: Dutch / English	
Conditions of participation: See article 2.2.8 in this document for the rules of admission to the internship.												
Special condition for awarding study points (tick-box test): not applicable												
Brief description of the course content: Whether you go abroad or stay in the Netherlands, you always have to deal with real practical assignments as part of your work placement. And these are very different from most of the study assignments, however context-rich they sometimes may be. Your work placement gives you a real look at how things go in practice! You will be given assignments that you have to carry out for (or at) an organisation; they will fit in with your choice of study, require you to make clear why you have or not done things, and yield a final product (often combined with a final report).												
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resit in week	
	V	W	O	Form								
1	x	x		Completion phase portfolio (Ind)	1.1, 1.2, 1.3, 1.4	100%	5.5					
				Internship in S1 of academic year								
				Internship in S2 of academic year								

Semester 5 or 6												
CU19266 CU19267	Title: Minor Water Safety & Spatial Planning – Research & Innovation Contact hours: Two to three contact moments per week. Duration and nature vary						Number of ECs: 30 / 15	elective		Teaching language: Dutch/English		
Conditions of participation: See article 2.2.9 in this document for the rules of admission to the minor.												
Special condition for awarding study points (tick-box test):												
Brief description of the course content: The research minor involves carrying out applied research (also known as Mode 2 research) in the field of delta technology. The research group Safety and Spatial Planning of the Delta Academy has its focus on the development of Resilient Deltas. Resilience is the capacity of a social system (e.g. an organization, city, or society) to proactively adapt to and recover from disturbances that are perceived within the system to fail outside the range of normal and expected disturbances. In the resilience programme the research group focuses on four levers which contribute to the resilience of communities in Deltas: Social capital, land use, vital infrastructure and economic drivers. The aim of the research is to develop instruments to reduce vulnerability of the Deltas and to improve adaptability of the Delta communities. The focus of these instruments is not only to enhance the ability of communities to cope with crises situations, but also to contribute to the vitality of Delta communities in everyday life.												
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit plan in week	Inspection of resits in week	
	V	W	O	Form								
CU19266 Water Safety & Spatial Planning – Research & Innovation (30 EC)												
1			X	Professional development	various	25%	5.5					
2			X	Research products	Research proposal, report and presentation	75%	5.5					
CU19267 Water Safety & Spatial Planning – Research & Innovation (15 EC)												
1			X	Professional development	various	25%	5,5					
2			X	Research products	Research proposal, report and presentation	75%	5,5					
				Minor in S1 of academic year								
				Minor in S2 of academic year								

CU19268 CU19269	Title: Minor Building with Nature– Research & Innovation Contact hours: Two to three contact moments per week. Duration and nature vary				Number of ECs: 30 / 15	elective	Teaching language: Dutch/English				
Conditions of participation: See article 2.2.9 in this document for the rules of admission to the minor.											
Special condition for awarding study points (tick-box test):											
Brief description of the course content: The research minor involves carrying out applied research (also known as Mode 2 research) in the field of delta technology. As a result of changes in societal demand and technical developments, water management and engineering are moving from hard traditional structures like dikes and dams, to designs in which natural structures and processes are incorporated. One of the underlying factors in this development is the increasing awareness of the impacts of climate change and its effect on water levels and extreme events. Furthermore, water managers are expected to create more safety, opportunities for recreation, and other benefits, with increasingly smaller budgets. This requires infrastructure that combines multiple functions. In our research group we work on application of the Building with Nature concept. 'Building with Nature' focusses on solutions that use abiotic forces of nature (e.g. wind and currents that transport sand) and ecosystem services delivered by organisms (e.g. reefs and vegetation that catch and stabilize sand). The research group also focusses on Building for Nature: creating additional nature values in and on mono functional structures such as dikes.											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
CU19268 Building with Nature– Research & Innovation (30 EC)											
1			X	Professional development	various	25%	5.5				
2			X	Research products	Research proposal, rapport and presentation	75%	5.5				
CU19269 Building with Nature– Research & Innovation (15 EC)											
1			X	Professional development	various	25%	5,5				
2			X	Research products	Research proposal, rapport and presentation	75%	5,5				
				Minor in S1 of academic year							
				Minor in S2 of academic year							

