Implementation Regulations CER HZ

Bachelor

Water Management

Full-time

CROHO 34074

2022-2023

UNIVERSITY OF APPLIED SCIENCES

INDEX

SUMMARY OF CHANGES

This is the Implementation Regulation 2022-2023 of the Water Management study programme (Croho 34074). The Water Management (WM) programme consists of three study tracks: Aquatic Eco Technology (AET), Delta Management (DM) and Spatial Planning and Design (SPD). The first six months WM students follow a joint programme and after that they choose one of these three study tracks. Spatial Planning and Design (SPD) is newly developed and started in 2020-2021, therefore only a first, second and third year programme are offered. The fourth year is under construction and will be available next year. Just like the other study tracks the main phase of SPD consists of 180 EC.

With the introduction of Spatial Planning & Design the coverage matrix was redesigned. In 2020-2021 the new national set of competences, subtasks and learning goals was introduced in all courses that were newly developed or changed, that is: all courses of year 1, the Integrated Coastal Challenge (ICC) and the Final Thesis of year 4. Last study year all courses in year 2 were adjusted to the new structure and the study track SPD was developed for year 2. Furthermore, the types of assessment of the courses of year 1 and 2, the ICC and Final Thesis were adjusted to the HZ Assessment policy. This year 2022-2023 year 3 is adjusted for all programmes and we made some changes in year 1 and 2, based on evaluations of students and lecturers.

The most significant changes per study year are explained hereafter.

Year 1
With the addition of Spatial Planning & Design as a third study track next to Aquatic Eco Technology and Delta Management, the complete Water Management study programme was reviewed which resulted in a new first year in 2020-2021. To enhance the quality of education and the coherence between the programmes of the three tracks, the coverage matrix was redesigned. The first half year a joint programme was offered and after the 1st semester students made their choice for a study track. The changes in the way modules were organized as well as changes in the content and testing have been regularly and positively evaluated by both students and lecturers during the year.

Some adaptations were implemented to further improve in 2021-2022. For one: using both on campus and online teaching in some courses. This as a result from our Blended Learning approach which was implemented under Covid-19 rules. In this study year 2022-2023 one other improvement has been made: the course Marine Water Systems Analysis in module 3 is offered to all study tracks, instead of to AET only, because it contains fundamental general knowledge about water systems, important to Water Managers of all three study tracks. At the same time it is an opportunity for more integration, connection and efficiency within the programme. As a result the course Social Geography has been dropped, because the subjects are covered in other courses.

Year 2
In module 5 and 6 of Delta Management and Spatial Planning and Design changes have been made based upon evaluations with students and lecturers. The emphasis on the project has been increased in order to better link theory to practice. In module 5 research is linked more to the project and in module 6 the project is linked to applied hydrology. Furthermore, statistics used to be spread across module 5 and 6, but now it is concentrated

in module 5 in the course Data Analysis together with AET. This course was new for AET last year and has been evaluated very positively. So it is a quality improvement and an efficiency gain at the same time.

Year 3
Year 3 consists of the Minor and Internship. The new competences are applied to those courses in this study year and the coverage matrix is adjusted. Furthermore the process in OnStage is reviewed and improved, as is the Internship Manual.

Year 4
No major changes have been made to the courses in year 4. There is focus on optimization of the course Integrated Coastal Challenge that is organized together with Civil Engineering, based on evaluation with students and lecturers.

CHAPTER 1 GENERAL PROVISIONS

1.1 General

1.1.1 The HZ Course and Examination Regulations Bachelor programme full-time (hereinafter: HZ CER ba ft) cover the core of education within the HZ. This document provides a general overview of all programmes taught at the HZ. The HZ CER Ba ft contains institution-specific provisions, i.e. those that apply to the entire HZ. A programme-specific HZ CER Implementation Regulation (hereinafter: Implementation Regulation) is determined for each programme by the executive board each year.

1.1.2 The HZ Course and Examination Regulations Bachelor programme full-time applies to this HZ CER Implementation Regulation Bachelor programme full-time.

1.1.3 The Dutch Higher Education and Research Act (WHW) as well as the HZ CER ba ft mention study credits. These Implementation Regulations, in addition to the term credits, also refer to ECTS (European Credits Transfer System), where 1 ECTS is equal to 1 credit and thus a study load of 28 hours (article 7.4 paragraph 1 of WHW).

1.2 Establishment and evaluation

1.2.1 The process of establishment and evaluation of this Implementation Regulation is described in article 1.3.4 CER HZ ba ft.

1.2.2 The programme committee evaluates the manner of implementation of the education and examination regulations and the Implementation Regulations in question every year (article 1.3.4 CER HZ ba ft).

CHAPTER 2 IMPLEMENTATION REGULATIONS HZ CER

2.1 Registration, prior educational requirements, and admission policy

2.1.1 Overview of additional prior educational requirements (article 2.3 HZ CER Ba ft in addition to the requirements as listed under article 2.2 and 2.2a and 2.2b of HZ CER Ba ft)

Students with a havo diploma				
Havo profiles:	**NT**	**NG**	**EM**	**CM**
Admissible:	*yes*	*yes*	*yes*	*no*

Students with a vwo diploma				
Vwo profiles:	**NT**	**NG**	**EM**	**CM**
Admissible:	*yes*	*yes*	*yes*	*no*

Students with a MBO level 4 diploma have right to access with all profiles.

2.1.1a Selection criteria Special programme (article 2.2b HZ CER ba ft)
Not applicable.

2.1.1b Enrolment 180 ECTS track for VWO students (article 2.2a CER HZ Ba ft)

For AET and DM students a three year 180 EC programme is offered; for SPD there is no 180 EC programme, because the drawing and design skills that are required and trained throughout the four years of education are not part of the VWO curriculum and need the full practice and training hours to be developed.

Students that wish to follow the 180 EC programme start in the second year of the 240 EC programme and therefore make their choice for a study track (AET or DM) before they start their studies. A SKC (Study Keuze Check/ Study Choice Check) meeting is required before admission to the 180 EC program to check motivation, requirements and advice on the choice for one of the two study routes.

Anyone who wishes to be admitted to the 180 EC programme must comply with one of the following educational entry requirements:

a. a pre-university education diploma (Dutch: VWO), with the following additional requirements:

- AET: VWO students are admissible to the 180 EC programme only when their curriculum covers Mathematics A or B and English and at least two of the following subjects: Mathematics B, Chemistry, Physics, Biology, provided all are finished with a final mark of at least 5.5.
  DM: VWO students with NT/NG/EM profile are admissible to the 180 EC programme only if English is finished with a final mark of at least 5.5 (corona related).
- International students are admissible to the 180 EC VWO program only if Nuffic has determined that their diploma is equal to the Dutch VWO diploma. The diploma must, at a minimum, contain the topics chemistry, biology, physics and mathematics to study AET 180 EC.

b. a diploma deemed by ministerial decree to be at least equivalent, or at least equivalent to it in the opinion of the Executive Board. The Executive Board may also decide to admit another person to a three-year Degree programme than the one meant in the first paragraph if, in the opinion of the Executive Board, they have shown they are suitable for that programme.

Furthermore, students will have to obtain at least 12,5 EC in module 5 in order to continue in the 180 EC program. If students have obtained less than 12,5 EC, they get the chance to switch to the 240 EC program and join in module 2.

2.1.2 ***Deficiency investigation*** (article 2.4 CER HZ ba ft)
Enrolment: there are no deficiencies for HAVO and VWO students.
For students with a MBO level 4 diploma there is special attention for their motivation and guidance as part of the SKC (Studie Keuze Check).

2.1.3 ***Additional requirements*** (article 2.5 CER ba ft)
Not applicable.

2.2 Programme and education structure

2.2.1 ***Programme profile*** (article 3.2 CER HZ Ba ft)

The Water Management program is a broad and international study program with three study tracks: Aquatic Eco Technology, Delta Management and Spatial Planning & Design. It is practically orientated, which means that students work on various real-life cases during their studies, supported by lectures and practicals. Subjects and cases are being offered on a regional, national and international scale. Furthermore, education in the program is closely related to applied research. In various courses, research groups involve students in performing applied research. After finishing the Water Management program students have the knowledge and expertise to tackle a wide range of water-related problems in a critical, innovative and sustainable way. The international orientation of the study program means that the practical and theoretical skills students have gained can be applied anywhere in the world.

Year one, Semester one

During the first semester students are introduced to Deltas and their challenges: how they are formed, what makes them unique, how they are affected by climate change and why they are important both socially and ecologically. Students work on individual assignments as well as in teams and develop skills in research, presentation, communication and English. Through courses, practicals and field trips students gain information on the differences between the study tracks. Before the start of the second semester students choose to specialize in either Aquatic Eco Technology or Delta Management or Spatial Planning & Design.

Aquatic Eco Technology (AET)

In the AET program students focus on problem solving in the use of water systems and water chains. The emphasis is on coastal areas and the program combines ecological and technological knowledge. Special fields of study are ecological water quality, water treatment, hydrology, ecological engineering, integrated coastal zone management, aquaculture. The scope is to work in an interdisciplinary and international context.

Delta Management (DM)

Within Delta Management, students focus on spatial, ecological, social, institutional and economic issues of living in and around a delta. This includes sustainable area development, community resilience to disastrous events, integrated coastal zone management, climate adaptation and/or mitigation, circular economy, governance and communication. Students develop general knowledge of water management and learn to steer complex processes and projects in various delta areas worldwide. Visioning, strategic developments and project management are key in the study track.

Spatial Planning & Design (SPD)

Within Spatial Planning & Design students focus on the design of sustainable spatial solutions in delta areas and in water systems. The mitigative and/or adaptive spatial proposals and designs will contribute to reduce the effects of climate change. There is special attention for the legal and spatial boundaries and requirements in which the solutions are made. The development of drawing and presentation skills (by hand and with use of 2D/3D software) and research by design are key in this study track.

Year one, semester 2 and Year two

After choosing a study track students start with a more in-depth approach of the subjects that are relevant for their specific specialization. Knowledge, professional skills and personal development are being trained and

educated during 1,5 years at the HZ through theory lessons and practicals, and in external projects, where students work on real life cases from governments, companies and research groups. Where possible and relevant the three study tracks work together on developing general Water Management skills (e.g. GIS and Law) and on multi- and interdisciplinary projects to enhance teamwork from different points of view.

Year three

During the third year students will further develop professional skills during an internship and a minor. For either one, students can choose to gain skills and experience in ongoing applied research by doing a research minor or an internship at one of the research groups: Building with Nature, Aquaculture in Delta Areas, Water Technology, Resilient Deltas or Asset Management. For the minor, students can also decide to follow two modules at one of our partner universities in the Netherlands or abroad. The internship can be carried out at a relevant NGO, company or a governmental organization in the Netherlands or abroad.

Year four

In the final study year students will further develop skills in teamwork and apply their expertise in complex and interdisciplinary projects in international situations. Next to that students will elaborate their research skills in the first two modules to prepare for the final thesis project. Students will finalize their studies with a graduation internship at a company or an organization in the Netherlands or abroad. Within five months, students carry out an individual applied research project or they develop a professional product to prove that they have become a competent professional in the chosen field.

2.2.2 ***Learning outcomes*** (article 3.2 CER HZ Ba ft)

Table 1: Competences and subtasks for 4th year study program Aquatic Eco Technology

Competences (BBE, national standards)	**Professional subtasks Aquatic Eco Technology**
1. Initiate & direct	1.1 System analysis 1.2 Defining development challenge 1.3 Describing, monitoring and adjusting
2. Design	2.1 Design a plan, model or advice 2.2 Compare different designs
3. Specifying	3.1 Specifying and detailing
4. Realizing	4.1 Realizing
5. Maintaining / manage	5.1 Maintaining / Manage
6. Monitor, assess and evaluate	6.1 Monitoring, assessing and evaluating
7. Research	7.1 Demonstrating an inquisitive attitude 7.2 Using expertise and knowledge 7.3 Contributing to handling the practical challenge together, using research skills
8. Communicate and collaborate	8.1 Presenting 8.2 Reporting 8.3 Collaborating 8.4 Interacting appropriately in an international professional context
9. Coordinate and innovate	9.1 Developing self-motivation skills 9.2 Critical, methodological and analytical thinking 9.3 Creating a learning environment 9.4 Acquiring study skills 9.5 Learning to work together 9.6 Planning

Table 2: Competences and subtasks for 4th year study program Delta Management

Competences (BBE, national standards)	**Professional subtasks Delta Management**
1. Initiate & direct	1.1 System analysis 1.2 Defining development challenge 1.3 Describing, monitoring and adjusting
2. Design	2.1 Translate to design options 2.2 Design a plan, advice or process
3. Specifying	3.1 Specify feasibility 3.2 Specify practicability 3.3 Specify sustainability
4. Realizing	4.1 Delivering sustainable (sub)products
5. Maintaining / manage	5.1 Sustainable long-term management and maintenance planning
6. Monitor, assess and evaluate	6.1 Monitoring results 6.2 Testing results 6.3 Evaluating results
7. Research	7.1 Demonstrating an inquisitive attitude 7.2 Using expertise and knowledge 7.3 Conducting research
8. Communicate and collaborate	8.1 Presenting 8.2 Reporting 8.3 Collaborating 8.4 Interacting appropriately in an international professional context
9. Coordinate and innovate	9.1 Developing self-motivation skills 9.2 Critical, methodological and analytical thinking 9.3 Creating a learning environment 9.4 Acquiring study skills 9.5 Learning to work together 9.6 Planning

Table 3: Competences and subtasks for 1st, 2nd and 3rd year study program Water Management & 4th year Integrated Coastal Challenge and Final Thesis

Competences (BBE, national standards)	**Subtasks**	**Learning Goals**
1. Initiate and direct	1.1 Analysing a system	1.1.1 You define and analyse relevant physical systems in an area
		1.1.2 You define and analyse relevant social systems in an area
		1.1.3 You explain how relevant physical and social systems are related.
	1.2 Defining the task	1.2.1. You identify present and future risks and challenges for an area or water system
		1.2.2. You determine a vision statement for an area or water system.
	1.3 Setting the goals	1.3.1 You develop goals based on the vision statement
		1.3.2. You define conditions and requirements for the goals.
2. Design	2.1 Translating a program of requirements into design options	2.1.1. You propose different approaches to reach the goals

		2.1.2. You make a well-founded choice for an approach
	2.2 Designing a sustainable plan, advice or process	2.2.1.You develop the chosen approach into a plan, advice or process
		2.2.2. You show that your design is sustainable.
		2.2.3. You show that your design takes into account the relevant stakes, interests.
3. Specify	3.1 Specifying the feasibility	3.1.1 You assess the societal, technical, financial and legal feasibility of the design
	3.2 Specifying the implementation process	3.2.1 You make a detailed planning
4. Realise	4.1 Implementing a plan, advice or process	4.1.1 You make sure that the plan, policy or process can be put in practice, anticipating changes in the system.
5. Operate and maintain	5.1 Making an operation and maintenance plan	5.1.1 You make an operation and maintenance plan and indicate the short and long term actions.
6. Monitor, assess and evaluate	6.1 Monitoring, assessing and evaluating the results of a policy, advice or process	6.1.1. You develop a relevant method for monitoring the results
		6.1.2 You test and evaluate whether the results meet the goals.
7. Research	7.1 Researching	7.1.1. You Identify the question
		7.1.2 You collect, select and process information from sources on relevance and reliability
		7.1.3 You set up a research according to an accepted method
		7.1.4 You conduct research according to an accepted method
8. Communicate and collaborate	8.1 Communicating effectively and appropriately	8.1.1. You present, report and interact in a professional context
		8.1.2. You communicate in intercultural situations, based on intercultural knowledge, skills and attitude.
	8.2 Collaborating effectively and appropriately	8.2.1 You organise and participate in collaboration processes
		8.2.2 You give and receive constructive feedback
		8.2.3 You collaborate in an international professional context
9. Manage and innovate	9.1 Managing professional and personal processes	9.1.1 You direct, reflect on and take initiative in professional and personal processes
		9.1.2 You include global problems in professional and personal processes
	9.2 Bringing new perspective into an established situation	9.2.1 You are aware of key global challenges
		9.2.2 You propose improvements to established situations

2.2.3 ***Programme structure*** (article 3.3, 3.11a en 3.13 CER HZ ba ft)

National name:	B Watermanagement
International name:	B Water Management
Orientation:	Bachelor
Title conferred:	Bachelor of Science
Programme duration:	240 study credits (ECTS)
Course workload 'propaedeutic' phase:	60 study credits (ECTS)
Conclusion with 'propaedeutic' examination:	Yes
Course workload main phase:	180 study credits (ECTS)
Variant:	Full-time
ISAT code:	34074
Location:	Middelburg
Language:	Dutch/English (see specification below)
Effective date:	30-09-2016
Submission date	01-05-2021
Joint degree programme:	Not applicable
180 ECTS fast track:	Yes

Language

Study year	**WM-AET**	**WM-DM**	**WM-SPD**
Year 1	Dutch / English*	Dutch / English*	Dutch / English*
Year 2	English	English	English
Year 3	English**	English**	English**
Year 4	English**	English**	English**

* The first semester of the first year is offered both in Dutch and in English.

