

**Implementation Regulations CER HZ**

**Bachelor**

**CIVIL ENGINEERING**

**Full-time**

**CROHO 34279**

**2022-2023**



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## 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:	✓	Nat or nlt	x	x

Students with a vwo diploma				
Vwo profiles:	NT	NG	EM	CM
Admissible:	✓	Nat or nlt	Nat	x

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

Anyone who wishes to be admitted to a three-year Degree programme must comply with one of the following educational entry requirements:

- a. a pre-university education diploma (Dutch: VWO);
- 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.

2.1.2 **Deficiency investigation** (article 2.4 CER HZ ba ft)

If a student who is not directly admissible wishes to enrol for Civil Engineering, then the student will undergo a deficiency investigation. When enrolling for the Civil Engineering programme, the investigation will consist of mathematics and physics at HAVO level 5.

By the 1st of September of that school year, the student can prove to be qualified by means of certificates proving that the subjects stated have been passed successfully at HAVO level 5 with a minimum score of 5.5. Summer courses in physics and mathematics that can provide the students with the required certificates are offered by HZ. For more information, see <https://hz.nl/opleidingen/natuurkunde>

2.1.3 **Additional requirements** (article 2.5 CER ba ft)

NA

## 2.2 Programme and education structure

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

Civil engineering is a very broad field, with many different job opportunities and specializations. The HZ Civil Engineering study programme trains Bachelor's engineers with a broad overview about the professional field and its possible specializations. As a result of this wide-ranging training, graduates have secured positions in various engineering companies - such as Arup, Boskalis, BAM, van Oord Offshore and Balfour Beatty - as Project engineers, Designers, Contractors, etc. In several cases, students have decided to pursue a Master's degree in the Netherlands or abroad. The Civil Engineering study programme prepares highly versatile engineers who are directly able to apply their knowledge and skills in real-life situations, with a special focus on safety and sustainability goals. From the cohort 2017-2018, for both the four years programme and the three year programme, the Civil engineering programme is based on the learning outcomes of the built environment domain as set out in the book "Building together and making room for the future" (Hoger onderwijs groep Bouw & Ruimte, 2015)<sup>1</sup>: the domain recognize nine fundamental competences as described in figure 1.

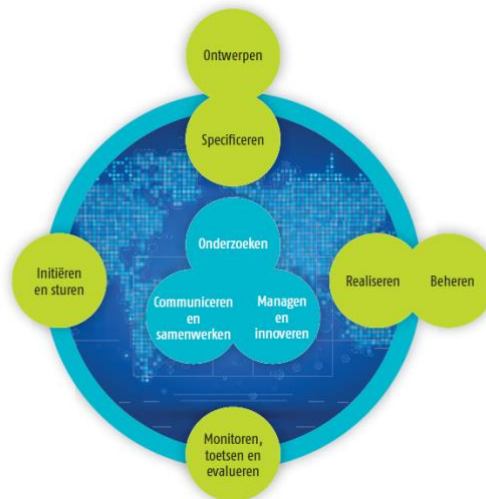


Figure 1. Domain specific competences.

From 2015, the national set of learning outcomes has nine competences, coupled with ten focus areas that apply to all programmes within the built environment domain. The nine competencies formulated for the domain are divided into two categories: professional competencies (1-6) and general HBO competencies (7-9). The six professional competencies refer to the so-called design, creation and maintenance process, where the generic HBO skills are important in each stage. This concerns the competencies of (1) Initiating and controlling, (2) Design, (3) Specifying, (4) Realizing, (5) Management and (6) Monitoring, testing and evaluating. The generic HBO competencies are (7) Research, (8) Communication and collaboration and (9) Management and innovation. The programme has broken down the professional competencies into subtasks and general learning goals. The subtasks and corresponding learning goals are the basis of the competences breakdown matrix. The Civil Engineering programme ensures that the coverage of the competences is completely achieved during the programme.

<sup>1</sup> Hoger onderwijs groep Bouw & Ruimte (2015). *Samen bouwen en ruimte geven aan de toekomst. Eindkwalificaties domein built environment.*

The Civil Engineering programme tries to offer a variety of subjects of specialization, related to the focus areas: (1) Spatial planning and design, (2) Water, soil and environment, (3) Infrastructure and mobility (4) Building and technology, (8) Applied research, (9) Communication, and (10) Management and organization. Within the national profile, the Dublin descriptors are used as a point of departure. This means that if a student has the competencies, (s)he meets the Dublin descriptors. The same procedure is used for other standards (such as those of ENAEE, NVAO and the Colleges Association). Three levels of competency are distinguished within the profile. These three levels are defined based on three aspects: task, context and degree of independence. The definition of the various levels is recorded in the book "Building together and making room for the future" (Hoger onderwijs groep Bouw & Ruimte, 2015).