CU19270 CU19271	Title: Minor Water Technology– Research & Innovation Contact hours: Two to three contact moments per week. Duration and nature vary				Number of ECs: 30 / 15	elective	Teaching language: Dutch/English				
Conditions of participation: See article 2.2.9 in this document for the rules of admission to the minor.											
Special condition for awarding study points (tick-box test):											
Brief description of the course content: The research minor involves carrying out applied research (also known as Mode 2 research) in the field of delta technology. The research group water technology aims at development of applicable technologies for sustainable water (re)use in a combined fresh/saline delta. Current research three fields can be distinguished. One is recycling of surface and process water for industry, agriculture and aquaculture. Examples are reuse of cooling tower water, rainwater runoff and industrial wastewater. Another field is focused on recovery of valuable content in waste water. Examples are acoustic particle filtering and nutrient recovery. The last field is monitoring and control. Examples are monitoring and control of water filtration systems and control of biofouling in water systems with ultrasound.											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
CU19270 Water Technology– Research & Innovation (30 EC)											
1			X	Professional development	various	25%	5.5				
2			X	Research products	Research proposal, rapport and presentation	75%	5.5				
CU19271 Water Technology– Research & Innovation (15 EC)											
1			X	Professional development	various	25%	5,5				
2			X	Research products	Research proposal, rapport and presentation	75%	5,5				
				Minor in S1 of academic year							
				Minor in S2 of academic year							

CU19272 CU19273	Title: Minor Aquaculture in Delta Areas Contact hours: Two to three contact moments per week. Duration and nature vary				Number of ECs: 30 / 15	elective	Teaching language: Dutch/English				
Conditions of participation: See article 2.2.9 in this document for the rules of admission to the minor.											
Special condition for awarding study points (tick-box test):											
Brief description of the course content: The research minor involves carrying out applied research (also known as Mode 2 research) in the field of delta technology. The research group Aquaculture in Delta Areas of the Delta Academy has its focus on sustainable saline aquaculture in and outside the region Zeeland. Aquaculture is the controlled production of saline crops, algae, seaweed, ragworms, shellfish and fish. Cultivation of these organisms can take place in several (intensive and extensive) ways. The research group Aquaculture has built up an extensive network of Small and Medium Enterprises (SME), consultancies and knowledge institutes involved in aquaculture in and outside the Netherlands. The main research topics are; Integrated Multi Trophic Aquaculture (IMTA), new species to the Dutch situation (such as lobster and abalone), improvement of cultivation environments, groundwater suitability, quality aspects in shellfish cultivation and algae cultivation. The research group Aquaculture uses a full-fledged research facility SEA Lab, in which many applied research (experiments) are carried out.											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
CU19272 Aquaculture– Research & Innovation (30 EC)											
1			X	Professional development	various	25%	5.5				
2			X	Research products	Research proposal, rapport and presentation	75%	5.5				
CU19273 Aquaculture– Research & Innovation (15 EC)											
1			X	Professional development	various	25%	5,5				
2			X	Research products	Research proposal, rapport and presentation	75%	5,5				
				Minor in S1 of academic year							
				Minor in S2 of academic year							

CU16455		Title: Elective Minor, see HZ minor catalog or www.kiesopmaat.nl Contact hours: -				Number of ECs: 15 / 30		elective		Teaching language:	
Conditions of participation: <i>See article 2.2.9 in this document for the rules of admission to the minor.</i>											
Special condition for awarding study points (tick-box test):											
Brief description of the course content: Minor outside of HZ University of Applied Sciences											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week	
	V	W	O								Form
				Minor in S1 of academic year			Wk 3	Wk7	Wk15	Wk20	
				Minor in S2 of academic year			Wk 25	Wk 26	Wk 27	Wk 28	

Semester 7											
CU05026		Title: River Basin Management Contact hours: 79				Number of ECs: 7.5		Mandatory		Teaching language: ENG	
Conditions of participation: <ul style="list-style-type: none"> • Propedeutic exam passed • At least 120 EC obtained (including provisional credits) • Internship OR Minor passed 											
Special condition for awarding study points (tick-box test):											
Brief description of the course content: River Basin Management deals with the management of international catchment areas and sub-areas, in accordance with the European Water Guideline Framework. Managers use scenario methods to create a long-term vision and a development outline for a (cross-border) catchment area. To do this, they have to draw up an analysis of the water system, water consumption and the interests. The vision for the future sustainable situation must be created by getting the interest groups involved in the process, before the objectives are made more concrete. A field study week abroad will be held as part of the RBM course.											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week	
	V	W	O	Form							
1	X			Monitoring plan + factsheets + presentation: Field Study Week (ind)	4.6, 5.1, 5.2, 6.1, 6.2,	33%	5.5				
2		X		Paper: RBM Vision, Strategy and Stakeholders (ind)	1.2, 2.1, 2.2	67%	5.5				