** The internship in the 3rd and 4th year of the program can take place either in the Netherlands or abroad. If the internship company demands the professional products and/or research report to be in Dutch, that is allowed. However the portfolio and final presentation (in case of a graduation internship), where students prove their competencies, need to be in English.

Water Management semester 1 and Aquatic Ecotechnology semester 2

Semester 1								Semester 2							
Module 1: Introduction to the Delta				Module 2: Challenges in the Delta				Module 3: AET				Module 4: AET			
CU79056	Professional Development	2,5 EC		CU79062	Professional Development	2,5 EC		CU79067	Marine Water Systems Analysis	2,5 EC		CU79072	Fresh Water Systems Analysis	2,5 EC	
CU79057	Geology	2,5 EC		CU79063	Integrated Water Management	2,5 EC		CU79068	Hydrology	2,5 EC		CU79073	Fluid mechanics	2,5 EC	
CU79058	Introduction to Ecology	2,5 EC		CU79064	Sustainable Developments	2,5 EC		CU79069	Biology & Ecology	2,5 EC		CU79074	Environmental Chemistry	2,5 EC	
CU79059	Water Governance	2,5 EC		CU79065	Climate Change	2,5 EC		CU79070	Risk Management	2,5 EC		CU79075	Water & Law	2,5 EC	
CU79060	Land and Water use in the Delta	2,5 EC		CU79066	Introduction Spatial Planning	2,5 EC		CU79071	Introduction to GIS	2,5 EC		CU79076	Project Management	2,5 EC	
CU79061	Desk Research	2,5 EC		CU04206	Academic Reading for Delta	2,5 EC		CU20676	HZ Personality I	2,5 EC		CU04207	Argument Writing	2,5 EC	
		15,0 EC				15,0 EC				15,0 EC				15,0 EC	

Water Management semester 1 and Delta Management - Spatial Planning & Design semester 2

Semester 1								Semester 2							
Module 1: Introduction to the Delta				Module 2: Challenges in the Delta				Module 3: DM + SP&D				Module 4: DM + SP&D			
CU79056	Professional Development	2,5 EC		CU79062	Professional Development	2,5 EC		CU79077	Visualization Techniques	5,0 EC		CU79080/ 79081	Process Management / Design	5,0 EC	
CU79057	Geology	2,5 EC		CU79063	Integrated Water Management	2,5 EC		CU79078	Spatial Planning	2,5 EC		CU79075	Water & Law	2,5 EC	
CU79058	Introduction to Ecology	2,5 EC		CU79064	Sustainable Developments	2,5 EC		CU79067	Marine Water Systems Analysis	2,5 EC		CU79076	Project Management	2,5 EC	
CU79059	Water Governance	2,5 EC		CU79065	Climate Change	2,5 EC		CU79070	Risk Management	2,5 EC		CU20676	HZ Personality I	2,5 EC	
CU79060	Land and Water use in the Delta	2,5 EC		CU79066	Introduction Spatial Planning	2,5 EC		CU79071	Introduction to GIS	2,5 EC		CU04207	Argument Writing	2,5 EC	
CU79061	Desk Research	2,5 EC		CU04206	Academic Reading for Delta	2,5 EC									
		15,0 EC				15,0 EC				15,0 EC				15,0 EC	

Water Management - AET year 2

	Semester 3						Semester 4					
Title	Module 5: Ecological Water Quality			Module 6: Water Treatment			Module 7: Hydrology			Module 8: Eco Engineering		
Main theme	Ecological water quality Water quality analysis			Water Technology Water treatment processes			Water quantity Water quantity analysis			Buildig with Nature Application of ecological processes		
	CU20590	Concepts of ecological water quality	5,0 EC	CU20593	Concepts of water pollution and treatment	5,0 EC	CU20611	Concepts of hydrology	5,0 EC	CU20617	Concepts of Eco Engineering	5,0 EC
	CU20591	Applied ecological water quality	5,0 EC	CU20595	Applications of water pollution and treatment	5,0 EC	CU20616	Applied hydrology	5,0 EC	CU20620	Applied Eco Engineering	5,0 EC
	CU20592	Ecological water quality in practice	2,5 EC	CU20594	Water pollution and treatment in practice	2,5 EC	CU20615	Hydrology in practice	2,5 EC	CU20618	Eco Engineering in practice	2,5 EC
	CU79103	Principles of Data Analysis	2,5 EC	CU20679	HZ Personality II	2,5 EC	CU20636	HZ Personality III	2,5 EC	CU20673	HZ Personality IV	2,5 EC
Total 60,0 EC			15,0 EC			15,0 EC			15,0 EC			15,0 EC

Water Management - DM year 2

	Semester 3						Semester 4					
Title	Module 5: Vision Development			Module 6: Adaptive Planning for Climate Change			Module 7: Risk and Disaster management			Module 8: Strategic Planning for Resilient Deltas		
Main theme	Vision development in European deltas Initating and directing skills			Climate adaptive planning in European deltas Adaptations in planning Monitoring skills			Integrated Risk Assessment Mississippi Delta Integrated Systems Communication and Collaboration			Strategic planning for Mississippi Delta Design Presentation skills		
	CU79025	Vision development theory	3,0 EC	CU79030	Adaptive planning theory	3,0 EC	CU79035	Spatial planning for deltaic risks	3,0 EC	CU79097	Spatial planning for Resilience	2 EC
	CU79103	Principles of Data Analysis	2,5 EC	CU79031	Research methodology	2,0 EC	CU79036	Social and Economic Risks	3,0 EC	CU79098	Socioeconomic Resilience	2 EC
	CU79055	Climate change physics & effects	2,5 EC	CU79033	Data Visualization	2,5 EC	CU79037	Project & Process I	3,0 EC	CU79100	Project & Process II	2 EC
	CU79028	Advanced GIS	2,0 EC	CU79106	Climate Adaptive Area request for proposal	5,0 EC	CU79038	Integrated risk assessment for Delta areas	3,5 EC	CU79099	Strategic planning for resilient deltas	6,5 EC
	CU79107	Climate Proof Area Vision	5,0 EC	CU20679	HZ Personality II	2,5 EC	CU20636	HZ Personality III	2,5 EC	CU20673	HZ Personality IV	2,5 EC
Total 60,0 EC			15,0 EC			15,0 EC			15,0 EC			15,0 EC

Water Management - SPD year 2

	Semester 3						Semester 4								
Title	Module 5: Vision Development			Module 6: Adaptive Planning for Climate Change			Module 7: Risk and Disaster management			Module 8: Strategic Planning for Resilient Deltas		
Main theme	Vision development in European deltas Initating and directing skills			Climate adaptive planning in European deltas Adaptations in planning Monitoring skills			Integrated Risk Assessment Mississippi Delta Integrated Systems Communication and Collaboration			Strategic planning for Mississippi Delta Design Presentation skills		
	CU79025	Vision development theory	3,0 EC	CU79030	Adaptive planning theory	3,0 EC	CU79035	Spatial planning for deltaic risks	3,0 EC			
	CU79103	Principles of Data Analysis	2,5 EC	CU79031	Research methodology	2,0 EC	CU79095	Social systems risks	3,0 EC	CU79097	Spatial planning for Resilience	2 EC
	CU79055	Climate change physics & effects	2,5 EC	CU79033	Data Visualization	2,5 EC	CU79096	Design methodologies I	3,0 EC	CU79102	Design methodologies II	3 EC
	CU79028	Advanced GIS	2,0 EC	CU79108	Strategic spatial interventions	5,0 EC	CU79038	Integrated risk assessment for Delta areas	3,5 EC	CU79101	Integrated Spatial Water plan	7,5 EC
	CU79104	Climate Proof Spatial Vision	5,0 EC	CU20679	HZ Personality II	2,5 EC	CU20636	HZ Personality III	2,5 EC	CU20673	HZ Personality IV	2,5 EC
Total 60,0 EC			15,0 EC			15,0 EC			15,0 EC			15,0 EC

Water Management year 3

	Semester 5	Semester 6
course	CU11022 Orienting work placement / internship (30,0 EC)	Minor (30,0 EC)
	OR	
course	Minor (30,0 EC)	CU11022 Orienting work placement / Internship (30,0 EC)
Total 60 EC		

Water Management - AET year 4

	Semester 7	Semester 8
	CU79085 Integrated Coastal Challenge (10,0 EC)	CU11020 Final Thesis (30,0 EC)
Choose two courses out of four	CU20700 Advanced Water Technology (10,0 EC)	
	CU79044 Ecological Risk Assessment (10,0 EC)	
	CU79043 Aquaculture (10,0 EC)	
	CU79087 Urban Water Management (10,0 EC)	
Total 60,0 EC		

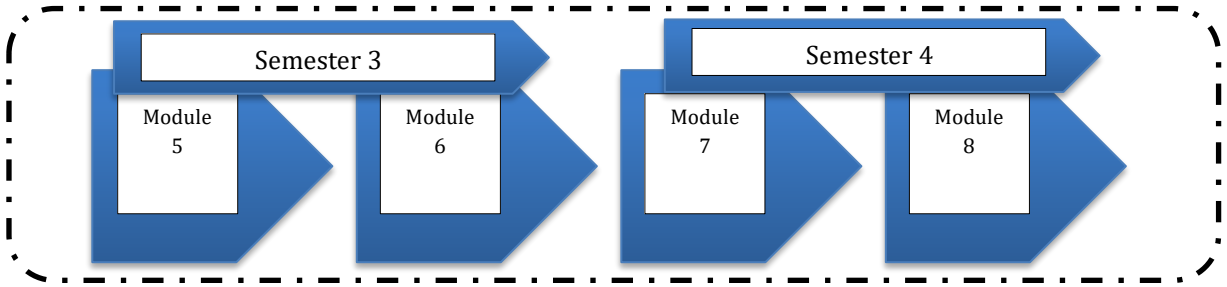
Water Management - DM year 4

Semester 7	Semester 8
CU79047 Mekong area and system analysis (2,5 EC)	CU11020 Final Thesis (30,0 EC)
CU79048 Spatial Planning for circularity (2,5 EC)	
CU79049 Delta Economics III (2,5 EC)	
CU79050 Delta Management (2,5 EC)	
CU79051 Mekong Project (10,0 EC)	
CU79085 Integrated Coastal Challenge (10,0 EC)	
Total 60,0 EC	

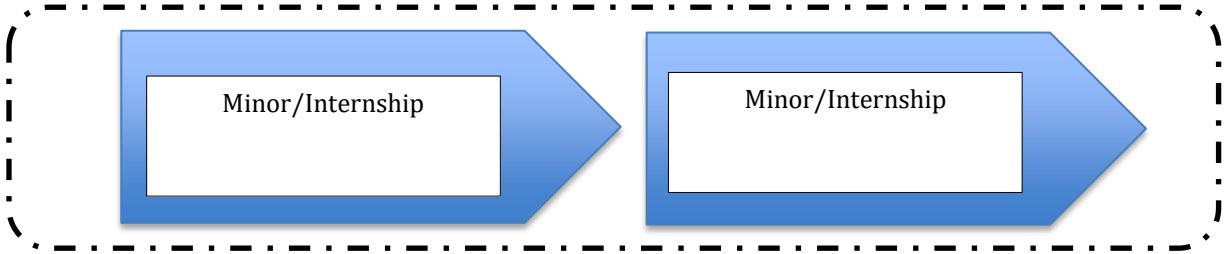
180 EC program Water Management (CROHO 34074) AET and DM:

Propaedeutic phase

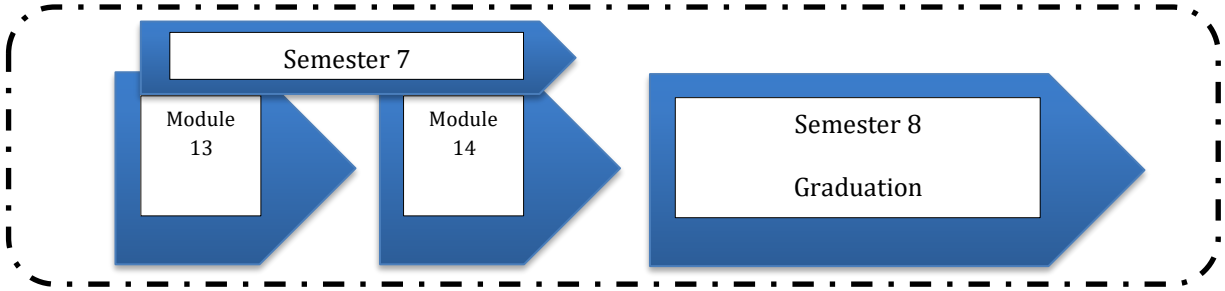
180 EC year 1 (= 240 EC program year 2)
This is the Propaedeutic phase



180 EC year 2 (= 240 EC program year 3)



180 EC year 3 (= 240 EC program year 4)



Note DM: next to module 5 a home studying program on GIS basics will be offered that is highly recommended in preparation of the GIS Advanced courses.
Note AET: it is recommended to follow a home study program for fluid mechanics during module 5.
Note SPD: there is no 180 EC program for Spatial Planning & Design, because the design skills that are required to be learned need the full four years to be practiced and developed (see also 2.1.1b admission requirements).

SOU program Water Management (CROHO 34074) direction Water Management - AET 180 EC program

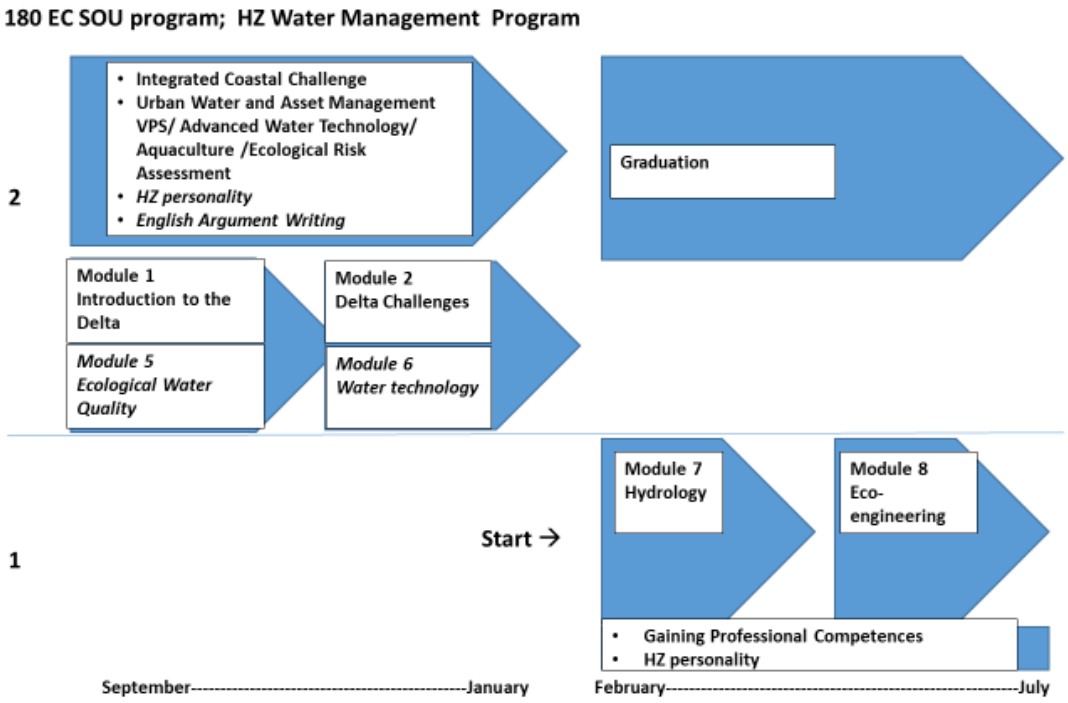
The HZ, Water Management – AET has a structural long term cooperation relation with the Bsc Programs Environmental Sciences and the Program Aquaculture from Shanghai Ocean University (SOU), China. The program WM has an extended intake procedure in which information, requirements and the method of intake, admission requirements and application are described. For admission of SOU students to the HZ -WM program the following requirements are valid:

a. English at least IELTS 6.0 (academic level); (speaking preferably at least 6.0)

b. intake interview positively (motivation, outgoing personality, perfect oral communication)

c. GPA of at least 3.0 (when an applicant does not meet this GPA level an interview is still possible to show extra qualities on motivation, practical experience, oral English etc.)

The basis for the program is an extensive comparison, carried out by HZ lecturers, of the SOU program Environmental Sciences and program Aquaculture with HZ Water Management program, based on course descriptions and a so-called confrontation matrix. In this SOU program Water Management no propaedeutic phase is included. Request for exemptions are done by individual students and assessed by examiners of the WM program. Granting of the exemptions is done and the responsibility of the exam board.