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

Description of the programme learning outcomes:		
1	Initiating and directing	
	1.1	Systems analysis: understanding the situation
	1.1.1	Describe the Civil Engineering work field and professions.
	1.1.2	Detect current challenges with relevant stakeholders, by exploiting system thinking and a wide market orientation.
	1.1.3	Know and explain the basic properties and behaviour of building materials like concrete, steel, wood, and masonry.
	1.1.4	Understand the hydrological/water cycle and water resources, in order to carry out rainfall-runoff analysis, hydrological modelling and hydrometry.
	1.1.5	Understand the basic theory regarding shear stresses, slope stability and ground water flow and apply it to simple soil mechanical problems.
	1.1.6	Understand the basic elements and principles of road design.
	1.1.7	Understand the basic principles of concrete design.
	1.1.8	Understand fundamental processes/concepts needed for a sustainable living environment as material separation in waste processing, air pollution and water pollution.
	1.1.9	Understand the basic principles behind the selection of a foundation system.
	1.1.10	Understand the importance of each element constituent of a road and also the basic maintenance aspects operating on a road.
	1.1.11	<del>Understand and explaining cartography, geodesy, satellite geodesy, topography, and draw 3D elements in AutoCAD.</del>
	1.1.12	Consider the system requirements in terms of technical engineering constraints, management possibilities and water users, based on the acquired knowledge i.e. water in soil, salinity control and seepage, etc.
	1.1.13	Understand the basic principles of steel structural design.
	1.1.14	Understand the basics of flexible retaining structures.
	1.1.15	Understand the coastal processes, such as erosion and accretion, and the causes like tides and waves. The safety assessment of the Dutch coast and the programs regarding this safety can be elaborated.
	1.1.16	Explain the (waste)water treatment units and consider the water supply network components their maintenance and asset management. Perform the hydraulic design of the most common treatment units.
	1.1.17	Understand the elements included in the preliminary phases of the project life cycle, such as contracting, project evaluation, delivery methods, etc.
	1.1.18	Explain what the most important failure mechanisms of dikes are and how to prevent failure.
	1.1.19	Understand the dredging world and its characteristics in connection with environment and ecology.



		1.1.20	Understand the elements included in the life cycle of a civil engineering project, starting from the design phase until the project close out.
		1.1.21	Learn, detect, identify, analyze and validate with relevant stakeholders, based on a helicopter perspective, systems thinking and a wide market orientation, socially relevant (project) assignments and challenges.
	1.2	Defining programme requirements	
		1.2.1	Make an overview of the boundary conditions and requirements by talking to the clients and stakeholders and by analyzing regulations / legislation.
		1.2.2	Define (pre-) conditions, requirements, wishes and shared ambitions and vision, aimed at creating broad-based improvements and solutions.
	1.3	Describing, monitoring and adjusting	
		1.3.1	Monitor and adjust the process of project initiation by peer-reviewing your team members and by reflecting on your personal performance.
		1.3.2	Describe, monitor and adjust/control the process.
		1.3.3	Analyze, structure, validate, enrich (theory development), report and share (existing and new) findings obtained by applying systems thinking.
		1.3.4	Communicate appropriately and handle the situation based on appropriate (ethical) codes of conduct
2	Designing		
	2.1	Developing a solution based on systems thinking and programme requirements	
		2.1.1	Design a general layout by working out several variants, taking into account the preconditions, requirements, and stakeholders' wishes.
		2.1.2	Develop and validate, in collaboration and alignment with stakeholders, a design (a project or research plan, a model, advice, spatial or technical design, a solution) based on programme requirements by working out several variants.
	2.2	Creating different solutions	
		2.2.1	Examine the (design) variants and make a deliberate and validated selection of the most suitable.
		2.2.2	Examine various solutions and designs and make a deliberate, validated selection.
		2.2.3	When deemed necessary, you propose further, in-depth (applied, practice-oriented) research.
3	Specifying		
	3.1	Specifying and detailing	
		3.1.1	Apply mathematical and physical knowledge and skills to obtain the required calculation level for civil engineering professionals
		3.1.2	Determine the distribution of internal forces in statically determined beams
		3.1.3	Apply the basic properties of fluids and governing laws of fluid mechanics focusing on hydrostatics and pressure flow, including hydrodynamic modelling.
		3.1.4	Understand the principles and rules of technical civil engineering drawings, both considering hand drawings and AutoCAD drawings.

	3.1.5	Determine the distribution of internal stresses in statically determined beams.
	3.1.6	Apply the basic properties of fluids and governing laws of fluid mechanics focusing on open channel flow, including hydrodynamic modelling and identifying elements of sewerage networks.
	3.1.7	Identify the basic material properties of soil and use them to calculate vertical earth pressures, settlements, including the incorporation of consolidation.
	3.1.8	Calculate loads and combinations, determine distribution of internal forces in hinged structures and trusses, and calculate torsion in simple structures.
	3.1.9	Execute a (part of) detailed design of parts of your civil engineering objects using a systematic approach complying with environmental regulations: manual calculations, software modelling, detailed drawings, etc.
	3.1.10	Design an irrigation and drainage system in a rural area balancing water supply and water requirements in time and space.
	3.1.11	Calculate the lateral earth pressures and check the design and construction of shallow and deep (pile) foundations and rigid retaining structures.
	3.1.12	Design the layout of a simple road.
	3.1.13	Calculate basic bending reinforcement of statically determined concrete structures and draw the dimension drawings.
	3.1.14	Calculate the lateral earth pressures and check the design and construction of various types of flexible earth retaining structures.
	3.1.15	Detail the layout of a simple road.
	<del>3.1.16</del>	<del>Determine dimensions of simple steel structures when considering strength (cross-section resistance).</del>
	3.1.18	Design a water distribution network and analyse the performance of the system under diverse system conditions using a hydrodynamic computer model (EPANET). Solve hydraulic iterative-based problems using Matlab
	3.1.19	Determine dimensions of simple steel structures when considering strength, stability and stiffness.
	3.1.20	Design and calculate hard coastal defence structures like a dike profile with different types of revetment, taking the environment and climate change into account.
	3.1.21	Determine deformation and distribution of internal forces in statically indeterminate structures.
	3.1.22	Calculate (the reinforcement and foundation of) permanent underground concrete structures. Understand and explain the fundamental design considerations and the close relationship between design, construction, and maintenance of these structures.
	3.1.23	Understand and explain the fundamental design principles of temporary works of construction pits. Understand the close relationship between their design and construction.
	3.1.24	Explain spreading of concentrated loads in soil and concrete structures and interpret the impact of isotropic and orthotropic material behaviour.
	3.1.25	Understand and explain the fundamental design principles of hydraulic structures. Understand the close relationship between their design, construction, and maintenance.
	3.1.26	Specifying and detailing the proposed design. You specify goals, (pre-) conditions and feasibility of the project, such that it directs and shapes development of the product. Based on the programme