CU04778	Title: Urban water management Contact hours: 2 blokken per week 1 blok theorie en 1 blok course task				Number of ECs: 7.5	Elective	Teaching language: ENG			
Conditions of participation: <ul style="list-style-type: none"> The course will only be given if there are sufficient applications for it. <i>Propedeutic exam passed</i> <i>At least 120 EC obtained (including provisional credits)</i> <i>Internship OR Minor passed</i> 										
Special condition for awarding study points (tick-box test): <i>not applicable</i>										
Brief description of the course content: <i>Water has always had an important place in the overall image of the city. No town or city can function without water. Appropriate, sustainable water management in urban areas will contribute to the well-being of the people living there, of the ecology of our planet, and of the economical profit. The aim of urban water management is to create cities and towns that are resilient, liveable, productive and sustainable. After successful finishing of this course, you should be able to provide a design and water wise spatial planning solutions for the urban area, based on the acquired knowledge i.e. water flux and relevant processes in water and soil, urban water management plans and solutions. Further, after successful finishing of this course, you should be able to design an urban drainage system for the collection and transport of wastewater and rainwater and analyse performance of the system under diverse hydrological and system conditions using a hydrodynamic computer model. This knowledge is applied directly in a large project obtained from The Municipality of Vlissingen. Moreover, during the course you will have external supervision from the professional field.</i>										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form						
1		X		Final exam (ind)	1.3, 4.5	30%	5.5			
2	X	X		Project (report and presentation) (ind)	2.1, 2,2	70%	5.5			

CU05065		Title: Ecological Risk Assessment Contact hours: 14 timeslots ecotoxicology theory, 4 practicals ecotoxicology of 3 hours of 45 min (in 2 groups), five timeslots and two 1.5 timeslots and one 0.5 timeslot theory ecorisk assessment (MER)			Number of ECs: 7.5	Elective	Teaching language: ENG			
Conditions of participation: <ul style="list-style-type: none"> • The course will only be given if there are sufficient applications for it. • <i>Propedeutic exam passed</i> • <i>At least 120 EC obtained (including provisional credits)</i> • <i>Internship</i> • • • <i>OR Minor passed</i> 										
Special condition for awarding study points (tick-box test): <i>not applicable</i>										
Brief description of the course content: During the course, you will make an ecological risk assessment on a project that is being carried out or planned and can have an environmental impact. Examples of these projects are dumping of polluted dredging sludge or the use of LD steel slag as substrate for dikes. For this, practical laboratory skills and theoretical knowledge about ecotoxicology is necessary in order to analyze and predict adverse effects of pollution on the aquatic environment. Effects will be studied at different levels, in particular from the level of molecules to the level of ecosystems. In order to come up with a well-founded conclusion on ecotoxicological effects, you need knowledge on the behavior of chemical substances in the abiotic and biotic environment. The biotic environment can be studied at the level of the cell, tissue, organism, population, community or ecosystem. For the ecological risk assessment you are going to make, you will put all relevant data in a broader perspective while taking environmental policy into account.										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O							
1		X		mid-term exam: Ecotoxicology (ind)	35%	5.5				
2		X		Practical: Ecotoxicology (ind)	30%	5.5				
3		x		Report: Environmental Impact Assessment (ind)	35%	5.5				

CU17614	Title: Dredging & ecology Contact hours: 42			Number of ECs: 7.5	Elective	Teaching language: English				
Conditions of participation:										
<ul style="list-style-type: none"> The course will only be given if there are sufficient applications for it. <i>Propedeutic exam passed</i> <i>At least 120 EC obtained (including provisional credits)</i> <i>Internship OR Minor passed</i> 										
Special condition for awarding study points (tick-box test):										
Brief description of the course content:										
<p>You are working as a foreman for a dredging company in hydraulic engineering. You are accountable to the project manager and manage the crew of the ship that actually carries out the dredging project. You hold discussions with the captain of a dredger about matters associated with production, whether there have been delays and why. You also discuss the latest depth charts and help lead the execution method as necessary. You pass on the requirements of the client and project manager. Your practical tasks are very diverse: organising dredging, investigating and presenting alternative execution methods to the project management in the preparatory phase, monitoring the planning and coordinating the work of subcontractors, and - occasionally - improvising.</p> <p>In the hydraulic engineering sector, a civil engineer such as you may have to work on structures such as breakwaters, be involved in the construction of a harbour, in deepening channels or in channel maintenance. Discussions with the client have to be held, as well as with the crews of the vessels involved, so it is very important to have a good overview of the various aspects of dredging. Attention is paid not only to maritime dredging but also to work behind the dykes, to ecological aspects, environmental dredging and cloudiness of the water. Finally, the various functions and designs of coastal and shore/bank constructions and their execution are dealt with.</p>										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form						
1		X		Final exam (ind)	4.1, 4.2, 4.3, 4.4, 4.5, 4.6	50%	5.5			
2	X	X		Project (group)	4.1, 4.2, 4.3, 4.4, 4.5, 4.6	50%	5.5			