The SOU 180 EC program WM-AET contains:

Feb - Jul (57,5 EC)	Module 7, Hydrology (12,5 EC) CU20611+ CU20616 + CU20615 Module 8, Eco Engineering (12,5 EC) CU20617+ CU20620+ CU20618 Gaining professional competences (30 EC) CU22551 HZ Personality (2,5 EC) CU20679
Sept -Jan (92,5 EC)	*Module 5 Ecological Water Quality (12,5 EC) CU20590+ CU20591+ CU20592* *Module 6 Water Treatment (12,5 EC) CU20593+ CU20595+ CU20594* Integrated Coastal Challenge AET (10 EC) CU79085 Introduction to the Delta Geology (2.5 EC) CU79057 Water Governance (2.5 EC) CU79059 Land and Water Use (2.5 EC) CU79060 *Introduction to Ecology (2.5 EC) CU79058* *Becoming a Water Manager 1 (2.5 EC) CU79056* *Desk Research (2,5 EC) CU79061* Delta Challenges: Sustainable Development (2.5 EC) CU79064 Integrated Water Management (2,5 EC) CU79063 Climate Change (2.5 EC) CU79065 *English Academic Reading (2.5 EC) CU04206* *Becoming a Water Manager 2 (2.5 EC) CU79062* Space, time and Scale *(2.5 EC) CU79066* *HZ Personality (5 EC) CU20676+ CU20636* *English Argument Writing (2.5 EC) CU04207* Two out the following: Advanced Water Technology (10 EC) CU20700 / Aquaculture (10 EC) CU79043 (compulsory for SOU Aquac) / Urban Water and Asset Management (10 EC) CU79087/ Ecological Risk Assessment (10 EC) CU79044 (compulsory for SOU-ES)
Feb – Jul (30 EC)	Final thesis (30 EC) CU11020

2.2.3a Transfer with an Associate Degree certificate (article 3.3 paragraph 4 sub l CER HZ ba ft)

Not applicable.

*2.2.4 **Courses propaedeutic phase*** (article 3.5, 3.11A CER HZ Ba ft)

Explanation of the terms used in the tables below:

V:	Verbal
W:	Written
O:	Other
(I):	Individual result
(G):	Group result
Content:	See table 1, 2 and 3 in par. 2.2.2 of this document. In the tables below the numbers refer in general to learning goals (f.e. 1.1.1). However, if all learning goals belonging to 1 subtask are being assessed, the reference is to the number of the subtask (f.e. 1.1).
Contact hours:	A contact hour is only the time during which a teacher is physically present. This includes lectures and tutorials, study counselling, work placement counselling, excursions, fieldwork, tests and examinations and also study career counselling as far as the programme has programmed it for all students. Time for self-study, work placements and (unaccompanied) time for graduation research and thesis is not included in contact time.

SEMESTER 1

Module 1: Introduction to the Delta

Block 1 / Semester 1												
CU79056V1	**Title: Professional Development: Becoming a Water Manager 1**					**Number of study credits:2.5**		**Number of contact hours:14**		**Mandatory**	**Teaching language: Dutch/English**	
Conditions for course participation: not applicable												
Conditions for test participation: not applicable												
Brief description of course content: In module 1, the subject of the course professional development will be 'Becoming a Water Manager'. To become a Water Manager you already succeeded in the first step: beginning this study. But why did you started this study? How do you see yourself as a Water Manager and how do your friends and family see you? What are your skills and talents and which competences and skills do you need to learn to become a professional Water Manager? These are all questions we will ask you during the first semester and we will find out what kind of Water Manager you want to become.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x	x	x		Portfolio	8.1.1, 8.2.2, 9.1.1	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 1 / Semester 1												
CU79057V1	**Title: Geology**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**	**Teaching language: Dutch/English**	
Conditions for course participation: not applicable.												
Conditions for test participation: not applicable.												
Brief description of course content: The basis of our environment consists of abiotic and biotic matter; soil, biota and water systems. In this course you will learn how the behaviour of water, substances and sediments is interconnected and crucial in the formation of Delta Landscapes. During the practical you will train in observation skills, while determining landscape features and soil profile in the field.												
Compulsory literature: Joseph Holden (ed.), An introduction to Physical Geography and the Environment, 3rd or 4th edition												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.1	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 1 / Semester 1												
CU79058V2	**Title: Introduction to Ecology**					**Number of study credits:2.5**		**Number of contact hours:15**		**Mandatory**	**Teaching language: Dutch/English**	
Conditions for course participation: not applicable												
Conditions for test participation: participation practical assignments mandatory for TEST02												
Brief description of course content: In this course you will learn the basic ecological concepts from the scale of a population to an ecosystem, and how these concepts are interconnected. You will learn how groups of organisms interact with each other, with their physical environment, and how changes in the environment can affect them.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1, 9.2.1	80%	5.5	S1.8	S1.9	S1.10	S1.12
TEST02 (VT)	x	x		x	x	Portfolio	7.1.1, 8.2.1	20%	5.5	S1.1 -S1.7	S1.9	S1.10	S1.12

Block 1 / Semester 1												
CU79059V2	**Title: Water Governance**					**Number of study credits: 2.5**		**Number of contact hours: 30**		**Mandatory**		**Teaching language: Dutch/English**
Conditions for course participation: not applicable.												
Conditions for test participation: Participation in project mandatory for TEST02.												
Brief description of course content: As a water manager you are going to operate in very dynamic environment. Many organizations are involved in water issues. Together they make sure that clean and fresh water supply is guaranteed, while flood risk is reduced to a minimum. This environment is going to be the framework that sets the rules and conditions you will need to work with. Dynamics can however make it difficult to get things realized. Therefore it is important that you understand this framework and that you know how you can use it and how you can influence it. You will have to know how things are organized. The way we organize things is also called governance. It concerns structures and processes for decision making, accountability and control and behaviour at the top of an entity. In the course Water governance, you will learn how the political- and governance systems function and which organizations are responsible for certain tasks. You will study how policy is made and how stakeholders are involved in the process.												
Compulsory literature: not applicable**.**												

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.2, 1.2, 1.3	75%	5.5	S1.8	S1.9	S1.10	S1.12
TEST02 (VT)		x			x	Portfolio	1.1.2, 1.2, 1.3	25%	5.5	S1.8	S1.9	S1.10	S1.12

Block 1 / Semester 1												
CU79060V1	**Title: Land and Water Use in the Delta**					**Number of study credits: 2.5**		**Number of contact hours: 30**		**Mandatory**	**Teaching language: Dutch/English**	
Conditions for course participation: not applicable.												
Conditions for test participation: not applicable.												
Brief description of course content: This course will focus on the network and occupation layer of the layer approach. Deltas and their natural resources and ecosystems have value for many people and organisations. Different stakeholders make use of land and water in the delta. Sometimes these different interests support each other, other times these different interests can lead to conflicts. In this course you will analyse how the delta influences the land and water use and the other way around. This includes the historical land uses and the development towards spatial planning. Furthermore the political, economic, social, technological, environmental and legal context of the delta will be studied..												
Compulsory literature: not applicable.												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x			x	Paper Assignment	1.1.2, 1.1.3	100%	5.5	S1.7	S1.9	S1.10	S1.12

Block 1 / Semester 1												
CU79061V1	**Title: Desk Research**					**Number of study credits: 2.5**		**Number of contact hours: 30**		**Mandatory**	**Teaching language: Dutch/English**	
Conditions for course participation: not applicable.												
Conditions for test participation: not applicable.												
Brief description of course content: in this semester course you will learn to set up research and report about it according to international academic standards.												
Compulsory literature: not applicable.												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Paper Assignment	7.1	100%	5.5	S1.17	S1.19	S1.20	S2.2

Module 2: Challenges in the Delta

Block 2 / Semester 1												
CU79062V1	**Title: Professional Development: Becoming a Water Manager 2**					**Number of study credits: 2.5**	**Number of contact hours: 14**		**Mandatory**		**Teaching language: Dutch/English**	
Conditions for course participation: not applicable.												
Conditions for test participation: not applicable.												
Brief description of course content: In module 2, the subject of the course professional development will be 'Becoming a Water Manager'. To become a Water Manager you already succeeded in the first step: beginning this study. But why did you started this study? How do you see yourself as a Water Manager and how do your friends and family see you? What are your skills and talents and which competences and skills do you need to learn to become a professional Water Manager? These are all questions we will ask you during the first semester and we will find out what kind of Water Manager you want to become.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x	x	x		Portfolio	8.1.1, 8.2.2, 9.1.1	100%	5.5	S1.18	S1.19	S1.20	S2.2

Block 2 / Semester 1												
CU79063V1	**Title: Integrated Water Management**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: Dutch/English**
Conditions for course participation: not applicable.												
Conditions for test participation: not applicable.												
Brief description of course content: In this course you will learn an approach to analyse cause-effect relationships, responses and solutions in integrated water management.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x	x	x		Portfolio	1.1, 1.2.1, 8.1, 9.2	100%	5.5	S1.11- 17	S1.19	S1.20	S2.2

Block 2 / Semester 1												
CU79064V1	**Title: Sustainable Development**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**	**Teaching language: Dutch/English**	
Conditions for course participation: not applicable.												
Conditions for test participation: not applicable.												
Brief description of course content: In this course the concept of sustainable development will be discussed. You will learn what sustainable development is about and how economic models are related to sustainable development. You will look at the UN Sustainable Development Goals and how they are implemented in practice. Furthermore organisational strategies, including communication and marketing strategies, for sustainable development are discussed. You will take your first steps into (social) system innovation. You will learn how you and your organisation are part of a system and how you can influence the system. At the end of the course you can formulate your own opinion on and position towards sustainable development.												
Compulsory literature: not applicable.												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x	x	Portfolio	1.1.2, 1.2, 1.3	100%	5.5	S1.18	S1.19	S1.20	S2.2

Block 2 / Semester 1												
CU79065V1	**Title: Climate Change**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**	**Teaching language: Dutch/English**	
Conditions for course participation: not applicable.												
Conditions for test participation:. participation project mandatory for TEST01												
Brief description of course content: Climate change has a great effect on delta areas. In this course you will study the causes of climate change and it's effect on our planet in general and the economic and ecological functions and biodiversity in delta areas in particular. Also you will study strategies to prevent climate change (mitigation) and to adapt to climate change (adaptation).												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x			x	Paper Assignment	1.1, 1.2, 1.3, 2.1, 2.2	100%	5.5	S1.18	S1.19	S1.20	S2.2

Block 2 / Semester 1													
CU79066V1	**Title: Spatial analysis I: delta landscapes**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: Dutch/English**	
Conditions for course participation: not applicable.													
Conditions for test participation: participation in practical assignments and field trips mandatory for TEST01													
Brief description of course content: In this course you will learn how spatial planning and water management defined the (cultural) landscape of the Southwest Delta. Analyzing large scale spatial transformations and landscape typologies in the Southwest Delta will help you understand the unique relation between spatial planning and the benefits and challenges regarding water through time and space. What lessons in spatial planning through history can be learned concerning future (spatial) challenges in the Southwest Delta and other delta environments?													
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures and shared on Learnpage													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x		x		x	Portfolio	1.1	100%	5.5	S1.18	S1.19	S1.20	S2.2

Block 2 / Semester 1												
CU04206V14	**Title: Academic Reading for Delta**					**Number of study credits:2.5**		**Number of contact hours:21**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable.												
Conditions for test participation: Complete language exercises and assignments to prepare for the presentation and report mandatory (TEST02)												
Brief description of course content: This B2 academic reading course is aimed to build on the current level of reading skills in order to progress toward an advanced level of literacy that is essential in a successful academic career. The aim is to develop the core transferable skills in critical thinking and reading that students will use throughout their program of study. In order to strengthen reading skills, the course includes teaching the students to: use a variety of reading strategies to comprehend challenging texts; identify the main and supporting ideas in what they read; analyse academic writing in terms of rhetorical purpose, audience, content, genre, pattern of development and stylistic features; distinguish between fact and opinion; analyse the reasoning behind an argument; take a critical stance toward ideas; raising questions; examining evidence and evaluating arguments on the basis of reason.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	8.1.1	50%	5.5	S1.09	S1.10	S1.20	S2.2
TEST02 (VT)	X			X		Oral assessment	8.1.1	50%	5.5	S1.18	S1.19	S1.20	S2.2

SEMESTER 2

Module 3 AET

Block 3/ Semester 2												
CU79067V2	**Title: Marine Water Systems Analysis**					**Number of study credits: 2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: participation practical assignment and field trips mandatory for TEST01												
Brief description of course content: To be able to analyse and later on monitor and assess a marine water system you will study the biotic and abiotic aspects of marine water systems, use different methods of field inventory to gain information, apply this information in descriptive statistical tools. You will also visit marine water systems and apply the tools and skills you have learned.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x	x	x	x	Portfolio	1.1, 1.2.1, 7.1, 9.1	100%	5.5	S2.1-7	S2.9	S2.10	S2.12

Block 3 / Semester 2												
CU79068V1	**Title: Hydrology**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: acquire basic mathematics (SOWISO) mandatory for TEST01												
Brief description of course content: This course consists of an introduction into climate and weather systems, the (global) hydrological cycle, the methods to determine the elements of it and an introduction into calculating water balances.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2												
CU79069V1	**Title: Biology and Ecology**					**Number of study credits:2.5**		**Number of contact hours:45**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: participation practical assignments is mandatory for TEST02												
Brief description of course content: In this semester course you will cover basic biological concepts from the scale of a cell to an entire organism, and how these concepts are connected. You will learn how living things gain energy, reproduce and change within their environment. You will also learn how groups of organisms interact with each other, with their physical environment, and how changes in the environment can affect them.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.1	30%	5.5	S2.8	S2.9	S2.10	S2.12
TEST02 (VT)	x	x	x	x		Portfolio	1.1.1, 6.1, 7.1, 8.1.1	40%	5.5	S2.1-17	S2.19	S2.20	S2.22
TEST03 (VT)		x		x		Written knowledge test	1.1, 6.1.1	30%	5.5	S2.18	S2.19	S2.20	S2.22

Block 3 / Semester 2													
CU79070V1	**Title: Risk Management**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable													
Conditions for test participation: not applicable													
Brief description of course content: In this course you will learn the main concepts of risk management in relation to water management and climate change. In a group you will apply these concepts to analyse relevant physical and social systems of an urban area. By conducting a climate stress test you identify present and future risks. You will individually elaborate on one green/blue measure to provide a sustainable and acceptable advice for the urban area.													
Compulsory literature: not applicable													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x			x	Paper: Analysis report Assignment	1.1, 1.2	60%	5.5	S2.6	S2.7	S2.8	S2.12
TEST02 (VT)		x		x		Paper: Advice report Assignment	2.1, 2.2	40%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2													
CU79071V1	**Title: Introduction to GIS**					**Number of study credits: 2.5**		**Number of contact hours: 12**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable													
Conditions for test participation: not applicable													
Brief description of course content: As a water manager you need to be able to deal with geo-data. You have to know where to get relevant geo data, how to put it into a geodatabase, process and interpreted the data and show it in a proper map. You will learn the basic concepts of GIS and learn the basic skills in the needed software													
Compulsory literature: not applicable													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	8.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2											
CU20676V1	**Title: HZ Personality I**					**Number of study credits: 2.5**		**Number of contact hours: -**	**Mandatory**	**Teaching language: English**	
Conditions for course participation: not applicable											
Conditions for test participation: Complete portfolio Professional Development: Becoming a Team player 1+2 (learning goals 8.1, 8.2, 9.1.1)											
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market. For more information, see: • Learn page HZ personality Water Management: https://learn.hz.nl/course/view.php?id=17773&sectionid=198652#section-0											
Compulsory literature: not applicable											
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Accountability for study load hours [70] Portfolio	9.1.1 + various	100%	5.5	Variable	Variable	Variable	Variable

Module 4 AET

Block 4 / Semester 2												
CU79072V2	**Title: Fresh Water Systems Analysis**					**Number of study credits: 2.5**		**Number of contact hours: 30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: participation practical assignments and field trips is mandatory for TEST01												
Brief description of course content: To be able to analyse and later on monitor and assess a fresh water system you will study the biotic and abiotic aspects of fresh water systems, use different methods of field inventory to gain information, apply this information in descriptive statistical tools. You will also visit fresh water systems and apply the tools and skills you have learned.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x	x	x		Portfolio	1.1, 1.2.1, 7.1, 9.1	100%	5.5	S2.11-17	S2.19	S2.20	S2.22

Block 4 / Semester 2												
CU79073V1	**Title: Fluid Mechanics**					**Number of study credits: 2.5**		**Number of contact hours: 30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: not applicable												
Brief description of course content: Fluid mechanics is the science of hydrostatics and flowing water. You learn how to calculate pressures, velocities, water levels and energy losses in channels, pipes and small hydraulic structures.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.1	100%	5.5	S2.18	S2.19	S2.20	S2.22