			requirements, including required levels of quality and relevance, you further specify a selected design(s).
		3.1.27	Calculate basic shear reinforcement and draw the bending and shear reinforcement of statically determined concrete structures.
4	Realizing		
	4.1	Realizing	
		4.1.1	Investigate management and maintenance procedures for assets using your knowledge about construction materials and methods.
		4.1.2	Set up and carry out practical experiments and tests.
		4.1.3	Make a plan for the realization.
		4.1.4	Plan the dredging project from the pre-tendering phase to the tendering phase, suggesting the most suitable contract depending on the project conditions.
		4.1.5	Make a plan for the building process, schedule, safety, work plan, cost estimation, construction site planning, quality control.
		4.1.6	Advise the owner of assets on management and maintenance by using your knowledge about construction materials and methods.
5	Maintaining		
	5.1	Maintaining	
		5.1.1	Draft a global maintenance plan.
		5.1.2	Know and clarify the most common types and causes of the deterioration of concrete and steel in civil assets.
		5.1.3	Know and identify often-used rehabilitation measures to renovate various types of civil assets.
		5.1.4	Understand and explain the principles and thinking approach of asset management.
		5.1.5	Apply and evaluate such principles to a concept asset-management plan (qualitative) for a civil asset.
		5.1.6	Devise a quantitative life/cycle plan for (part of) a civil asset
6	Monitoring, assessing and evaluating		
	6.1	Monitoring, assessing and evaluating	
		6.1.1	Monitor your solution and assess your results based on initial requirements and preconditions.
		6.1.2	Understand and explain cartography, geodesy, satellite geodesy, topography and draw 3D elements in AutoCAD.
		6.1.3	Draft a global monitoring plan.
7	Research		
	7.1	You are able to make a proposal for (applied) research and set up a research project to solve problems in practical situations	

		7.1.1	Formulate a problem statement (which comprises the problem description, research question and objective).
		7.1.2	Conduct a literature review.
		7.1.3	Set up a research project and define it in a research proposal.
		7.1.4	Develop a problem statement and to conduct a literature review in order to produce a research proposal for a professional research project
	7.2	You are able to conduct research (or have it conducted), as described in the research proposal, monitor progress and quality and make adjustments where necessary	
		7.2.1	Collect the required data and process it accordingly to enable a meaningful interpretation.
		7.2.2	Monitor the progress and quality of the execution and make adjustments if necessary.
		7.2.3	Examine the given data and you are able to provide meaningful interpretation, monitoring and adjusting your process when needed
	7.3	You are able to interpret data and draw conclusions regarding the research question. Additionally, you are able to evaluate and report results and process	
		7.3.1	Ascribe significance to retrieved and processed data.
		7.3.2	Report your research results.
		7.3.3	Examine and report your results and you are able to discuss them and to elaborate meaningful conclusions
	7.4	You act in accordance with the (ethical) code of conduct associated with research	
		7.4.1	Adapt your behaviour to the norms, professional ethics, attitude and responsibilities associated with research.
		7.4.2	Adapt your behavior to the professional and research environment
8	Communication and collaboration		
	8.1	Communication	
		8.1.1	Deliver a report, portfolio and presentation based on given requirements.
		8.1.2	Communicate efficiently and clearly with your team members and project leader by using written and oral means.
		8.1.3	Present your products in a professional environment using both written and verbal forms
		8.1.4	Use 21 <sup>st</sup> century skills and techniques in order to make your reporting appealing and interesting for your client
	8.2	Collaboration	
		8.2.1	Collaborate in your group as a junior civil engineering team.
		8.2.2	Work in a group setting, operating such as a professional working team with responsibilities and roles.
9	Management and innovation		
	9.1	Management	

		9.1.1	Act as an independent professional, performing in your group according to your role.
		9.1.2	Organize and undertake your task with a professional attitude in accordance with a given level/instructions
	9.2	Innovation	
		9.2.1	Propose innovative solutions inspired to the literature review and on information coming from the professional market/field.
		9.2.2	Use your creativity and your personal input to provide innovative results and interpretations to a given task

These competences were established in April 2015 for the Domain Built Environment. In the table below, these competences are compared with the former ones, adopted by the study program until study year 2016-2017.