CU04619		Title: Aquaculture Contact hours: 66 hours			Number of ECs: 7.5		Elective		Teaching language: English		
Conditions of participation:											
<ul style="list-style-type: none"> The course will only be given if there are sufficient applications for it. <i>Propedeutic exam passed</i> <i>At least 120 EC obtained (including provisional credits)</i> <i>Internship OR Minor passed</i> 											
Special condition for awarding study points (tick-box test): <i>not applicable</i>											
Brief description of the course content: This introductory course to aquaculture is a non-compulsory course, in which the focus will primarily be on the cultivation of saltwater organisms. More and more shellfish and fish, crops like samphire, and also for instance ragworms are being cultivated under controlled circumstances. The large amount of input from experts of the sector (guest lectures and excursions) in this course and the various case studies mean you will get a good impression of all the different aspects of aquaculture. You will learn about the biology of the organisms, the technical aspects of culturing (reproduction), the cultivation systems, sustainability of aquaculture, the legislation, animal welfare, health management and economic aspects.											
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week	
	V	W	O								Form
1		x		Final exam (IND)	1.4, 4.1, 4.2, 4.3, 4.4, 4.5	30%	5.5				
2		x		Introductory case study (GROUP)	1.4, 4.1, 4.2, 4.3, 4.4, 4.5	20%	5.5				
3		x		Business plan (GROUP)	1.4, 4.1, 4.2, 4.3, 4.4, 4.5	50%	5.5				

CU15062				Title: <i>Integrated Coastal Zone Management</i> Contact hours: 42		Number of ECs: 7.5		Elective		Teaching language: English	
Conditions of participation:											
<ul style="list-style-type: none"> • The course will only be given if there are sufficient applications for it. • <i>Propedeutic exam passed</i> • <i>At least 120 EC obtained (including provisional credits)</i> • <i>Internship OR Minor passed</i> 											
Special condition for awarding study points (tick-box test): none											
Brief description of the course content:											
The first part of the course gives theory and background lessons on the concept of Integrated Coastal Zone Management, coastal management issues and major coastal management and planning techniques. The second part of the course gives practical examples of innovative adaptive coastal measures like building with nature, flood-proof architecture, energetic coasts and floating vegetable bed cultivation.											
Test no.	Form (verbal (V), written (W) or other exam (O))			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of re	
	V	W	O								Form
1		x		Midterm exam (ind)	1.2, 1.3, 2.2,	25%	5.5				
2		x		Final exam (ind)	3.3	25%	5.5				
3		x		Rebuild by design competition	3.3	10%	5.5				
4	x			Assignment Belgian coast	3.3	5%	5.5				
5		x		Assignment Belgian coast	3.3	35%	5.5				

CU13718		Title: <i>Research 4 Independently conducting research</i> Contact hours: 21			Number of ECs: 2.5	Mandatory	Teaching language: Dutch/English				
Conditions of participation:											
<ul style="list-style-type: none"> • <i>Propedeutic exam passed</i> • <i>At least 120 EC obtained (including provisional credits)</i> • <i>Internship OR Minor passed</i> 											
Special condition for awarding study points (tick-box test): <i>Attendance 80%</i>											
Brief description of the course content: The focus of this course is on independently setting up a research project plan. The student is free to choose a qualitative or quantitative accent for his/her project plan.											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< working days after receiving grade)	Resit planned in week	Inspection resits in week
	V	W	O	Form							
1		X		Research proposal (ind)	HZ Research Competences (research plan)	100%	5.5				