Block 4 / Semester 2													
CU79074V1	**Title: Environmental Chemistry**					**Number of study credits: 2.5**		**Number of contact hours: 42**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable													
Conditions for test participation: participation practical assignment is mandatory for TEST02													
Brief description of course content: A delta area is constantly in transition due to autonomous developments. The focus of this module is on challenges in the delta area. In this semester course you will focus on chemistry in the environment; chemical reactions and relationships and their impact on water quality, aquatic life, air, soil and human health.													
Compulsory literature: not applicable													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1	60%	5.5	S2.18	S2.19	S2.20	S2.22
TEST02 (VT)	x	x	x	x		Portfolio	6.1, 7.1, 8.1.1	40%	5.5	S2.1-17	S2.19	S2.20	S2.22

Block 4 / Semester 2													
CU79075V2	**Title: Water and Law**					**Number of study credits: 2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable													
Conditions for test participation: not applicable													
Brief description of course content: In this course you will study the most relevant legal frameworks concerning water: European law, general administrative law, environmental law and spatial planning law. On the basis of theory and legal cases you'll gain insight in the goals and the functioning of the laws and regulations concerning water. On the one hand there are rules limiting water related activities but on the other hand the law is an instrument that offers the opportunity to work with water as well.													
Compulsory literature: not applicable													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written Knowledge test	1.1.2, 1.1.3, 3.1.1	50%	5.5	S2.18	S2.19	S2.20	S2.2
TEST02 (VT)	x		x	x	x	Workplace assessment	2.2.3, 1.1.2, 3.1.1, 4.1.1, 8.1.1, 8.2	50%	5.5	S2.14	S2.14	S2.20	S2.2

Block 4 / Semester 2													
CU79076V2	**Title: Project Management**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable													
Conditions for test participation: Certificate LinkedIn Learning course "Become a Project Manager" is mandatory for TEST01													
Brief description of course content: This course offers a comprehensive overview of project management aspects as methodology, tools and project management topics as planning, cost estimation, and evaluation methods. The theory of the course will be applied in a project management case.													
Compulsory literature: not applicable													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x	x	x		Oral assessment	1.2, 1.3, 2.1.2, 6.1, 8.1.1	100%	5.5	S2.15	S2.16	S2.17	S2.19

Block 4 / Semester 2												
CU04207V10	**Title: Argument Writing and Persuasive Presentations**					**Number of study credits:2.5**		**Number of contact hours:21**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: Complete language exercises and assignments to prepare for the report TEST01												
Brief description of course content: This is an academic writing course to improve argumentative writing and presentation skills in two parts. In part one of this course, the students review the target audience, purpose, and structure of a scientific argumentative essay. The students choose one controversial scientific topic in a field related to their studies. After which, research into supporting the argument is reviewed and built upon. Discussions are integrated into the lesson to reinforce the analytic and evaluative language required for the essay writing. In part two of the course, the students learn the skills necessary to participate in a professional persuasive presentation. They are expected to create double-sided arguments to support their reasoning. The use of academically viable evidence during the presentations will support new debate style vocabulary along with their critical thinking and reasoning.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			x	x		Assignment	8.1.1	50%	5.5	S2.08	S2.09	S2.10	S2.12
TEST02 (VT)	x			x		Oral Assessment	8.1.1	50%	5.5	S2.18/19	S2.18/19	S2.20	S2.20

Module 3 DM

Block 3/ Semester 2												
CU79077V1	**Title: Visualization techniques I**					**Number of study credits: 5**	**Number of contact hours: 45**	**Mandatory**	**Teaching language: English**			
Conditions for course participation: not applicable												
Conditions for test participation: participation practical assignment and field trips is mandatory for TEST01												
Brief description of course content: In this course you will explore and learn visualization techniques spatial planners and designers use to communicate an analysis and a vision. This first visualization techniques course will mainly focus on 2D drawing and mapping, and we will give you a first insight in some of the Adobe Software often used by designers. Your creativity and skills will be tested with a portfolio presentation.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x		x	x		Portfolio	1.1.1, 8.1.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2													
CU79071V1	**Title: Introduction to GIS**					**Number of study credits: 2.5**		**Number of contact hours: 12**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable													
Conditions for test participation: not applicable													
Brief description of course content: As a water manager you need to be able to deal with geo-data. You have to know where to get relevant geo data, how to put it into a geodatabase, process and interpreted the data and show it in a proper map. You will learn the basic concepts of GIS and learn the basic skills in the needed software													
Compulsory literature: not applicable													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written test	8.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2													
CU79078V1	**Title: Spatial analysis II: delta cities**					**Number of study credits: 2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable													
Conditions for test participation: participation practical assignments (mid term presentation) and field trips is mandatory for TEST01													
Brief description of course content: As a follow up of the course Spatial planning I, this course focusses on understanding and analysing the urban realm, urbanization and urban morphology within the Southwest Delta landscape. Based on a realistic case to formulate and visualize a vision on the redevelopment of an urban area in the Southwest Delta you will learn how to apply basic methods of analysing the spatial structure of an urban area. What are the characteristics and challenges of this area? Communicate your findings through different types of visualization techniques. In this project you will start to think and act like a spatial planner in a realistic case.													
Compulsory literature: not applicable													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x		x	x		Portfolio	1.1, 1.2.1, 2.1.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2												
CU79067V2	**Title: Marine Water Systems Analysis**					**Number of study credits: 2.5**	**Number of contact hours:30**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable												
Conditions for test participation: participation practical assignment and field trips is mandatory for TEST01												
Brief description of course content: To be able to analyse and later on monitor and assess a marine water system you will study the biotic and abiotic aspects of marine water systems, use different methods of field inventory to gain information, apply this information in descriptive statistical tools. You will also visit marine water systems and apply the tools and skills you have learned.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x	x	x	x	Portfolio	1.1, 1.2.1, 7.1, 9.1	100%	5.5	S2.1-7	S2.9	S2.10	S2.12

Block 3 / Semester 2												
CU79070V1	**Title: Risk Management**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: not applicable												
Brief description of course content: In this course you will learn the main concepts of risk management in relation to water management and climate change. In a group you will apply these concepts to analyse relevant physical and social systems of an urban area. By conducting a climate stress test you identify present and future risks. You will elaborate individually on one green/blue measure to provide a sustainable and acceptable advice for the urban area.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x			x	Paper: Analysis report Assignment	1.1, 1.2	60%	5.5	S2.6	S2.7	S2.8	S2.12
TEST02 (VT)		x		x		Paper: Advice report Assignment	2.1, 2.2	40%	5.5	S2.8	S2.9	S2.10	S2.12

Module 4 DM

Block 4 / Semester 2												
CU79075V2	**Title: Water and Law**					**Number of study credits: 2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: not applicable												
Brief description of course content: In this course you will study the most relevant legal frameworks concerning water: European law, general administrative law, environmental law and spatial planning law. On the basis of theory and legal cases you'll gain insight in the goals and the functioning of the laws and regulations concerning water. On the one hand there are rules limiting water related activities but on the other hand the law is an instrument that offers the opportunity to work with water as well.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.2, 1.1.3, 3.1.1	50%	5.5	S2.18	S2.19	S2.20	S2.2
TEST02 (VT)	x		x	x	x	Workplace assessment	2.2.3, 1.1.2, 3.1.1, 4.1.1, 8.1.1, 8.2	50%	5.5	S2.14	S2.14	S2.20	S2.2

Block 4 / Semester 2												
CU79080V1	**Title: Process management in spatial planning: local scale spatial transitions**					**Number of study credits: 5**		**Number of contact hours: 45**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: 80% participation practical assignments and field trips is mandatory for TEST01												
Brief description of course content: This course is an introduction in spatial planning and design on the local scale focusing on spatial transitions of collective and public spaces. Based on analysing and understanding reference projects and a case study in the Southwest Delta you will learn the basic aspects of a small-scale spatial planning process and particularly the added value of communication within this process. In a challenging case study, you will explore future possibilities to achieve the required transition of an area by making a participation plan. You will learn how to enforce and communicate design decisions in a convincing manner.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x		x		Presentation	8.1.1	20%	5.5	S2.18	S2.18	S2.20	S2.20
TEST02 (VT)		x	x	x		Portfolio	1.1, 2.1.2, 2.2., 3.1.1, 3.2.1, 7.1, 8.1.1, 9.2.1	80%	5.5	S2.18	S2.19	S2.20	S2.22

Block 4 / Semester 2												
CU79076V2	**Title: Project Management**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: Certificate LinkedIn Learning course "Become a Project Manager" is mandatory for TEST01												
Brief description of course content: This course offers a comprehensive overview of project management aspects as methodology, tools and project management topics as planning, cost estimation, and evaluation methods. The theory of the course will be applied in a project management case.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x	x	x		Oral test	1.2, 1.3, 2.1.2, 6.1, 8.1.1	100%	5.5	S2.15	S2.16	S2.17	S2.19

Block 4 / Semester 2						
CU20676V1	**Title: HZ Personality I**	**Number of study credits: 2.5**	**Number of contact hours: -**	**Mandatory**	**Teaching language: English**	
Conditions for course participation: not applicable						
Conditions for test participation: Complete portfolio Professional Development: Becoming a Team player 1+2 (learning goals 8.1, 8.2, 9.1.1)						
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market. For more information, see: • Learn page HZ personality Water Management: https://learn.hz.nl/course/view.php?id=17773&sectionid=198652#section-0						
Compulsory literature: not applicable						

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Accountability for study load hours [70] Portfolio	9.1.1 + various	100%	5.5	Variable	Variable	Variable	Variable

Block 4 / Semester 2												
CU04207V10	**Title: Argument Writing and Persuasive Presentations**					**Number of study credits:2.5**		**Number of contact hours:21**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: Complete language exercises and assignments to prepare for the report TEST01												
Brief description of course content: This is an academic writing course to improve argumentative writing and presentation skills in two parts. In part one of this course, the students review the target audience, purpose, and structure of a scientific argumentative essay. The students choose one controversial scientific topic in a field related to their studies. After which, research into supporting the argument is reviewed and built upon. Discussions are integrated into the lesson to reinforce the analytic and evaluative language required for the essay writing. In part two of the course, the students learn the skills necessary to participate in a professional persuasive presentation. They are expected to create double-sided arguments to support their reasoning. The use of academically viable evidence during the presentations will support new debate style vocabulary along with their critical thinking and reasoning.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			x	x		Assignment	8.1.1	50%	5.5	S2.08	S2.09	S2.10	S2.12
TEST02 (VT)	x			x		Oral Assessment	8.1.1	50%	5.5	S2.18/19	S2.18/19	S2.20	S2.20

Module 3 SPD

Block 3 / Semester 2											
CU79077V1	**Title: Visualization techniques I**					**Number of study credits: 5**	**Number of contact hours: 45**	**Mandatory**	**Teaching language: English**		
Conditions for course participation: not applicable											
Conditions for test participation: participation practical assignment and field trips is mandatory for TEST01											
Brief description of course content: In this course you will explore and learn visualization techniques spatial planners and designers use to communicate an analysis and a vision. This first visualization techniques course will mainly focus on 2D drawing and mapping, and we will give you a first insight in some of the Adobe Software often used by designers. Your creativity and skills will be tested with a portfolio presentation.											
Compulsory literature: not applicable											
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x		x	x		Portfolio	1.1.1, 8.1.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2													
CU79071V1	**Title: Introduction to GIS**					**Number of study credits: 2.5**		**Number of contact hours: 12**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable													
Conditions for test participation: not applicable													
Brief description of course content: As a water manager you need to be able to deal with geo-data. You have to know where to get relevant geo data, how to put it into a geodatabase, process and interpreted the data and show it in a proper map. You will learn the basic concepts of GIS and learn the basic skills in the needed software													
Compulsory literature: not applicable													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	8.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2													
CU79078V1	**Title: Spatial analysis II: delta cities**					**Number of study credits: 2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable													
Conditions for test participation: participation practical assignments (mid term presentation) and field trips is mandatory for TEST01													
Brief description of course content: As a follow up of the course Spatial planning I, this course focusses on understanding and analysing the urban realm, urbanization and urban morphology within the Southwest Delta landscape. Based on a realistic case to formulate and visualize a vision on the redevelopment of an urban area in the Southwest Delta you will learn how to apply basic methods of analysing the spatial structure of an urban area. What are the characteristics and challenges of this area? Communicate your findings through different types of visualization techniques. In this project you will start to think and act like a spatial planner in a realistic case.													
Compulsory literature: not applicable													
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x		x	x		Portfolio	1.1, 1.2.1, 2.1.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2												
CU79067V2	**Title: Marine Water Systems Analysis**					**Number of study credits: 2.5**	**Number of contact hours:30**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable												
Conditions for test participation: participation practical assignment and excursions is mandatory for TEST01												
Brief description of course content: To be able to analyse and later on monitor and assess a marine water system you will study the biotic and abiotic aspects of marine water systems, use different methods of field inventory to gain information, apply this information in descriptive statistical tools. You will also visit marine water systems and apply the tools and skills you have learned.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x	x	x	x	Portfolio	1.1, 1.2.1, 7.1, 9.1	100%	5.5	S2.1-7	S2.9	S2.10	S2.12

Block 3 / Semester 2												
CU79070V1	**Title: Risk Management**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: not applicable												
Brief description of course content: In this course you will learn the main concepts of risk management in relation to water management and climate change. In a group you will apply these concepts to analyse relevant physical and social systems of an urban area. By conducting a climate stress test you identify present and future risks. You will individually elaborate on one green/blue measure to provide a sustainable and acceptable advice for the urban area.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x			x	Paper: Analysis report Assignment	1.1, 1.2	60%	5.5	S2.6	S2.7	S2.8	S2.12
TEST02 (VT)		x		x		Paper: Advice report Assignment	2.1, 2.2	40%	5.5	S2.8	S2.9	S2.10	S2.12

Module 4 SPD

Block 4 / Semester 2												
CU79075V2	**Title: Water and Law**					**Number of study credits: 2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: not applicable												
Brief description of course content: In this course you will study the most relevant legal frameworks concerning water: European law, general administrative law, environmental law and spatial planning law. On the basis of theory and legal cases you'll gain insight in the goals and the functioning of the laws and regulations concerning water. On the one hand there are rules limiting water related activities but on the other hand the law is an instrument that offers the opportunity to work with water as well.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.2, 1.1.3, 3.1.1	50%	5.5	S2.18	S2.19	S2.20	S2.2
TEST02 (VT)	x		x	x	x	Workplace assessment	2.2.3, 1.1.2, 3.1.1, 4.1.1, 8.1.1, 8.2	50%	5.5	S2.14	S2.14	S2.20	S2.2

Block 4 / Semester 2												
CU79081V1	**Title: Spatial planning & Design 1: the local scale**					**Number of study credits: 5**		**Number of contact hours: 45**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: 80% attendance in studio sessions and participation in field trips is mandatory for TEST01 and TEST02.												
Brief description of course content: This course is an introduction in spatial planning and design on the local scale focusing on spatial transitions of collective and public spaces. Based on analyzing and understanding reference projects and a case study in the Southwest Delta you will learn the basic aspects of a small-scale spatial planning process and particularly the added value of communication within this process. In a challenging case study you will explore future possibilities to achieve the required transition of an area by making a design proposal. You will learn how to enforce and communicate design decisions in a convincing manner												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x			x		Presentation	8.1.1	20%	5.5	S2.18	S2.18	S2.20	S2.22
TEST02 (VT)	x		x	x		Portfolio	1.1, 2.1.2, 2.2., 3.1.1, 3.2.1, 7.1, 9.2.1	80%	5.5	S2.18	S2.19	S2.20	S2.20

Block 4 / Semester 2												
CU79076V2	**Title: Project Management**					**Number of study credits:2.5**		**Number of contact hours:30**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: Certificate LinkedIn Learning course "Become a Project Manager" is mandatory for TEST01												
Brief description of course content: This course offers a comprehensive overview of project management aspects as methodology, tools and project management topics as planning, cost estimation, and evaluation methods. The theory of the course will be applied in a project management case.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x	x	x		Oral test	1.2, 1.3, 2.1.2, 6.1, 8.1.1	100%	5.5	S2.15	S2.16	S2.17	S2.19

Block 4/ Semester 2												
CU20676V1	**Title: HZ Personality I**					**Number of study credits: 2.5**		**Number of contact hours: -**		**Mandatory**	**Teaching language: English**	
Conditions for course participation: not applicable												
Conditions for test participation: Complete portfolio Professional Development: Becoming a Team player 1+2 (learning goals 8.1, 8.2, 9.1.1)												
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market. For more information, see: • Learn page HZ personality Water Management												
Compulsory literature: not applicable												

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Accountability for study load hours [70] Portfolio	9.1.1 + various	100%	5.5	Variable	Variable	Variable	Variable