Competences until cohort 2016-2017	Competences from cohort 2017-2018
BBE 1 Drawing up a schedule of design requirements	Pt.1 Initiating and directing
BBE 2 Creating and justifying an integral design	Pt.2 Designing
BBE 3 Specifying a design	Pt.3 Specifying
BBE 4 Managing and monitoring the implementation process	Pt.4 Realizing
BBE 5 Implementing a management plan	Pt.5 Maintaining Pt.6 Monitoring, assessing and evaluating

The subtasks for the former competences are summarized in the table below.

Description of the professional competences of the study programme until cohort 2016-2017:		
1	BBE 1 Drawing up a schedule of design requirements	
	1.1	CiE 1 Drawing up a programme of requirements and design
2	BBE 2 Creating and justifying an integral design	
	2.1	CiE 2 Drawing up alternatives and variations
	2.2	CiE 3 Assessing and choosing alternatives and variations
3	BBE 3 Specifying a design	
	3.1	CiE 4 Detailing, calculating and drawing
	3.2	CiE 5 Drawing up contract documents
	3.3	CiE 6 Drawing up a budget
4	BBE 4 Managing and monitoring the implementation process	
	4.1	CiE 7 Drawing up the implementation plan
	4.2	CiE 8 Drawing up a schedule
	4.3	CiE 9 Describing project-based quality description
	4.4	CiE 10 Managing a construction site
	4.5	CiE 11 Supervising
5	BBE 5 Implementing a management plan	
	5.1	CiE 12 Drawing up a plan for management and maintenance of infrastructure

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

<b>National name:</b>	Civiele Techniek
<b>International name:</b>	Civil Engineering
<b>Orientation:</b>	Bachelor
<b>Title conferred:</b>	Bachelor of Science (BSc)
<b>Programme duration:</b>	240 study credits (ECTS)
<b>Course workload 'propaedeutic' phase:</b>	60 study credits (ECTS)
<b>Conclusion with 'propaedeutic' examination:</b>	Yes
<b>Course workload main phase:</b>	180 study credits (ECTS)
<b>Variant:</b>	Full-time
<b>ISAT code:</b>	34279
<b>Location:</b>	Middelburg
<b>Language:</b>	Dutch/English
<b>Effective date:</b>	29-06-2018
<b>Submission date</b>	01-05-2024
<b>Joint degree programme:</b>	Not applicable
<b>180 ECTS fast track:</b>	Yes

Four year programme 2022-2023 and later cohorts

	Year 1			Year 2			Year 3			Year 4								
	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC						
Quarter 1	CU20596V1	Introduction CE	2,5	CU23856	Transport Infrastructure 1	2,5	CU11022V14 various	Orientation Internship/Minor	30		Mandatory subject	10						
	CU79090V1	Construction Materials 1	2,5	CU23857	Structural Engineering 1	2,5				CU79085V1	Integrated Coastal Challenge	10						
	CU20598V1	Mathematics & Physics	2,5	CU23875	Environmental Engineering	2,5					1st elective subject <sup>2</sup>	10						
	CU20600V1	Fluid mechanics 1	2,5	CU23859	Foundations 1	2,5				CU79086V1	Advanced Construction Engineering	10						
				CU206001	HZ personality CE 1	1,25				CU79087V1	Urban Water Management	10						
	CU26000V2	Exploring Civil Engineering - Project & Professional Skills 1	5	CU23860V2	Inland infrastructure development - Project & Professional Skills 5	3,75					2nd elective subject <sup>3</sup>	10						
Quarter 2	CU20604V1	Fluid mechanics 2	2,5	CU23861	Transport Infrastructure 2	2,5					CU79086V1	Advanced Construction Engineering	10					
	CU79091V1	Construction Materials 2	2,5	CU23874	Structural Engineering 2	2,5					CU79087V1	Urban Water Management	10					
	CU20602V1	Mathematics 1	2,5	CU23858	Rural Water Management	2,5					CU20700V1	Advanced Water Technology	10					
	CU04206V14	Academic reading for Delta	2,5	CU23876	Foundations 2	2,5												
				CU206002	HZ personality CE 2	1,25												
	CU20603V3	Exploring Civil Engineering - Project & Professional Skills 2	5	CU23877V3	Inland infrastructure development - Project & Professional Skills 6	3,75												
Quarter 3	VCCU06284	HZ personality CE 0	1,25	CU23878	Coastal Engineering 1	2,5				CU11022V14 various	Orientation Internship/Minor	30	CU11021V1	Final thesis	30			
	VCCU06283V6	VCA	1,25															
	CU20605V1	Soil Mechanics 1	2,5	CU23879	Structural Engineering 3	2,5												
	CU20613V1	Mathematics 2	2,5	CU23880	Water supply and Sanitation	2,5												
	CU79092V1	Applied Mechanics 1	2,5	CU23881	Project Management 1	2,5												
	CU20607V4	Sustainability and circularity in Civil Engineering - Project & Professional Skills 3	5	CU206003	HZ personality CE 3	1,25												
Quarter 4				CU23882V2	Coastal zone development - Project & Professional Skills 7	3,75												
	CU20608V1	Hydrology	2,5	CU23883	Coastal Engineering 2	2,5												
	CU20609V1	Soil Mechanics 2	2,5	CU79094V1	Applied Mechanics 3	2,5												
	CU79093V1	Applied Mechanics 2	2,5	CU23885	Dredging and Ecology	2,5												
	CU04207V10	Argument writing and persuasive loop presentation	2,5	CU23886V1	Project Management 2	2,5												
				CU206004	HZ personality CE 4	1,25												
	CU20612V4	Sustainability and circularity in Civil Engineering - Project & Professional Skills 4	5	CU23887V3	Coastal zone development - Project & Professional Skills 8	3,75												
	Total			60	Total			60	Total (minimal)							60		