CU06281	Title: <i>free Composition space: Delta Academy registration card</i> Contact hours:			Number of ECs: 2.5	Mandatory	Teaching language: Dutch					
Conditions of participation: none											
Special condition for awarding study points (tick-box test): none											
Brief description of the course content: <p>Students can fill this space by various activities scoring 1.25 or 2.5 credits; these activities have been defined by HZ. Students can also propose activities themselves, which have to be submitted to the examinations committee for approval before doing the activities. The Delta Academy points card is one of the possibilities for filling in 2.5 EC (70 study hours) in the free-format study part. Activities that have been organised for or by the programme can be included on the points card as study hours, where this has been indicated or agreed beforehand. This may include:</p> <ul style="list-style-type: none"> • attending guest lectures • participation in the programme committee • participation in the quality control group • administrative activities for the civil engineering society • helping with open days for the programme (note: if you want the hours to be included on your points card, you cannot be paid as well) • participation in programme-related excursions • visiting programme-related trade fairs <p>The following applies to all activities: the activity must have been signed off within two weeks after it being done by the lecturer involved in its execution, otherwise the right to include these hours on your points card will lapse. When you have completed your points card (70 hours), you can register the hours with the programme coordinator for the civil engineering programme. For more information, see</p> <ul style="list-style-type: none"> • Dutch: http://hz.nl/Documents/Regelingen/OERs/Handleiding-VCC-compleet-Valk-en-Glabbeek.pdf • English: http://hz.nl/Documents/Regelingen/Overige%20regelingen/English%20-%202014%2009%2008%20Handleiding%20VCC%20compleet%20Valk%20en%20Glabbeek%20docx_E.pdf 											
Test no.	Form				Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< working day after receipt grade)	Resit planned in week	Inspection resits in week
	V	W	O	Form							
1			X	Report: Points card		100 %	5.5	Registration takes place when the points card is submitted			

CU06282		Title: <i>free Composition space: Delta Academy registration card</i>			Number of ECs: 2.5	Mandatory	Teaching language: Dutch			
		Contact hours:								
Conditions of participation: none										
Special condition for awarding study points (tick-box test): none										
Brief description of the course content:										
<p>Students can fill this space by various activities scoring 1.25 or 2.5 credits; these activities have been defined by HZ.</p> <p>Students can also propose activities themselves, which have to be submitted to the examinations committee for approval before doing the activities.</p> <p>The Delta Academy points card is one of the possibilities for filling in 2.5 EC (70 study hours) in the free-format study part.</p> <p>Activities that have been organised for or by the programme can be included on the points card as study hours, where this has been indicated or agreed beforehand. This may include:</p> <ul style="list-style-type: none"> • attending guest lectures • participation in the programme committee • participation in the quality control group • administrative activities for the civil engineering society • helping with open days for the programme (note: if you want the hours to be included on your points card, you cannot be paid as well) • participation in programme-related excursions • visiting programme-related trade fairs <p>The following applies to all activities: the activity must have been signed off within two weeks after it being done by the lecturer involved in its execution, otherwise the right to include these hours on your points card will lapse. When you have completed your points card (70 hours), you can register the hours with the programme coordinator for the civil engineering programme. For more information, see</p> <ul style="list-style-type: none"> • Dutch: http://hz.nl/Documents/Regelingen/OERs/Handleiding-VCC-compleet-Valk-en-Glabbeek.pdf • English: http://hz.nl/Documents/Regelingen/Overige%20regelingen/English%20-%202014%2009%2008%20Handleiding%20VCC%20compleet%20Valk%20en%20Glabbeek%20docx_E.pdf 										
Test no.	Form			Content	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form						
1			X	Report: Points card	100%	5.5	Registration takes place when the points card is submitted			

Semester 8											
CU011020	Title: <i>Delta Academy final thesis</i> Contact hours:				Number of ECs: 30	Mandatory	Teaching language: English				
<p>Conditions of participation: In order to participate in the Aquatic Eco technology programme graduation phase, students must:</p> <ul style="list-style-type: none"> • have obtained at least 175 EC from the propaedeutic phase and main phase when starting the graduation study period. • have obtained 210 study points from the propaedeutic phase and main phase, before the graduation study report is submitted for assessment, as defined in the course programme. • carry out the graduation project at a company, body or department within the Aquatic Eco technology field of expertise. 											
Special condition for awarding study points (tick-box test):											
Brief description of the course content: Conducting research: investigate a complex practical project in a complex situation independently and choose between relevant methods from Water management professional practice.											
Test no.	Form				Content)	Weighting factor	Minimum score	Planned test in week	Inspection of work (< 10 working days after receiving grade)	Resit planned in week	Inspection of resits in week
	V	W	O	Form							
1	X	X		Portfolio / professional competences (ind)	1,1, 1.4, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.6	50%	5.5				
2	X	X		Graduation report and presentation (ind)	HZ research competences	50%	5.5				