Block 4 / Semester 2												
CU04207V10	**Title: Argument Writing and Persuasive Presentations**					**Number of study credits:2.5**		**Number of contact hours:21**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: Complete language exercises and assignments to prepare for the report TEST01												
Brief description of course content: This is an academic writing course to improve argumentative writing and presentation skills in two parts. In part one of this course, the students review the target audience, purpose, and structure of a scientific argumentative essay. The students choose one controversial scientific topic in a field related to their studies. After which, research into supporting the argument is reviewed and built upon. Discussions are integrated into the lesson to reinforce the analytic and evaluative language required for the essay writing. In part two of the course, the students learn the skills necessary to participate in a professional persuasive presentation. They are expected to create double-sided arguments to support their reasoning. The use of academically viable evidence during the presentations will support new debate style vocabulary along with their critical thinking and reasoning.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			x	x		Assignment	8.1.1	50%	5.5	S2.08	S2.09	S2.10	S2.12
TEST02 (VT)	x			x		Oral Assessment	8.1.1	50%	5.5	S2.18/19	S2.18/19	S2.20	S2.20

2.2.4 ***Main phase courses*** (article 3.6, 3.11A CER HZ ba ft)

SEMESTER 3 & 4 AET

Block 5/ Semester 3												
CU79103V2	**Title: Principles of Data Analysis**					**Number of study credits: 2.5**		**Number of contact hours: 24**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: not applicable												
Brief description of course content: Student will learn to prepare data sets for analysis (data management), methods to summarize and describe a data set (descriptive analysis), basic methods to test for statistical significance, to visualise the data in a clear and concise way, and to answer research questions based on data.												
Compulsory literature: Excel 2007 or higher												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*	*x*	*x*		Portfolio	7.1.2	40%	4.0	S1.8	S1.9	S1.10	S1.12
TEST02 (VT)		*x*	*x*	*x*		Written knowledge test	6.1.1, 6.1.2	60%	5.5	S1.8	S1.9	S1.10	S1.12

Module 5 (AET): Ecological Water Quality

Block 5 / Semester 3											
CU20590V1	**Title: Concepts of Ecological Water Quality**					**Number of study credits: 5,0**	**Number of contact hours: 44**	**Mandatory**	**Teaching language: English**		
Conditions for course participation: not applicable.											
Conditions for test participation: not applicable.											
Brief description of course content: You will deal with an important water issue: water quality. In this module you also learn how to monitor, analyze causes and effects of changes in water quality. And what the ecological principles (interaction between chemistry and biology) are behind it and how these are related to different water systems like rivers, lakes, estuaries and seas. In this course 'concepts' , you also learn what policy tools, like European Water Framework Directive , are used to access the quality of water bodies and the appropriate measures to be taken.											
Compulsory literature: *Ecology of Aquatic Systems*, Dobson & Frid, second edition											
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST 1 (VT)		*x*		*x*		Written knowledge Test	1.1 , 1.2, 2.1 (table 3)	100%	5.5	S1.8	S1.9	S1.10	S1.11-13

Block 5 / Semester 3												
CU20591V1	**Title: Applied Ecological Water Quality**					**Number of study credits: 5,0**	**Number of contact hours: 44**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: not applicable.												
Conditions for test participation: complete attendance to the field week.												
Brief description of course content: You will deal with an important water issue: water quality. In this course 'applied' you will apply the knowledge and skills from the other two courses 'concepts' and 'in practice' in specific water systems. Meaning that you will prepare and carry out ecological water quality measurements in the field. Identify the organisms found and analyze physical, chemical and biological data. And based on prevailing policy instruments indicate the quality. Finally you are asked to evaluate what appropriate measures can be taken to improve the ecological water quality.												
Compulsory literature: *Ecology of Aquatic Systems*, Dobson & Frid, second edition												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST 1 (VT)	*x*	*x*		*x*	*x*	Portfolio	2.2, 3.2, 4.1, 6.1, 7.1, 8.1, 8.2 (table 3)	100%	5.5	S1.8	S1.9	S1.10	S1.11-13

Blok 5 / Semester 3																	
CU20592V1	**Title: Ecological Water Quality in Practise**						**Number of study credits: 2,5**		**Number of contact hours: 22**		**Mandatory**		**Teaching language: English**				
Conditions for course participation: Agreement to laboratory instructions.																	
Conditions for test participation: Presence at all lab practicals is compulsory.																	
Brief description of course content: You will deal with an important water issue: water quality. In this course ' in practice', you will learn specific tools to assess the water quality based on the presence of organisms and pigments. Apart from that you learn in an experimental setting how the role of specific organisms like filter feeders, in the food chain can be determined based on the processes measured. And you will work with a computer model, used in water management practice, to analyze causes and feasible measures to improve water quality in lakes.																	
Compulsory literature: Labkit and lab coat																	
Test code	**Format**					**Assessment type**		**Content**	**Weighting Factor (%)**		**Minimum score**	**Planning test in week**		**Inspection of work in week**		**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**												
TEST 1 (VT)		*x*			*x*	Portfolio		6.1, 7.1 (table 3)	100%		5.5	S1.8		S1.9		S1.10	S1.11-13

Module 6 (AET): Water Pollution & Treatment

Block 6 / Semester 3												
CU20593v1	**Title: Concepts of water pollution and treatment**					**Number of study credits: 5.0**		**Number of contact hours: 55**		**Mandatory**		**Teaching language: English**
Conditions for course participation: not applicable												
Conditions for test participation: not applicable												
Brief description of course content: In this module, you will investigate the possibilities of combatting poor water quality with various treatment techniques. During this module you will learn about the water system and how to monitor its status. You will use calculations to determine the effect of different discharges on a water system and how you can limit these effects through water treatment. Treatment types that will be investigated include biological, chemical and physical.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST 1 (VT)		*x*		*x*		Written knowledge test	1.1 (table 3)	100%	5.5	S1.18	S1.20	S2.10	S2.12

Block 6 / Semester 3												
CU20595v1	**Title: Applications of water pollution and treatment**					**Number of study credits: 5.0**		**Number of contact hours: 50**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Abiding by laboratory instructions and behaving safely in the lab												
Conditions for test participation: not applicable												
Brief description of course content: In the 'Applied' project, you will work on a problem for a local company to help them to try and solve a water quality issue that they have, by producing a design for a treatment technique. You will report your results and final design back to the company at the end of the project.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST 1 (VT)		*x*		*x*	*x*	individual and group assignments Portfolio	2.1, 2.2, 3.2, 4.1, 6.1, 7.1, 8.1 (table 3)	100%	5.5	S1.18	S1.19	S1.20	S2.1

Block 6 / Semester 3												
CU20594v1	**Title: Water pollution and treatment in practice**					**Number of study credits: 2.5**	**Number of contact hours: 22**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: Abiding by laboratory instructions and behaving safely in the lab												
Conditions for test participation: not applicable												
Brief description of course content: During the 'In practice' lab sessions you will learn how to perform water quality analysis of certain essential water quality parameters in the world of water treatment. Besides the lab skills you learn to use balances to analyze a water system. Water and mass balances will be applied to analyze both natural water systems and a waste water treatment system. You also learn to use some analysis tools in GIS.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST 1 (VT)		*x*			*X*	group assignments Portfolio	6.1, 7.1, (table 3)	100%	5.5	S1.18	S1.19	S1.20	S2.1

Block 6 / Semester 3												
CU20679v1	**Title: HZ Personality II**					**Number of study credits: 2.5**	**Number of contact hours: -**	**Mandatory**		**Teaching language: Dutch/English**		
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market.												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*x*		Portfolio	9.1 (table 3)	100%	5.5	Variable	Variable	Variable	Variable

Module 7 (AET): Hydrology

Block 7 / Semester 4												
CU20611v4	**Title: Concepts of hydrology**		**Number of study credits: 5,0**		**Number of contact hours: 38**		**Mandatory**	**Teaching language: English**				
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: This course is explaining the theory about rural water requirements in polders; water in the saturated and unsaturated zone, managing the water levels, small hydraulic structures, wetlands. You apply the knowledge in calculations.												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			x	x		Portfolio	1.1	20%	5.5	S2.3	S2.4	S2.10	S2.13
TEST02 (VT)		x		x		Written knowledge test	1.1	70%	5.5	S2.8	S2.9	S2.10	S2.13
TEST03 (VT)			x		x	Portfolio	1.1	10%	5.5	S2.4	S2.5	S2.10	S2.13

Block 7 / Semester 4											
CU20616v1	**Title: Applied hydrology**					**Number of study credits: 5,0**		**Number of contact hours: 20**		**Mandatory**	**Teaching language: English**
Conditions for course participation: Not applicable											
Conditions for test participation: Not applicable											
Brief description of course content: In this course the rural problems of water excesses and fresh water shortages in the delta are explored. The course focusses on designing water solutions for stakeholders in agriculture.											
Compulsory literature:											
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x	x		x		Portfolio	1.2, 2.1, 2.2, 5.1, 8.1, 8.2, 9.1, 9.2	100%	5.5	S2.8	S2.9	S2.10	S2.13

Block 7 / Semester 4												
CU20615v1	**Title: Hydrology in practice**					**Number of study credits: 2,5**		**Number of contact hours: 22**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: In this course you will learn how to work with two software systems: a system to model hydraulic water systems 'Sobek' and a GIS system 'ARC GIS'												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		(Work place) Assessment	2.1, 3.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 7 / Semester 4					
CU20636v1	**Title: HZ Personality III**	**Number of study credits: 2.5**	**Number of contact hours: -**	**Mandatory**	**Teaching language: Dutch/ English**
Conditions for course participation: not applicable					
Conditions for test participation: Special condition for awarding study points (tick-box test)					
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market.					
Compulsory literature: not applicable					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	9.1 (table 3)	100%	5.5	Variable	Variable	Variable	Variable

Module 8 (AET): Eco Engineering

Block 8 / Semester 4

CU20617V4	Title: Concepts of Eco Engineering	Number of study credits: 5	Number of contact hours: 24	Mandatory	Teaching language: English

Conditions for course participation: Not applicable.

Conditions for test participation: Not applicable.

Brief description of course content: Eco engineering is the design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both. Threats like loss in biodiversity and habitats, climate change and sea level rise make eco engineering necessary. In this module the focus is on things like building with nature, nature-based solutions and working with nature in delta areas.

In *concepts* you will get insight into coastal protection through measures that are based on natural materials and processes, that also increase the landscape and natural values of the area. The focus is on the interactions and feedback loops between hydrology (waves, tides, currents), morphology (sediment transport, erosion, sedimentation) and ecology (adaptations of species to harsh environments, biodiversity, ecosystem engineers as oysters and mussels).

Compulsory literature: Literature available on HZ Learn.

Test code	Format					Assessment type	Content	Weighting Factor (%)	Minimum score	Planning test in week	Inspection of work in week	Resit scheduled in week	Inspection of resit in week
	V	W	O	I	G								
TEST01		x		x		Ethics Written knowledge test	1.2	20%	5.5	15	17	20	22
TEST02		x		x		Eco engineering Written knowledge test	1.1	80%	5.5	18	19	20	22

Block 8 / Semester 4					
CU20620V4	**Title: Applied Eco Engineering**	**Number of study credits: 5**	**Number of contact hours: 39**	**Mandatory**	**Teaching language: English**
Conditions for course participation: Not applicable.					
Conditions for test participation: Not applicable.					
Brief description of course content: Eco engineering is the design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both. Threats like loss in biodiversity and habitats, climate change and sea level rise make eco engineering necessary. In this module the focus is on things like building with nature, nature-based solutions and working with nature in delta areas. In *applied* you will produce an own experimental design in a research setting to tackle coastal safety issues and to increase biodiversity in the Dutch delta. You will work in small groups to analyze maps and data and produce innovative ideas for further research.					
Compulsory literature: Not applicable.					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01			x		x	research proposal Assignment	1.2, 1,3, 2.2, 6.1, 7.1, 8.1, 8.2, 9.1, 9.2	20%	5.5	14	17	20	22
TEST02			x		x	research report Assignment	1.2, 1,3, 6.1, 7.1, 8.1, 8.2, 9.1, 9.2	80%	5.5	18	19	20	22

Block 8 / Semester 4					
CU20618V1	**Title: Eco Engineering in practice**	**Number of study credits: 2.5**	**Number of contact hours: 24**	**Mandatory**	**Teaching language: English**
Conditions for course participation: Not applicable.					
Conditions for test participation: Not applicable.					
Brief description of course content: Eco engineering is the design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both. Threats like loss in biodiversity and habitats, climate change and sea level rise make eco engineering necessary. In this module the focus is on things like building with nature, nature-based solutions and working with nature in delta areas. You will *practice* with several eco-engineering tools and software. Concepts and how to apply them will be explained for ecotope maps, suitability maps and hypsometric curves. You will apply them in several research cases.					
Compulsory literature: Not applicable.					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01			x	x		Portfolio	9.1	100%	5.5	13-17	18	20	22

Block 8 / Semester 4					
CU20673v1	**Title: HZ Personality IV**	**Number of study credits: 2.5**	**Number of contact hours: -**	**Mandatory**	**Teaching language: Dutch/ English**
Conditions for course participation: not applicable					
Conditions for test participation: Special condition for awarding study points (tick-box test)					
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market.					
Compulsory literature: not applicable					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	9.1 (table 3)	100%	5.5	Variable	Variable	Variable	Variable

SEMESTER 3 & 4 DM

Module 5 (DM): Vision Development

Block 5 / Semester 3

CU79103V2	Title: Principles of Data Analysis	Number of study credits: 2.5	Number of contact hours: 24	Mandatory	Teaching language: English

Conditions for course participation: not applicable

Conditions for test participation: not applicable

Brief description of course content:

Student will learn to prepare data sets for analysis (data management), methods to summarize and describe a data set (descriptive analysis), basic methods to test for statistical significance, to visualise the data in a clear and concise way, and to answer research questions based on data.

Compulsory literature: Excel 2007 or higher

Test code	Format					Assessment type	Content	Weighting Factor (%)	Minimum score	Planning test in week	Inspection of work in week	Resit scheduled in week	Inspection of resit in week
	V	W	O	I	G								
TEST01 (VT)		*x*	*x*	*x*		Portfolio	7.1.2	40%	4.0	S1.8	S1.9	S1.10	S1.12
TEST02 (VT)		*x*	*x*	*x*		Written knowledge test	6.1.1, 6.1.2	60%	5.5	S1.8	S1.9	S1.10	S1.12

Block 5 / Semester 3												
CU79025v1	**Title: Vision development theory**					**Number of study credits: 3.0**		**Number of contact hours: 26**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: This course covers theories about vision development. You will learn how to formulate a vision by using scenarios based on different uncertainties and driving forces. Furthermore, you learn about the management of these processes (embedded within the Environmental and Development Act), stakeholder participation and communication with different target groups.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*x*		Written knowledge test	1.1.3 (table 3)	100%	5.5	S1.8	S1.9	S1.10	S1.11

Block 5 / Semester 3												
CU79055v3	**Title: Climate change physics & effects**					**Number of study credits: 2.5**		**Number of contact hours: 22**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: This course covers the theories about the climate change physics and effects. You will learn the basic physics and calculations behind the climate change effects (drought, heat stress, floods and extreme precipitation) in Europe and their social and economic impact. Complementary to the aforementioned content you will learn and practice basic hydrology calculations.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*X*		*X*		Written knowledge test	9.2.1.	100%	5.5	S1.8	S1.9	S1.10	S1.11

Block 5 / Semester 3												
CU79028v3	**Title: Advanced GIS**					**Number of study credits: 2.0**		**Number of contact hours: 18**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: In this course is the follow up of the 'introduction into GIS course'. You will learn how to conduct a raster, vector and a DEM analysis, with the uses ARC GIS Pro software. By realizing a flood impact analysis of a flood prone area. Course will be assessed by a portfolio test in week 7 of semester 1.												
Compulsory literature: for this course is ARC GIS Pro, running under HZ licence at MacOS, Microsoft Windows or Linux, and the use of a non-desktop computer required.												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			*X*	*X*		Portfolio	1.1.1, 6.1.1	100%	5.5	S1.7	S1.9	S1.10	S1.12

Block 5 / Semester 3												
CU79107V1	**Title: Climate Proof Area Vision**					**Number of study credits: 5.0**		**Number of contact hours: 44**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: 'Netherlands 2150-day' (SG) in S1.1; Field trip to course related cases/sites												
Brief description of course content: In this project you will develop a vision for an European flood prone region. This policy document will be based on area analysis, desk research and scenarios. The course will be assessed on behalf of a report of your vision performed on the basis of the research circle, a digital presentation of your vision as group product and a supporting water balance.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		X			X	Paper assignment	7.1.1, 7.1.2, 7.1.3, 7.1.4 (table 3)	30%	5.5	S1.7	S1.9	S1.10	S1.12
TEST02 (VT)	X				X	Presentation	1.1.1, 1.2.1, 2.2.3 table 3)	50%	5.5	S1.8	S1.9	S1.10	S1.12
TEST03 (VT)			X	X		Portfolio	1.1.1, 1.1.3, 2.1.1, 2.1.2 (table 3)	20%	5.5	S1.4- S1.7	S1.9	S1.10	S1.12