HZ Personality		
VCCU06284	HZ personality CE 0	1.25
VCCU06283V6	VCA	1.25
CU206001	HZ personality CE 1	1.25
CU206002	HZ personality CE 2	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
CU79085V1	Integrated Coastal Challenge	2.5
<b>Total</b>		<b>10</b>

<sup>2</sup> At least one of those courses must be selected.

<sup>3</sup> At least one of those courses must be selected.

**Three years option (for VWO students only) 2022-2023 and later cohorts <sup>4</sup>**

	Year 1			Year 2			Year 3					
	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC			
Quarter 1	CU20596V1	Introduction CE	2,5	CU23856	Transport Infrastructure 1	2,5	Various	Minor 3YT	30			
	CU79090V1	Construction Materials 1	2,5	CU23857	Structural Engineering 1	2,5						
	CU20598V1	Mathematics & Physics	2,5	CU23875	Environmental Engineering	2,5						
	CU20600V1	Fluid mechanics 1	2,5	CU23859	Foundations 1	2,5						
				CU206001	HZ personality CE 1	1,25						
	CU26000V2	Exploring Civil Engineering - Project & Professional Skills 1	5	CU23860V2	Inland infrastructure development - Project & Professional Skills 5	3,75						
Quarter 2	CU20604V1	Fluid mechanics 2	2,5	CU23861	Transport Infrastructure 2	2,5						
	CU79091V1	Construction Materials 2	2,5	CU23874	Structural Engineering 2	2,5						
	CU20602V1	Mathematics 1	2,5	CU23858	Rural Water Management	2,5						
	CU04206V14	Academic reading for Delta	2,5	CU23876	Foundations 2	2,5						
				CU206002	HZ personality CE 2	1,25						
	CU20603V3	Exploring Civil Engineering - Project & Professional Skills 2	5	CU23877V3	Inland infrastructure development - Project & Professional Skills 6	3,75						
Quarter 3	VCCU06284	HZ personality CE 0	1,25	CU23878	Coastal Engineering 1	2,5	CU11021V1	Final thesis	30			
	VCCU06283V6	VCA	1,25									
	CU20605V1	Soil Mechanics 1	2,5	CU23879	Structural Engineering 3	2,5						
	CU20613V1	Mathematics 2	2,5	CU23880	Water supply and Sanitation	2,5						
	CU79092V1	Applied Mechanics 1	2,5	CU23881	Project Management 1	2,5						
	CU20607V4	Sustainability and circularity in Civil Engineering - Project & Professional Skills 3	5	CU206003	HZ personality CE 3	1,25						
			CU23882V2	Coastal zone development - Project & Professional Skills 7	3,75							
Quarter 4	CU20608V1	Hydrology	2,5	CU23883	Coastal Engineering 2	2,5						
	CU20609V1	Soil Mechanics 2	2,5	CU79094V1	Applied Mechanics 3	2,5						
	CU79093V1	Applied Mechanics 2	2,5	CU23885	Dredging and Ecology	2,5						
	CU04207V10	Argument writing and persuasive loop presentation	2,5	CU238863	Project Management 2	2,5						
				CU206004	HZ personality CE 4	1,25						
	CU20612V4	Sustainability and circularity in Civil Engineering - Project & Professional Skills 4	5	CU23887V2	Coastal zone development - Project & Professional Skills 8	3,75						
	Total		60	Total		60	Total		60			

HZ Personality		
VCCU06284	HZ personality CE 0	1.25
VCCU06283	VCA	1.25
CU206001	HZ personality CE 1	1.25
CU206002	HZ personality CE 2	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
Various	Minor 3YT	2.5
<b>Total</b>		<b>10</b>

<sup>4</sup> This study plan is available only for students enrolling in September. An ad hoc study plan is elaborated for students enrolling in February.



**Three years option (for Associate degree Built Environment diploma from Ad only) 2022-2023 - see art. 2.2.3a5 (240 ECs including 60 ECs exemptions in the main phase)**

	Year 1			Year 2			Year 3 (FULLY EXEMPTED <u>UPON REQUEST</u> )			Year 4					
	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC			
Quarter 1	CU20596V1	Introduction CE	2,5	CU23856	Transport Infrastructure 1	2,5	CU11022V14 various	Orientation Internship/Minor	30		<b>Mandatory subject</b>	<b>10</b>			
	CU79090V1	Construction Materials 1	2,5	CU23857	Structural Engineering 1	2,5				CU79085V1	Integrated Coastal Challenge	10			
	CU20598V1	Mathematics & Physics	2,5	CU23875	Environmental Engineering	2,5					<b>1st elective subject <sup>6</sup></b>	<b>10</b>			
	CU20600V1	Fluid mechanics 1	2,5	CU23859	Foundations 1	2,5				CU79086V1	Advanced Construction Engineering	10			
				CU206001	HZ personality CE 1	1,25				CU79087V1	Urban Water Management	10			
CU26000V2	Exploring Civil Engineering - Project & Professional Skills 1	5	CU23860V2	Inland infrastructure development - Project & Professional Skills 5	3,75					<b>2nd elective subject <sup>7</sup></b>	<b>10</b>				
Quarter 2	CU20604V1	Fluid mechanics 2	2,5	CU23861	Transport Infrastructure 2	2,5					CU79086V1	Advanced Construction Engineering	10		
	CU79091V1	Construction Materials 2	2,5	CU23874	Structural Engineering 2	2,5					CU79087V1	Urban Water Management	10		
	CU20602V1	Mathematics 1	2,5	CU23858	Rural Water Management	2,5					CU20700V1	Advanced Water Technology	10		
	CU04206V14	Academic reading for Delta	2,5	CU23876	Foundations 2	2,5									
				CU206002	HZ personality CE 2	1,25									
	CU20603V3	Exploring Civil Engineering - Project & Professional Skills 2	5	CU23877V3	Inland infrastructure development - Project & Professional Skills 6	3,75									
Quarter 3	VCCU06284	HZ personality CE 0	1,25	CU23878	Coastal Engineering 1	2,5	CU11022V14 various	Orientation Internship/Minor	30	CU11021V1	Final thesis	30			
	VCCU06283V6	VCA	1,25												
	CU20605V1	Soil Mechanics 1	2,5	CU23879	Structural Engineering 3	2,5									
	CU20613V1	Mathematics 2	2,5	CU23880	Water supply and Sanitation	2,5									
	CU79092V1	Applied Mechanics 1	2,5	CU23881	Project Management 1	2,5									
	CU20607V4	Sustainability and circularity in Civil Engineering - Project & Professional Skills 3	5	CU206003	HZ personality CE 3	1,25									
			CU23882V2	Coastal zone development - Project & Professional Skills 7	3,75										
Quarter 4	CU20608V1	Hydrology	2,5	CU23883	Coastal Engineering 2	2,5									
	CU20609V1	Soil Mechanics 2	2,5	CU79094V1	Applied Mechanics 3	2,5									
	CU79093V1	Applied Mechanics 2	2,5	CU23885	Dredging and Ecology	2,5									
	CU04207V10	Argument writing and persuasive loop presentation	2,5	CU23886V1	Project Management 2	2,5									
				CU206004	HZ personality CE 4	1,25									
	CU20612V4	Sustainability and circularity in Civil Engineering - Project & Professional Skills 4	5	CU23887V3	Coastal zone development - Project & Professional Skills 8	3,75									
	Total		60	Total		60	Total		60	Total (minimal)			60		

HZ Personality		
VCCU06284	HZ personality CE 0	1.25
VCCU06283V6	VCA	1.25
CU206001	HZ personality CE 1	1.25
CU206002	HZ personality CE 2	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
CU79085V1	Integrated Coastal Challenge	2.5
<b>Total</b>		<b>10</b>

<sup>5</sup> This study plan is available only for students enrolling in September. The study path considers a full exemption for the 3<sup>rd</sup> year courses (60 ECs).

<sup>6</sup> At least one of those courses must be selected.

<sup>7</sup> At least one of those courses must be selected.