Module 6 (DM): Adaptive Planning for Climate Change

Block 6 / Semester 3												
CU79030v1	**Title: Adaptive Planning Theory**					**Number of study credits: 3.0**		**Number of contact hours: 26**		**Mandatory**	**Teaching language: English**	
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: This course covers theories for planning and management for adaptation and mitigation. This will be explained via the application in the Dutch Delta program, taking into consideration the different socio-economic and cultural dimensions and the European context. This course prepares for the adaptive Climate Change Tender.												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*X*		Written knowledge test	2.1.1, 2.1.2, 4.1.1 (table 3)	100%	5.5	S1.18	S1.19	S1.20	S1.21

Block 6 / Semester 3												
CU79033v3	**Title: Data Visualisation**					**Number of study credits: 2.5**		**Number of contact hours: 22**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: In this course you will learn how to visualize data in a professional way. You will learn how to upgrade GIS maps into professional visuals by the use of Adobe Illustrator and display them in the digital environment of ArcGis storymaps . The course will be assessed by an digital portfolio												
Compulsory literature: For this course is ArcGIS Pro and Adobe Illustrator, running at macOS, Microsoft Windows or Linux, and the use of a non-desktop computer required.												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			*x*	*X*		Portfolio	6.1.2, 8.1.1 (table 3)	100%	5.5	S1.18	S1.19	S1.20	S1.21

Block 6 / Semester 3												
CU79105V1	**Title: Research Methodology**					**Number of study credits: 2.0**		**Number of contact hours: 18**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: This course covers the steps of the research cycle from the research proposal till writing your report. The report will be assessed with an assessment form and a peer assessment of your individual contribution to the group work.												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			*x*		*X*	Paper Assignment	7.1.2, 7.1.3, 7.1.4 (table 3)	100%	5.5	S1.17	S1.19	S1.20	S1.22

Block 6 / Semester 3												
CU20679v1	**Title: HZ Personality II**					**Number of study credits: 2.5**	**Number of contact hours: -**		**Mandatory**		**Teaching language: Dutch/English**	
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market.												
Compulsory literature: Not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*x*		Portfolio	9.1 (table 3)	100%	5.5	Variable	Variable	Variable	Variable

Block 6 / Semester 3												
CU79106V1	**Title: Climate Adaptive area request for proposal**					**Number of study credits: 5.0**		**Number of contact hours: 36**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: In this project you will enrol as team (your group) for a 'climate adaptive area request for proposal'. This request for proposal will be based on area analysis, desk research and theories for planning and management for adaptation and mitigation. The vision will be displayed in an request for proposal, a group product, which is supported by a calculated water system design. The request for proposal of the vision will be presented as a group product, assessed by the lecturers according to the completion criteria and individual oral examination.												
Compulsory literature:												

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		X			X	Paper Assignment	3.2.1, 5.1.1, 8.1.1, 8.2.1 (table 3)	30%	5.5	S1.17	S1.19	S1.20	S1.22
TEST02 (VT)	X			X		Presentation	6.1.1, 8.1.1, 8.2.2, 8.2.3, 9.2.2 (table 3)	40%	5.5	S1.18	S1.18	S1.20	S1.20
TEST03 (VT)			X	X		Portfolio	2.2.1, 3.1.1, 9.2.2 (table 3)	30%	5.5	S1.12 - S1.15	S1.19	S1.20	S1.22

Module 7 (DM) : Risk and Disaster Management

Block 7 / Semester 4					
CU79035v1	**Title: Spatial Planning for Deltaic Risks**	**Number of study credits: 3**	**Number of contact hours:22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: Within this module you will focus on vulnerabilities and risks present in delta areas in general and the Mississippi delta, USA specifically. You will learn which environmental, ecological, spatial and climate risks are present and how they relate to each other and to the social-economic and institutional risks. Furthermore, you will learn theories about planning for risks and disaster management.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.1, 1.1.3, 1.2.1 (table 3)	100%	5.5	S2.8	S2.9	S2.10	S2.11

Block 7 / Semester 4					
CU79036v1	**Title: Social and Economic Risks**	**Number of study credits: 3**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: Within this module you will learn about economic and socioeconomic risks for delta areas. You will learn about the economic and social risks of climate change. You will learn theories about disaster economics, economic value of ecosystem services and you will also get an introduction in system thinking. You will learn to look at these topics from different perspectives and apply your knowledge on cases, in particular the case of the Mississippi delta in Louisiana, USA.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.1, 1.1.3, 1.2.1 (table 3)	100%	5.5	S2.8	S2.9	S2.10	S2.11

Block 7 / Semester 4					
CU79037v1	**Title: Project & Process I**	**Number of study credits: 3**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: Within this module you will learn about risk analysis of delta areas. We will focus on the case of the Mississippi delta in Louisiana, USA. You will learn which social and institutional risks are present within deltas. You will learn theories about process management and design, actor- and stakeholder analysis, and governance.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.1, 1.1.3, 1.2.1 (table 3)	100%	5.5	S2.8	S2.9	S2.10	S2.11

Block 7 / Semester 4					
CU79038v1	**Title: Integrated Risk Assessment for Delta Areas**	**Number of study credits: 3.5**	**Number of contact hours:30**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: In this project you will execute a risk assessment of a certain area in the Mississippi delta. You will apply theories of risk and disaster management, ecosystem services, spatial analysis, process management and design, actor- and stakeholder analysis, governance, spatial economics and disaster economics. You will apply this knowledge in a group project. In this project you also have to apply the statistics, GIS and visualization skills you have obtained in previous modules and will further develop in this module. You will also reflect on your performance and development within a group and will be assessed on this.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x			x	Paper Assignment	1.1, 1.2.1, 2.2.3, 7.1.2, 8.1.1, (table 3)	75%	5.5	S2.7	S2.9	S2.10	S2.11
TEST01 (VT)	x	x		x		Criterion-based interview	8.2.1, 8.2.2, 9.1.1, 9.1.2, 9.1.3 (table 3)	25%	5.5	S2.8	S2.8	S2.10	S2.10

Block 7 / Semester 4					
CU20636v1	**Title: HZ Personality III**	**Number of study credits: 2.5**	**Number of contact hours: -**	**Mandatory**	**Teaching language: Dutch/ English**
Conditions for course participation: not applicable					
Conditions for test participation: Special condition for awarding study points (tick-box test)					
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market.					
Compulsory literature: not applicable					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	9.1 (table 3)	100%	5.5	Variable	Variable	Variable	Variable

Module 8 (DM): Strategic Planning for Resilient Deltas

Block 8 / Semester 4					
CU79097v1	**Title: Spatial Planning for Resilience**	**Number of study credits: 2**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Special condition for awarding study points (tick-box test): not applicable					
Brief description of course content: Within this course you will learn theories on resilience building, the different types of resilience (spatial, technical, ecological, etc.), levels of resilience as well as design qualities contributing to resilience. Next to that, spatial planning in the US context and strategy development for resilient deltas will be further explored.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	1.2.2, 1.3.1, 1.3.2 (table 3)	100%	5.5	S2.18	S2.19	S2.20	S2.21

Block 8 / Semester 4					
CU79098v1	**Title: Socioeconomic Resilience**	**Number of study credits: 2**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: Within this course you will learn about strategic planning for resilient deltas. We will focus on the case of the Mississippi delta in Lousiana, USA. You will learn theories on concepts of resilience, strategy development, economic thinking and system thinking, cost estimation and social cost and benefit analysis. You will have to apply your knowledge in the project and in a portfolio with a practical assignment/ small research.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	1.1.2, 1.2.2, 2.1.1, 3.1.1, 9.2 (table 3)	100%	5.5	S2.18	S2.19	S2.20	S2.21

Block 8 / Semester 4					
CU79100v1	**Title: Project & Process II**	**Number of study credits: 2**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: Within this module you will learn about risk analysis of delta areas. We will focus on the case of the Mississippi delta in Louisiana, USA. You will learn which social and institutional risks are present within deltas. You will learn theories about process management and design, actor- and stakeholder analysis, and governance.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	1.3.1, 1.3.2. 3.1.1 (table 3)	100%	5.5	S2.18	S2.19	S2.20	S2.21

Block 8 / Semester 4					
CU79099v1	**Title: Strategic Planning for Resilient Deltas**	**Number of study credits: 6.5**	**Number of contact hours: 66**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: Within this module you will learn about strategic planning for resilient deltas. We will focus on a case within the Mississippi delta in Lousiana, USA. You will learn to apply theories on resilience, spatial planning in the US context, strategy development, economic thinking and system thinking, project/process management and social cost and benefit analysis. You will apply this knowledge within an individual project where you work on a proposal for a competition to make a New Orleans more resilient. You will apply your visualisation, GIS and statistics skills in the project. You will develop your presentation skills to give a pitch for the proposal.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Paper Assignment	1.2.2, 1.3, 2.1, 2.2, 3.1, 3.2, 4.1, 5.1, 6.1.1, 7.1.2, 8.1, 8.2.3 (table 3)	75%	5.5	S2.17	S2.19	S2.20	S2.21
TEST01 (VT)	x			x		Presentation	2.2, 8.1.1 (table 3)	25%	5.5	S2.18	S2.19	S2.20	S2.21

Block 8 / Semester 4					
CU20673v1	**Title: HZ Personality IV**	**Number of study credits: 2.5**	**Number of contact hours: -**	**Mandatory**	**Teaching language: Dutch/ English**
Conditions for course participation: not applicable					
Conditions for test participation: Special condition for awarding study points (tick-box test)					
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market.					
Compulsory literature: not applicable					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	9.1 (table 3)	100%	5.5	Variable	Variable	Variable	Variable

SEMESTER 3 & 4 SPD

Module 5 (SPD): Vision Development

Block 5/ Semester 3					
CU79103V2	**Title: Principles of Data Analysis**	**Number of study credits: 2.5**	**Number of contact hours: 24**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: Student will learn to prepare data sets for analysis (data management), methods to summarize and describe a data set (descriptive analysis), basic methods to test for statistical significance, to visualise the data in a clear and concise way, and to answer research questions based on data.					
Compulsory literature: Excel 2007 or higher					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*	*x*	*x*		Portfolio	7.1.2	40%	4.0	S1.8	S1.9	S1.10	S1.12
TEST02 (VT)		*x*	*x*	*x*		Written knowledge test	6.1.1, 6.1.2	60%	5.5	S1.8	S1.9	S1.10	S1.12

Block 5 / Semester 3												
CU79025v1	**Title: Vision development theory**					**Number of study credits: 3.0**		**Number of contact hours: 26**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: This course covers theories about vision development. You will learn how to formulate a vision by using scenarios based on different uncertainties and driving forces. Furthermore, you learn about the management of these processes (embedded within the Environmental and Development Act), stakeholder participation and communication with different target groups.												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*X*		Written knowledge test	1.1.3 (table 3)	100%	5.5	S1.8	S1.9	S1.10	S1.11

Block 5 / Semester 3												
CU79055v3	**Title:** Climate change physics & effects					**Number of study credits: 2.5**		**Number of contact hours: 22**		**Mandatory**		**Teaching language: English**
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: This course covers the theories about the climate change physics and effects. You will learn the basic physics and calculations behind the climate change effects (drought, heat stress, floods and extreme precipitation) in Europe and their social and economic impact. Complementary to the aforementioned content you will learn and practice basic hydrology calculations.												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*X*		*X*		Written knowledge test	9.2.1.	100%	5.5	S1.8	S1.9	S1.10	S1.11

Block 5 / Semester 3												
CU79028v3	**Title: Advanced GIS**					**Number of study credits: 2.0**	**Number of contact hours: 18**	**Mandatory**	**Teaching language: English**			
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: In this course is the follow up of the 'introduction into GIS course'. You will learn how to conduct a raster, vector and a DEM analysis, with the uses ARC GIS Pro software. By realizing a flood impact analysis of a flood prone area. Course will be assessed by a portfolio test in week 7 of semester 1.												
Compulsory literature: for this course is ARC GIS Pro, running under HZ licence at MacOS, Microsoft Windows or Linux, and the use of a non-desktop computer required.												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			*X*	*X*		Portfolio	1.1.1, 6.1.1	100%	5.5	S1.7	S1.9	S1.10	S1.12

Block 5 / Semester 3						
CU79104V1	**Title: Climate Proof Spatial Vision**	**Number of study credits: 5.0**	**Number of contact hours: 44**	**Mandatory**	**Teaching language: English**
Conditions for course participation: Not applicable					
Conditions for test participation: 'Netherlands 2150-day' (SG) in S1.1; Field trip to course related cases/sites; Minimal of 80% attendance required to do TEST02 and TEST03.					
Brief description of course content: In this project you will develop as a design team a vision for an urbanized European flood prone region. This distinctive vision will be based on site visit, area analysis, desk research and spatial scenarios. The vision will be developed by the use of a multilayer based approach. The maps will be elaborated by use of GIS, visualization. The vision will be displayed in a paper, a group product, and underpinned by the knowledge of the courses of the previous modules. The course will be assessed on behalf of a paper of your vision performed on the basis on research, a digital presentation of your vision as group product and a supporting water balance.					
Compulsory literature:					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		X			X	Paper Assignment	7.1.1, 7.1.2, 7.1.3, 7.1.4 (table 3)	30%	5.5	S1.7	S1.9	S1.10	S1.12
TEST02 (VT)	X				X	Presentation	1.1.1, 1.2.1, 2.2.3 table 3)	50%	5.5	S1.8	S1.9	S1.10	S1.12
TEST03 (VT)			X	X		Portfolio	1.1.1, 1.1.3, 2.1.1, 2.1.2 (table 3)	20%	5.5	S1.4- S1.7	S1.9	S1.10	S1.12

Module 6 (SPD): Adaptive Planning for Climate Change

Block 6 / Semester 3					
CU79030v1	**Title: Adaptive Planning Theory**	**Number of study credits: 3.0**	**Number of contact hours: 26**	**Mandatory**	**Teaching language: English**
Conditions for course participation: Not applicable					
Conditions for test participation: Not applicable					
Brief description of course content: This course covers theories for planning and management for adaptation and mitigation. This will be explained via the application in the Dutch Delta program, taking into consideration the different socio-economic and cultural dimensions and the European context. This course prepares for the adaptive Climate Change Tender.					
Compulsory literature:					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*X*		Written knowledge test	2.1.1, 2.1.2, 4.1.1 (table 3)	100%	5.5	S1.18	S1.19	S1.20	S1.21

Block 6 / Semester 3					
CU79033v3	**Title: Data Visualisation**	**Number of study credits: 2.5**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: Not applicable					
Conditions for test participation: Not applicable					
Brief description of course content: In this course you will learn how to visualize data in a professional way. You will learn how to upgrade GIS maps into professional visuals by the use of Adobe Illustrator and display them in the digital environment of ArcGis storymaps . The course will be assessed by an digital portfolio					
Compulsory literature: For this course is ArcGIS Pro and Adobe Illustrator, running at macOS, Microsoft Windows or Linux, and the use of a non-desktop computer required.					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			*x*	*X*		Portfolio	6.1.2, 8.1.1 (table 3)	100%	5.5	S1.18	S1.19	S1.20	S1.21

Block 6 / Semester 3												
CU79105V1	**Title: Research Methodology**					**Number of study credits: 2.0**	**Number of contact hours: 18**	**Mandatory**	**Teaching language: English**			
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: This course covers the steps of the research cycle from the research proposal till writing your report. The report will be assessed with an assessment form and a peer assessment of your individual contribution to the group work.												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)			*x*		*x*	Paper Assignment	7.1.2, 7.1.3, 7.1.4 (table 3)	100%	5.5	S1.17	S1.19	S1.20	S1.22

Block 6 / Semester 3												
CU20679v1	**Title: HZ Personality II**					**Number of study credits: 2.5**	**Number of contact hours: -**		**Mandatory**		**Teaching language: Dutch/English**	
Conditions for course participation: Not applicable												
Conditions for test participation: Not applicable												
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market.												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*x*		Portfolio	9.1 (table 3)	100%	5.5	Variable	Variable	Variable	Variable

Block 6 / Semester 3												
CU79108V1	**Title: Strategic spatial interventions**					**Number of study credits: 5.0**	**Number of contact hours: 36**		**Mandatory**		**Teaching language: English**	
Conditions for course participation: Not applicable												
Conditions for test participation: Minimal of 80% attendance required to do TEST01 and TEST02.												
Brief description of course content: In this project you will individually elaborate your vision for an urbanized European flood prone region. You will elaborate your intervention within the framework of your Climate Proof Spatial Vision into an integrated spatial proposal with impact on different themes and scale levels. The interventions shows how the area will be more climate adaptive and biodiverse in combination with relevant spatial challenges. The vision will be displayed in a design, an individual product, which is underpinned by the knowledge of the previous courses.												
Compulsory literature:												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	X			X		Presentation	3.2.1, 5.1.1, 6.1.1, 8.1.1, 8.2.1, 8.2.2, 8.2.3, 9.2.2 (table 3)	70%	5.5	S1.18	S1.18	S1.20	S1.20
TEST02 (VT)			X	X		Portfolio	2.2.1, 3.1.1, 9.2.2 (table 3)	30%	5.5	S1.12 - S1.15	S1.19	S1.20	S1.22