Four year programme February enrollment 2022-2023 and later cohorts

	Year 1			Year 2			Year 3			Year 4			Year 5		
	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC
Quarter 1				CU20596V1	Introduction CE	2,5	CU23856	Transport Infrastructure 1	2,5		Mandatory subject	10	CU11021V1	Final thesis	30
				CU79090V1	Construction Materials 1	2,5	CU23857	Structural Engineering 1	2,5	CU79085V1	Integrated Coastal Challenge	10			
				CU20598V1	Mathematics & Physics	2,5	CU23875	Environmental Engineering	2,5		1st elective subject <sup>8</sup>	10			
				CU20600V1	Fluid mechanics 1	2,5	CU23859	Foundations 1	2,5	CU79086V1	Advanced Construction Engineering	10			
				CU26000V2	Exploring Civil Engineering - Project & Professional Skills 1	5	CU206001	HZ personality CE 1	1,25	CU79087V1	Urban Water Management	10			
CU23860V2							Inland infrastructure development - Project & Professional Skills 5	3,75		2nd elective subject <sup>9</sup>	10				
Quarter 2				CU20604V1	Fluid mechanics 2	2,5	CU23861	Transport Infrastructure 2	2,5	CU79086V1	Advanced Construction Engineering	10			
				CU79091V1	Construction Materials 2	2,5	CU23874	Structural Engineering 2	2,5	CU79087V1	Urban Water Management	10			
				CU20602V1	Mathematics 1	2,5	CU23858	Rural Water Management	2,5	CU20700V1	Advanced Water Technology	10			
				CU04206V14	Academic reading for Delta	2,5	CU23876	Foundations 2	2,5						
	CU20603V3	Exploring Civil Engineering - Project & Professional Skills 2	5	CU206002	HZ personality CE 2	1,25									
							CU23877V3	Inland infrastructure development - Project & Professional Skills 6	3,75						
Quarter 3	VCCU06284	HZ personality CE 0	1,25				CU23878	Coastal Engineering 1	2,5						
	VCCU06283V6	VCA	1,25				CU23879	Structural Engineering 3	2,5						
	CU20605V1	Soil Mechanics 1	2,5				CU23880	Water supply and Sanitation	2,5						
	CU20613V1	Mathematics 2	2,5				CU23881	Project Management 1	2,5						
	CU79092V1	Applied Mechanics 1	2,5				CU206003	HZ personality CE 3	1,25						
	CU20607V4	Sustainability and circularity in Civil Engineering - Project & Professional Skills 3	5				CU23882V2	Coastal zone development - Project & Professional Skills 7	3,75						
Quarter 4	CU20608V1	Hydrology	2,5	CU11022V14	Orientation Internship	30	CU23883	Coastal Engineering 2	2,5	various	Minor	30			
	CU20609V1	Soil Mechanics 2	2,5	CU79094V1	Applied Mechanics 3	2,5									
	CU79093V1	Applied Mechanics 2	2,5	CU23885	Dredging and Ecology	2,5									
	CU04207V10	Argument writing and persuasive loop presentation	2,5	CU23886V1	Project Management 2	2,5									
	CU20612V4	Sustainability and circularity in Civil Engineering - Project & Professional Skills 4	5	CU206004	HZ personality CE 4	1,25									
							CU23887V3	Coastal zone development - Project & Professional Skills 8	3,75						
	Total 30			Total 60			Total 60			Total (minimal) 60					

HZ Personality		
VCCU06284	HZ personality CE 0	1.25
VCCU06283	VCA	1.25
CU206001	HZ personality CE 1	1.25
CU206002	HZ personality CE 2	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
CU79085V1	Integrated Coastal Challenge	2.5
<b>Total</b>		<b>10</b>

<sup>8</sup> At least one of those courses must be selected.

<sup>9</sup> At least one of those courses must be selected.

Four year programme 2020-2021 and 2021-2022

	Year 1			Year 2			Year 3			Year 4		
	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC
Quarter 1	CU20596V1	Introduction CE	2,5	CU23856	Transport Infrastructure 1	2,5	CU11022V14 various	Orientation Internship/Minor	30		<b>Mandatory subject</b>	<b>10</b>
	CU79090V1	Construction Materials 1	2,5	CU23857	Structural Engineering 1	2,5				CU79085V1	Integrated Coastal Challenge	10
	CU20598V1	Mathematics & Physics	2,5	CU23875	Environmental Engineering	2,5					<b>1st elective subject <sup>10</sup></b>	<b>10</b>
	CU20600V1	Fluid mechanics 1	2,5	CU23859	Foundations 1	2,5				CU79086V1	Advanced Construction Engineering	10
	CU26000V2	Exploring Civil Engineering - Project & Professional Skills 1	5	CU206001	HZ personality CE 1	1,25				CU79087V1	Urban Water Management	10
Quarter 2				CU23860V1	Inland infrastructure development - Project & Professional Skills 5	3,75					<b>2nd elective subject <sup>11</sup></b>	<b>10</b>
	CU20604V1	Fluid mechanics 2	2,5	CU23861	Transport Infrastructure 2	2,5				CU79086V1	Advanced Construction Engineering	10
	CU79091V1	Construction Materials 2	2,5	CU23874	Structural Engineering 2	2,5				CU79087V1	Urban Water Management	10
	CU20602V1	Mathematics 1	2,5	CU23858	Rural Water Management	2,5				CU20700V1	Advanced Water Technology	10
	CU04206V13	Academic reading for Delta	2,5	CU23876	Foundations 2	2,5						
Quarter 3				CU206002	HZ personality CE 2	1,25	CU11022V14 various	Orientation Internship/Minor	30	CU11021V1	Final thesis	30
	CU20603V3	Exploring Civil Engineering - Project & Professional Skills 2	5	CU23877V2	Inland infrastructure development - Project & Professional Skills 6	3,75						
	VCCU06284	HZ personality CE 0	1,25	CU23878	Coastal Engineering 1	2,5						
	VCCU06283V6	VCA	1,25	CU23879	Structural Engineering 3	2,5						
	CU20605V1	Soil Mechanics 1	2,5	CU23880	Water supply and Sanitation	2,5						
Quarter 4	CU20613V1	Mathematics 2	2,5	CU23881	Project Management 1	2,5						
	CU79092V1	Applied Mechanics 1	2,5	CU206003	HZ personality CE 3	1,25						
	CU20607V3	Dutch-Flemish Delta Polders - Project & Professional Skills 3	5	CU23882V2	Coastal zone development - Project & Professional Skills 7	3,75						
	CU20608V1	Hydrology	2,5	CU23883	Coastal Engineering 2	2,5						
	CU20609V1	Soil Mechanics 2	2,5	CU79094V1	Applied Mechanics 3	2,5						
Quarter 4	CU79093V1	Applied Mechanics 2	2,5	CU23885	Dredging and Ecology	2,5						
	CU04207V9	English: Argument writing and persuasive loop presentation	2,5	CU23886	Project Management 2	2,5						
	CU20612V3	Dutch-Flemish Delta Polders - Project & Professional Skills 4	5	CU206004	HZ personality CE 4	1,25						
				CU23887V3	Coastal zone development - Project & Professional Skills 8	3,75						
	<b>Total</b>		<b>60</b>	<b>Total</b>		<b>60</b>	<b>Total</b>		<b>60</b>	<b>Total (minimal)</b>		<b>60</b>