Module 7 (SPD) : Risk and Disaster Management

Block 7 / Semester 4					
CU79035v1	**Title: Spatial Planning for Deltaic Risks**	**Number of study credits: 3**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: Within this module you will focus on vulnerabilities and risks present in delta areas in general and the Mississippi delta, USA specifically. You will learn which environmental, ecological, spatial and climate risks are present and how they relate to each other and to the social-economic and institutional risks. Furthermore, you will learn theories about planning for risks and disaster management.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.1, 1.1.3, 1.2.1 (table 3)	100%	5.5	S2.8	S2.9	S2.10	S2.11

Block 7 / Semester 4					
CU79095v1	**Title: Social Systems Risks**	**Number of study credits: 3**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: Within this course you will learn the basics about economic and socioeconomic risks in delta areas. You will learn about the economic and social risks of climate change. You will learn to identify process related risks that have impact on the feasibility of your project in the Mississippi delta.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.1.1, 1.1.3, 1.2.1 (table 3)	100%	5.5	S2.8	S2.9	S2.10	S2.11

Block 7 / Semester 4					
CU79096v1	**Title: Design Methodologies I**	**Number of study credits: 3**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: In this course you will explore a variety of design methodologies and you will learn for what design assignments you can apply the different methodologies. During the lessons we will explain the pros and cons of diverse design methodologies. You will practice the different methodologies and will be assessed with a portfolio, in which you demonstrate your ability to apply the different methodologies.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x		x	x		Portfolio	7.1.1, 7.1.3 (table 3)	100%	5.5	S2.8	S2.9	S2.10	S2.11

Block 7 / Semester 4					
CU79038v1	**Title: Integrated Risk Assessment for Delta Areas**	**Number of study credits: 3.5**	**Number of contact hours:30**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: In this project you will execute a risk assessment of a certain area in the Mississippi delta. You will apply theories of risk and disaster management, ecosystem services, spatial analysis, process management and design, actor- and stakeholder analysis, governance, spatial economics and disaster economics. You will apply this knowledge in a group project. In this project you also have to apply the statistics, GIS and visualization skills you have obtained in previous modules and will further develop in this module. You will also reflect on your performance and development within a group and will be assessed on this.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x			x	Paper Assignment	1.1, 1.2.1, 2.2.3, 7.1.2, 8.1.1 (table 3)	75%	5.5	S2.7	S2.9	S2.10	S2.11
TEST01 (VT)	x	x		x		Criterion-based interview	8.2.1, 8.2.2, 9.1.1, 9.1.2, 9.1.3 (table 3)	25%	5.5	S2.8	S2.8	S2.10	S2.10

Block 7 / Semester 4					
CU20636v1	**Title: HZ Personality III**	**Number of study credits: 2.5**	**Number of contact hours: -**	**Mandatory**	**Teaching language: Dutch/ English**
Conditions for course participation: not applicable					
Conditions for test participation: Special condition for awarding study points (tick-box test)					
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market.					
Compulsory literature: not applicable					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	9.1 (table 3)	100%	5.5	Variable	Variable	Variable	Variable

Module 8 (SPD): Strategic Planning for Resilient Deltas

Block 8 / Semester 4					
CU79097v1	**Title: Spatial Planning for Resilience**	**Number of study credits: 2**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Special condition for awarding study points (tick-box test): not applicable					
Brief description of course content: Within this course you will learn theories on resilience building, the different types of resilience (spatial, technical, ecological, etc.), levels of resilience as well as design qualities contributing to resilience. Next to that, spatial planning in the US context and strategy development for resilient deltas will be further explored.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	1.2.2, 1.3.1, 1.3.2 (table 3)	100%	5.5	S2.18	S2.19	S2.20	S2.21

Block 8 / Semester 4					
CU79102v1	**Title: Design Methodologies II**	**Number of study credits: 3**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: This course is an elaboration of the previous methodology course, in which you have explored different design methodologies. In this course we will analyze the variety of methodology in depth. You will learn how scales of interventions and the phase in which the design is affect which methodology is the most suitable. You will practice with designing your own methodology. This course will be assessed with a portfolio.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)	x		x	x		Portfolio	7.1.4 (table 3)	100%	5.5	S2.8	S2.9	S2.10	S2.11

Block 8 / Semester 4					
CU79101V1	**Title: Integrated Spatial Water Plan**	**Number of study credits: 7.5**	**Number of contact hours: 30**	**Mandatory**	**Teaching language: English**
Conditions for course participation: not applicable					
Conditions for test participation: not applicable					
Brief description of course content: With a (strategic) spatial plan for an urbanized delta region, you propose concrete water-related design solutions as part of an integrated approach for resilient, liveable and attractive delta regions in the future.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Paper Assignment	1.1.3, 1.2, 1.3, 2.1, 2.2, 3.1, 3.2, 4.1, 8.1, 8.2, 9.2 (table 3)	75%	5.5	S2.17	S2.19	S2.20	S2.21
TEST01 (VT)	x			x		Presentation	2.2, 8.1.1 (table 3)	25%	5.5	S2.18	S2.19	S2.20	S2.21

Block 8 / Semester 4					
CU20673v1	**Title: HZ Personality IV**	**Number of study credits: 2.5**	**Number of contact hours: -**	**Mandatory**	**Teaching language: Dutch/ English**
Conditions for course participation: not applicable					
Conditions for test participation: Special condition for awarding study points (tick-box test)					
Brief description of course content: Being able to self-direct your own development is a crucial skill that the future field of work and rapidly changing society demands from you. Moreover, it is important that you have the opportunity to work on your personal goals, so you can personalize your study Water Management. In this way we want to give you the opportunity to gain experiences, so that you can learn about your identity, can form new relationships with others and to learn about ways you would like to add value to the world. You can also work with HZ Personality on skills that will allow you to distinguish yourself in the labour market.					
Compulsory literature: not applicable					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Portfolio	9.1 (table 3)	100%	5.5	Variable	Variable	Variable	Variable

SEMESTER 5 or 6 (AET & DM & SPD)

Semester 5 or 6					
CU11022v14	**Title: Orienting work placement / internship**	**Number of study credits: 30**	**Number of contact hours:10**	**Mandatory Yes**	**Teaching language: English/Dutch**

Conditions for course participation:
See article 2.2.8 in this document for the rules of admission to the internship.

Conditions for test participation:
Not applicable

Brief description of 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).

Compulsory literature: -

Test code	Format					Assessment type	Content	Weighting Factor (%)	Minimum score	Planning test in week	Inspection of work in week	Resit scheduled in week	Inspection of resit in week
	V	W	O	I	G								
TEST01 (VT)		*x*		*x*		Portfolio	8, 9 and 2 times a choice out of 1-6 (Table 3)	100%	5.5	S1.18 S2.18	S1.19 S2.19	S1.20 S2.20	S2.1 S2.21

SEMESTER 5 or 6 (AET & DM & SPD)

Semester 5 or 6		
Title: Minor	**Number of study credits: 30EC**	**Mandatory: Yes**
Conditions for course participation: See article 2.2.9 in this document for the rules of admission to the minor.		
Brief description of course content: For information on available minors and application process see the HZ Learn Page: Minor Offer and Registration		

SEMESTER 7 (AET)

Block 13 & 14 / Semester 7												
CU79085V1	**Title: Integrated coastal challenge**					**Number of study credits: 10**	**Number of contact hours: 60**	**Mandatory**	**Teaching language: English**			
Conditions for course participation: -												
Conditions for test participation: -												
Brief description of course content: In this course, you will develop abilities to work in a multidisciplinary environment. You will work in a group with colleagues from different study programs. The coastal challenge is based on a complex real-life case of a client. It uses the principles of integrated coastal zone management as a framework. You will initiate and design the project and also learn and apply tools for communication, collaboration, management, and innovation.												
Compulsory literature: -												
Test code	**Format**					**Description and assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*x*		Assessment professional development (Portfolio)	8, 9 (table 3)	40%	5.5	S1.19	S1.19	S1.20	S2.2
TEST02 (VT)		*x*			*x*	End products (Portfolio)	1, 2, 3, 7, 8 (table 3)	40%	5.5	S1.17	S1.18	S1.19	S1.20
TEST03 (VT)	*x*				*x*	Presentation	8, 9 (table 3)	20%	5.5	S1.18	S1.19	S1.20	S2.2

Block 13 & 14 / Semester 7					
CU20700v1	**Title: Advanced Water Technology**	**Number of study credits: 10.0**	**Number of contact hours: 90**	**Elective**	**Teaching language: English**

Conditions for course participation:

- The course will only be given if at least 8 students subscribe for this elective course
- Propedeutic exam passed
- At least 120 EC obtained (including provisional credits)
- Internship OR Minor passed
- AET applicants should have completed and passed AET course: Water Pollution and Treatment (CU20593)
- Civil Engineering applicants should have a biology and chemistry profile from high school and should have completed CE course: Sanitary Engineering (CU23880) with a pass grade of 7.5 or higher.
- Civil Engineering applicants should register for the course by the end of May 2022 by contacting their study career coach

Conditions for test participation: not applicable

Brief description of course content:

This course will build on the students' existing basic knowledge of wastewater treatment theory and technologies used. During this course the student will learn to determine what water quality measurements are needed for a specific water source and desired water product and they will be able to set up a water treatment scheme to treat the water from quality A (source) to quality B (product). Once they have set up a theoretical treatment scheme, they will also learn how to calculate the water balance, water recovery and how to monitor the system on main performance parameters, including statistical analysis and optimisation.

Compulsory literature: not applicable

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*x*		Concepts of Advanced Water Technology Portfolio	1.1, 6.1 (Table 1)	25%	5.5	S1. Wk 39-3	S1. Wk 39-3	S1. Wk 39-5	S1. Wk 39-5
TEST02 (VT)		*x*		*x*	*x*	Applications of Advanced Water Technology portfolio	1.2, 1.3, 2.1, 3.1, 7.1 (Table 1)	50%	5.5	S1. Wk 39-3	S1. Wk 39-3	S1. Wk 39-5	S1. Wk 39-5
TEST03 (VT)			*x*	*x*	*x*	Advanced Water Technology in Practice Portfolio	1.1, 7.2 (Table 1)	25%	5.5	S1. Wk 39-3	S1. Wk 39-3	S1. Wk 39-5	S1. Wk 39-5

Block 13 & 14 / Semester 7					
CU79044v1	**Title: Ecological Risk Assessment**	**Number of study credits: 10**	**Number of contact hours: 70**	**Elective**	**Teaching language: English**

Conditions for course participation:

- The course will only be given if at least 8 students subscribe for this elective course
- Propaedeutic exam passed
- At least 120 EC obtained (including provisionary credits)
- Internship OR Minor passed

Conditions for test participation: To be allowed to participate in TEST04 (VT) approval of the literature review is required

Brief description of 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 analyse 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 behaviour 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. You will learn what guiding principles are in environmental policy on different levels (UN, EU, national, regional) and what legal policy instruments are, which are used in practise. For the legal instrument environmental impact assessment (EIA) you will go through the whole procedure of an impact assessment, in different roles by means of a case study. In such a way you learn the pro's and con's of EIA.

Compulsory literature: *Ecotoxicology Essentials Environmental Contaminants and Their Biological Effects on Animals and Plants*, 1st Edition - April 15, 2016

- Author: Donald Sparling
- Paperback ISBN: 9780128019474
- eBook ISBN: 9780128019610

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*X*		mid-term Ecotoxicology (I) written knowledge test	1.1, 1.3, 5.1, 7.2 (table 1)	30%	5.5	S1.8	S1.9	S1.10	S2.1
TEST02 (VT)		*x*		*X*		Portfolio (G)	2.1, 3.1, 4.1 , 6.1, 7.3 (table 1)	25%	5.5	S1.17	S1.18	S1.19	S1.20
TEST03 (VT)		*x*		*X*		Report: Environmental Impact Assessment (G) Assignment	2.1, 2.2, 3.1, 6.1, 7.2, 8.2, 9.2 (table 1)	30%	5.5	S1.17	S1.19	S1.20	S2.1
TEST04 (VT)	*x*				*x*	Poster presentation	1.1, 7.1, 7.2 (table 1)	15%	5.5	S1.7	S1.7	S1.9	S2.1

Block 13 & 14 / Semester 7					
CU79043V1	**Title: Aquaculture**	**Number of study credits:10**	**Number of contact hours:88**	**Elective**	**Teaching language: English**

Conditions for course participation:

- The course will be given only if at least 8 students subscribe to this elective course
- Propaedeutic exam passed
- At least 120 EC obtained (including provisionary credits)
- Internship or minor passed
- Excursions: participation is mandatory

Conditions for test participation: Not applicable

Brief description of course content:

This introductory course to aquaculture is an elective course, in which the focus will primarily be on the cultivation of saltwater organisms and the setup of an aquaculture business case. More and more shellfish and fish, crops like Salicornia, and also for instance ragworms are being cultivated under controlled circumstances. There is also a large sector still cultivating in natural areas, which brings its own challenges. 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, both in the Netherlands as well as globally. 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. In addition you will get a taste for cost price calculations, how to make a financial business plan, and how to bring your chosen product to the market.

Compulsory literature:

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*X*		Written knowledge test	1.1, 1.2, 7.2	25%	5.5	S1.18	S1.19	S1.20	S1.22
TEST02 (VT)		*x*			*X*	Paper assignment	2.1, 2.2, 3.1, 7.3, 8.1, 8.2, 8.3, 9.5, 9.6	40%	5.5	S1.18	S1.19	S1.20	S1.22
TEST03 (VT)		*X*			*x*	Paper Assignment	1.3, 2.2, 5.1, 8.2, 8.3	25%	5.5	S1.13	S1.15	S1.19	S1.21
TEST04 (VT)	*x*				*x*	Presentation	1.1, 1.2, 1.3, 8.4	10%	5.5	S1.15	S1.16	S1.19	S1.21

Block 13 & 14 / Semester 7 for four year track only (240 EC)					
CU79087V1	**Title: Urban Water Management**	**Number of study credits: 10**	**Number of contact hours: 70**	**Elective**	**Teaching language: English**
Conditions for course participation: The course will only be given if at least 10 students subscribe for this elective course					
Conditions for test participation: -					
Brief description of course content: : Sewer systems are critical infrastructures from technical, environmental and management viewpoints. The course takes advantage of this scenario to develop several cross-discipline and transferable skills. About 60% of the course focuses on sewer systems design, from the calculation of wastewater and rainwater input to the sizing of the ducts and the pumping stations. This requires applying the theory proactively and tailoring the solution to the particular case study, as the design cannot rely on comprehensive manuals such as the Eurocode. Proper design, construction and functioning of sewer systems are crucial in order to avoid pollution of soil and water. The remaining 40% of the course deals with management and maintenance, which is complicated due to the infrastructure being underground and prone to deteriorating. You will learn how to apply Asset Management skills, from the underlying way of thinking to technical in-depth knowledge on how to recover aging infrastructures. The best Engineers have knowledge about all aspects of the complete life cycle of infrastructure. This course has been developed in cooperation with the asset management research group of HZ and external experts from the professional field.					
Compulsory literature: -					

Test code	**Format**					**Description and assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*			*x*	Portfolio sewer systems design (Portfolio)	1.1, 2.1, 3.1, 7.2, 8.1 (table 1)	30%	5.5	S1.08	S1.09	S1.10	S1.11
TEST02 (VT)		*x*			*x*	Portfolio asset management (Portfolio)	1.1, 1.3, 4.1, 5.1, 8.2, 9.2 (table 1)	30%	5.5	S1.18	S1.19	S1.20	S2.2
TEST03 (VT)		*x*		*x*		Final exam (Written knowledge test)	1.1, 1.3, 2.1, 2.2, 3.1, 4.1, 5.1 (table 1)	40%	5.5	S1.18	S1.19	S1.20	S2.2

SEMESTER 7 (DM)

Block 13 & 14 / Semester 7												
CU79085V1	**Title: Integrated coastal challenge**					**Number of study credits: 10**		**Number of contact hours: 60**		**Mandatory**	**Teaching language: English**	
Conditions for course participation: -												
Conditions for test participation: -												
Brief description of course content: In this course, you will develop abilities to work in a multidisciplinary environment. You will work in a group with colleagues from different study programs. The coastal challenge is based on a complex real-life case of a client. It uses the principles of integrated coastal zone management as a framework. You will initiate and design the project and also learn and apply tools for communication, collaboration, management, and innovation.												
Compulsory literature: -												
Test code	**Format**					**Description and assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		*x*		*x*		Assessment professional development (Portfolio)	8, 9 (table 3)	40%	5.5	S1.19	S1.19	S1.20	S2.2
TEST02 (VT)		*x*			*x*	End products (Portfolio)	1, 2, 3, 7, 8 (table 3)	40%	5.5	S1.17	S1.18	S1.19	S1.20
TEST03 (VT)	*x*				*x*	Presentation	8, 9 (table 3)	20%	5.5	S1.18	S1.19	S1.20	S2.2

Block 13 / Semester 7					
CU79047v1	**Title: Mekong delta - integrated area and system analysis**	**Number of study credits: 2,5**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**

Conditions for course participation:
- Propaedeutic exam passed
- At least 120 EC obtained (including provisional credits)
- Internship OR Minor passed

Conditions for test participation: not applicable

Brief description of course content: In this course an integrated area and system analysis of an area in the Vietnamese Mekong Delta will be conducted. This analysis will be used to develop relevant scenarios for a more circular development of this delta.

Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x			x	Paper Assignment	1.1, 1.2, 1.3, 7.1, 7.2, 7.3, 8.2, 8.3, 8.4, 9.3, 9.3, 9.5, 9.6 (table 2)	100%	5.5	S1.7	S1.8	S1.9	S1.10

Block 13 / Semester 7					
CU79048v1	**Title: Spatial planning for circularity**	**Number of study credits: 2,5**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**

Conditions for course participation:
- Propaedeutic exam passed
- At least 120 EC obtained (including provisional credits)
- Internship OR Minor passed

Conditions for test participation: not applicable

Brief description of course content: The course Spatial planning for circularity consists of three mayor components in the context of the Vietnamese Mekong delta: • Designing with ecosystem services (mangroves, sedimentation and erosion, salinization, etc.)• Planning for spatial resilience: methods the Vietnamese society has developed for planning and managing the Mekong delta conditions and how to adapt the VMD to the spatial and ecological challenges of climate change • Planning for circularity: flow charts, (urban0 metabolism planning, landscape as contributing force for organising circular processes

Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	2.1, 2.2, 3.3, 4.1, 7.2, 9.2 (table 2)	100%	5.5	S1.8	S1.9	S1.10	S1.11

Block 13 / Semester 7					
CU79049v1	**Title: Delta Economics III**	**Number of study credits: 2,5**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**

Conditions for course participation:
- Propaedeutic exam passed
- At least 120 EC obtained (including provisional credits)
- Internship OR Minor passed

Conditions for test participation: not applicable

Brief description of course content: In the course Delta Economics 3 you learn to analyse the economic system of the Vietnamese Mekong delta. We will look at value chains and making value chains more sustainable and equal. You will also look at economic systems and forces, economic policies and global trends in economic development and thinking. Concepts of circular economy will be discussed and latest debate on how to shift towards sustainable economic solutions for climate resilience and circular development.

Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST01 (VT)		x		x		Written knowledge test	1.2, 1.3, 2.2, 3.1, 6.1 (table 2)	100%	5.5	S1.8	S1.9	S1.10	S1.11

Block 13 / Semester 7					
CU79050v1	**Title: Delta Management**	**Number of study credits: 2,5**	**Number of contact hours: 22**	**Mandatory**	**Teaching language: English**
Conditions for course participation: • Propaedeutic exam passed • At least 120 EC obtained (including provisional credits) • Internship OR Minor passed					
Conditions for test participation: not applicable					
Brief description of course content: In the course Delta Management you learn about project and process management and adaptive planning in an international context, dealing with uncertainties and cultural differences.					
Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures					

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST 01 (VT)		x		x		Written knowledge test	1.1, 1.2, 1,3, 2,2, 3.2 (table 2)	100%	5.5	S1.8	S1.9	S1.10	S1.11

Block 14 / Semester 8					
CU79051v1	**Title: Mekong project**	**Number of study credits: 10**	**Number of contact hours: 95**	**Mandatory**	**Teaching language: English**

Conditions for course participation:
- Propaedeutic exam passed
- At least 120 EC obtained (including provisional credits)
- Internship OR Minor passed
- CU79048v1 participated

Conditions for test participation: not applicable

Brief description of course content: In this course a regenerative landscape needs to be developed for an area in the Vietnamese Mekong delta, based on the system analysis in module 13. This regenerative landscape should be implemented on the regional scale, preferably improve a current negative landscape feature, contribute to the overall climate resilience and the circular economy of the province. Next to that your solution should fit within the Vietnamese/Mekong delta policies and culture. You will learn about using the landscape as driving force for metabolism optimization and economic development in delta areas and you will learn how to manage the realisation, maintenance, monitoring and evaluation of projects and programmes. You will also learn to specify feasibility, practicability and sustainability, social costs and benefits and funding options. The form for the assignment will be an international tender.

Compulsory literature: literature in the form of articles, policy documents and book chapters will be handed out during the lectures

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST 01 (VT)		x				Paper Assignment	2.1, 2.2, 3.1, 3.2, 3.3, 4.1, 5.1, 6.1, 7.1, 7.2, 8.2, 8.4, 9.6 (table 2)	75%	5.5	S1.17	S1.18	S1.19	S1.20
TEST 02 (VT)	x	x				Presentation	8.1, 8.2, 8.4, 9.2 (table 2)	25%	5.5	S1.18	S1.19	S1.20	S1.20

SEMESTER 8 (AET & DM)

Block 1,2,3,4 / Semester 1,2												
CU11020v12	**Title: Final thesis Water Management**					**Number of study credits: 30.**		**Number of contact hours:**		**Mandatory**	**Teaching language: English**	
Conditions for course participation: • have obtained at least 175 EC (150 EC for 180 EC programme) when starting the graduation study period; • have obtained 210 study points (150 EC for 180 EC programme), before the graduation study report is submitted for assessment, as defined in the course program; • carry out the graduation project at an organisation within the Aquatic Eco technology field of expertise (AET track students) or Delta Management field of expertise (DM track students)												
Conditions for test participation: To be allowed to participate in TEST01(VT) approval of the research proposal, the research report and the portfolio is required.												
Brief description of course content: See graduation manual.												
Compulsory literature: not applicable												
Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST 01 (VT)	*x*			*x*		Criterium referenced interview	AET: 7.1, 8.1 (table 3) DM: 7.1, 8.1, 9.2 (table 3)	50%	5.5	S1.19 S2.19-20	S1.19 S2.19-20	S2.19-20 S2. HZ Annual Timetable, week 28 and 29	S2.19-20 S2. HZ Annual Timetable, week 28 and 29
TEST 02 (VT)		*x*		*x*		Portfolio	AET: 1.1, 1.2, 1.3, 2.1, 2.2, 6.1, 7.1, 8.1, 8.2 (table 3) DM: 1.1, 1.2, 1.3, 2.1, 2.2, 3.1, 3.2, 7.1, 8.1, 8.2, 9.1, 9.2 (table 3)	50%	5.5	S1.19 S2.19-20	S1.19 S2.19-20	S2.19-20 S2. HZ Annual Timetable, week 28 and 29	S2.19-20 S2. HZ Annual Timetable, week 28 and 29

SOU PROGRAM (AET)

SOU program Feb-Jul Year 1 + Aug – Feb Year 2					
CU22551V1	**Title: Gaining professional competences**	**Number of study credits: 30**	**Number of contact hours: 200**	**Mandatory**	**Teaching language: English**

Conditions for course participation:
Admitted to the SOU WM Track

Conditions for test participation:
see 2.1.6 Admission of students coming from SOU

Brief description of course content:
In this part of your study you will gain professional competences as a water manager. You always have to deal with real practical assignments as part of your study, these are very different from most of the study assignments, however context-rich they sometimes may be. The course 'Gaining professional competences' gives a look at how things go in practice. You will work on building a relevant network and act representative for the water management sector. During this course you will gain at least the following competences:
8. Communicate and collaborate
8.1 Presenting
8.2 Reporting
8.3 Collaborating
8.4 Interacting appropriately in an international professional context
9. Coordinate and innovate
9.1 Developing self-motivation skills
9.2 Critical, methodological and analytical thinking
9.3 Creating a learning environment
9.4 Acquiring study skills
9.5 Learning to work together
9.6 Planning
These competences are vital to prepare yourself for instance on your graduation internship. 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 have not done things, and yield a portfolio. You will be assessed on the basis of your portfolio which tracks your learning process and progress.

Compulsory literature: *Aquatic Systems*

Test code	**Format**					**Assessment type**	**Content**	**Weighting Factor (%)**	**Minimum score**	**Planning test in week**	**Inspection of work in week**	**Resit scheduled in week**	**Inspection of resit in week**
	V	**W**	**O**	**I**	**G**								
TEST 01 (VT)	*x*	*x*		*x*		Portfolio	2 x choice 1.1 to 6.1 including, 8.1-8.4, 9.1-9.6	100%	5.5	S1.14	S1.16	S1.18	S1.20

2.2.6 ***HZ Personality*** (article 3.12 CER HZ Ba ft)

The curriculum reserves 10 study credits (ECTS) for HZ Personality. HZ Personality is spread over the curriculum as much as possible. With this learning pathway, HZ gives students space to personalize their own development during their studies, increases the possibilities for domain-transcending exploration and stimulates broad social engagement. See for a description of the HZ Personality courses within the Water Management program the tables above: CU20676 (2,5 EC), CU20679 (2,5 EC), CU20636 (2,5 EC) and CU20673 (2,5 EC).

2.2.7 ***Specialisations*** (article 3.10 CER HZ Ba ft)

At the end of semester 1 of the study program students have to choose between the graduation study track Aquatic Eco Technology (AET) or Delta Management (DM) or Spatial Planning & Design (SPD). The study career coach supports in the decision making process as does the course Professional Development . The choice for either AET, DM or SPD must be submitted to the study career coach, latest 15th of December. It is allowed to follow two study tracks after consultation and approval by the study program coordinator and study career coach. During the 2nd semester it is still possible to switch between study tracks, if necessary. After the 1st year it is not possible anymore to change study tracks, unless there are compelling reasons which are discussed with and approved by the study program coordinator.

2.2.8 ***Internship*** (article 3.9 CER HZ Ba ft)

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

- The student must have an approved and signed work placement contract before the start of the internship.
- 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 to 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 modules of internship is allowed. If the student has more than 15 EC of resits in the simultaneous running modules of the internship, the student is not allowed to attend the internship abroad since this will cause difficulties in attending the resits.

The internship manual 2022-2023, with the content of the internship, the internship process and evaluation of the internship, can be found on Learn.

2.2.9 ***Minor*** (article 3.8 CER HZ Ba ft)

Students who want to take part in the minor of the study program must meet the following conditions:

- The propaedeutic exam has to be passed and at least 30 EC of the main phase have to be obtained.
- Students are obliged to choose a minor that is offered by the HZ. The list of minors and further explanation about admission can be found on the HZ Learn page: Minor offer and registration.
- Students have the possibility to participate in a minor at another institution in the Netherlands if the minor is on the list www.kiesopmaat.nl , or students can study abroad. In both cases students need to ask permission from the DEX and they need to do that beforehand.
- The goal of the minor is to broaden and deepen the knowledge and skills of the students. Therefore the minor has to fit in the study program and has to add to the study career of the students.
- The language of the minor is depending on the choice the student makes and can differ from the table in 2.2.3.

Additional conditions for a minor abroad (outside the Netherlands):

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

2.2.10 ***Participation in international exchange programme*** (article 4.5 CER HZ Ba ft)
There are no additional conditions of participation besides the conditions stated in article 4.5 of the CER HZ.

2.2.11 ***Graduation*** (article 3.9 CER HZ Ba ft)

In order to participate in the Water Management program graduation phase, students must:

- have obtained at least 175 EC (including the propaedeutic exam and provisional credits) from the first-year phase and main phase when starting the graduation study period;
- have obtained 210 EC (including provisional credits) from the first year phase and main phase, before the graduation defence takes place for assessment, as defined in the course program;
- carry out the graduation project at an organization within the Water Management field of expertise.

More information (dates, deadlines, acquiring an internship, evaluation, etc.) is provided on Learn: Graduation Water Management 2022-2023 (the graduation manual of the study year you started your graduation is applicable; if it is not on Learn, ask your Study Career Coach).

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

2.2.12 Transition arrangement (art. 6.2 paragraph 11 HZ CER)

The study program is being optimized each year and as a result new courses are being developed and other courses are being discontinued. This year there has been a shift in the name and course codes of year 1 block 3 DM and SPD and of year 2 block 1&2 DM and SPD. These changes will be explained to students by the SCC (and see the conversion table below).

The following rules are in play:

1. In general students have the right to take exams in courses no longer offered in the study program, during the study year following the year in which the course still was part of the study program. The exams and resits will be planned in the exam and resit weeks of the program Water Management in the study year 2022-2023, unless agreed differently with the students.
2. Without taking away from point 1, the result of such an exam taken in 2022-2023 will be registered with the exams of the study year in which the student took the exam in the first place.
3. Compared to 2021-2022 changes have been made in the exam matrixes of some courses. This entails weight, sum and/or format of exams, and placement of exams in other courses. Without taking away from point 1, the responsible examiners determine which exams students need to take during 2022-2023 to be able to meet the requirements for the exams from the year 2021-2022. As a result students cannot request to take the exact same exam as the one taken in the year 2021-2022.
4. In cases that these rules do not suffice, study career coaches, study program coordinator and Exam Board together determine the effective alternative to be able to meet all requirements. In case it is necessary to resort to an extra attempt to pass an exam, the Exam Board needs to officially approve.

Conversion table 2022-2023

Block 2 AET & DM & SPD 2021-2022			**Module 2 AET & DM & SPD 2022-2023**			
Course	**Course code**	**EC**	**Course**	**Course Code**	**EC**	**Remarks**
Academic Reading for Delta	CU04206V13	2,5	Academic Reading for Delta	CU04206V14	2,5	
Block 3 DM & SPD						
Course	**Course code**	**EC**	**Course**	**Course Code**	**EC**	**Remarks**
Introduction Social Geography	CU79079V1	2,5				In block 3 format 2021-2022
Block 5 AET 2021-2022			**Block 5 AET 2022-2023**			
Course	**Course code**	**EC**	**Course**	**Course Code**	**EC**	**Remarks**
Principles of Data Analysis	CU79103V1	2,5	Principles of Data Analysis	CU79103V2	2,5	
Block 5 DM&SPD 2021-2022			**Block 5 DM & SPD 2022-2023**			
Course	**Course code**	**EC**	**Course**	**Course Code**	**EC**	**Remarks**
Research methodology I	CU79026V2	2,5				In block 5 format 2021-2022
Statistical Data Analysis I	CU79027V2	1				In block 5 format 2021-2022
Climate Change physics and effects	CU79055V2	2,5	Climate change physics & effects	CU79055V3	2,5	In block 5 format 2021-2022
Advanced GIS	CU79028V2	2	Advanced GIS	CU79028V3	2	In block 5 format 2021-2022
Climate Adaptive Spatial Vision	CU79083V1	4	Climate Proof Spatial Vision	CU79104v1	5	In block 5 format 2021-2022
Climate Proof Area Vision	CU 79082V1	4	Climate Proof Area Vision	CU79107v1	5	In block 5 format 2021-2022
Module 6 DM&SPD 2021-2022			**Module 6 DM&SPD 2022-2023**			
Course	**Course code**	**EC**	**Course**	**Course Code**	**EC**	**Remarks**
Research Methodology II	CU79031V3	2	Research Methodology	CU79105v1	2	In block 6 format 2021-2022
Statistical Data Analysis II	CU79032V2	1				In block 6 format 2021-2022
Climate Adaptive Area Inquiry	CU79034V2	4	Climate Adaptive area request for proposal	CU79106v1	5	In block 6 format 2021-2022
Strategic Spatial Interventions	CU79084V1	4	Strategic Spatial Interventions	CU79108v1	5	In block 6 format 2021-2022

2.3 Study recommendation

2.3.1. Conditions for registration for programme after NBSA (article 8.1, paragraph 9 HZ CER Ba ft)
Students with a formal negative study advice from the HZ Exam Committee are not allowed for any new enrolment in the Water Management program of the HZ (CROHO 34074) within three years after the negative study advice

2.4 Experiment (article 9.4 CER HZ ba ft)

2.4.1 This year, the programme is participating in an experiment under the pilot project group Flexibilisation. The programme would like to experience the results of participation in this project. Students are not affected by this. For further explanation, please see the programme page on HZ Learn.

CHAPTER 3 ESTABLISHMENT

3.1.1 The duration of the implementation regulations is the same as the duration of the HZ Education and Examination Regulations Bachelor programme full-time 2022-2023.

3.1.2 These Course and Examination Regulations were established by the Executive Board on 05/07/2022.