HZ Personality		
VCCU06284	HZ personality CE 0	1.25
VCCU06283V6	VCA	1.25
CU206001	HZ personality CE 1	1.25
CU206002	HZ personality CE 2	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
CU79085V1	Integrated Coastal Challenge	2.5
<b>Total</b>		<b>10</b>

<sup>10</sup> At least one of those courses must be selected.

<sup>11</sup> At least one of those courses must be selected.

**Three years option (for VWO students only) 2020-2021 and 2021-2022<sup>12</sup>**

	Year 1			Year 2			Year 3					
	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC			
Quarter 1	CU20596V1	Introduction CE	2,5	CU23856	Transport Infrastructure 1	2,5	Various	Minor 3YT	30			
	CU79090V1	Construction Materials 1	2,5	CU23857	Structural Engineering 1	2,5						
	CU20598V1	Mathematics & Physics	2,5	CU23875	Environmental Engineering	2,5						
	CU20600V1	Fluid mechanics 1	2,5	CU23859	Foundations 1	2,5						
				CU206001	HZ personality CE 1	1,25						
CU26000V2	Exploring Civil Engineering - Project & Professional Skills 1	5	CU23860V1	Inland infrastructure development - Project & Professional Skills 5	3,75							
Quarter 2	CU20604V1	Fluid mechanics 2	2,5	CU23861	Transport Infrastructure 2	2,5						
	CU79091V1	Construction Materials 2	2,5	CU23874	Structural Engineering 2	2,5						
	CU20602V1	Mathematics 1	2,5	CU23858	Rural Water Management	2,5						
	CU04206V13	English for Specific Purposes	2,5	CU23876	Foundations 2	2,5						
				CU206002	HZ personality CE 2	1,25						
CU20603V3	Exploring Civil Engineering - Project & Professional Skills 2	5	CU23877V2	Inland infrastructure development - Project & Professional Skills 6	3,75							
Quarter 3	VCCU06284	HZ personality CE 0	1,25	CU23878	Coastal Engineering 1	2,5	CU11021V1	Final thesis	30			
	VCCU06283V6	VCA	1,25									
	CU20605V1	Soil Mechanics 1	2,5	CU23879	Structural Engineering 3	2,5						
	CU20613V1	Mathematics 2	2,5	CU23880	Water supply and Sanitation	2,5						
	CU79092V1	Applied Mechanics 1	2,5	CU23881	Project Management 1	2,5						
CU20607V3	Dutch-Flemish Delta Polders - Project & Professional Skills 3	5	CU206003	HZ personality CE 3	1,25							
			CU23882V2	Coastal zone development - Project & Professional Skills 7	3,75							
Quarter 4	CU20608V1	Hydrology	2,5	CU23883	Coastal Engineering 2	2,5						
	CU20609V1	Soil Mechanics 2	2,5	CU79094V1	Applied Mechanics 3	2,5						
	CU79093V1	Applied Mechanics 2	2,5	CU23885	Dredging and Ecology	2,5						
	CU04207V9	English for Specific Purposes	2,5	CU23886/ CU238863	Project Management 2	2,5						
				CU206004	HZ personality CE 4	1,25						
CU20612V3	Dutch-Flemish Delta Polders - Project & Professional Skills 4	5	CU23887V2	Coastal zone development - Project & Professional Skills 8	3,75							
	Total		60	Total		60	Total		60			

HZ Personality		
VCCU06284	HZ personality CE 0	1.25
VCCU06283	VCA	1.25
CU206001	HZ personality CE 1	1.25
CU206002	HZ personality CE 2	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
Various	Minor 3YT	2.5
<b>Total</b>		<b>10</b>

<sup>12</sup> This study plan is available only for students enrolling in September. An ad hoc study plan is elaborated for students enrolling in February.

Four year programme February enrollment cohort 2020-2021 and later

	Year 1			Year 2			Year 3			Year 4			Year 5					
	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC			
Quarter 1				CU20596V1	Introduction CE	2,5	CU23856	Transport Infrastructure 1	2,5	Mandatory subject			10	CU11021V1    Final thesis		30		
				CU79090V1	Construction Materials 1	2,5	CU23857	Structural Engineering 1	2,5	CU79085V1	Integrated Coastal Challenge	10	1st elective subject <sup>13</sup>				10	
				CU20598V1	Mathematics & Physics	2,5	CU23875	Environmental Engineering	2,5	CU79086V1	Advanced Construction Engineering	10						
				CU20600V1	Fluid mechanics 1	2,5	CU23859	Foundations 1	2,5	CU79087V1	Urban Water Management	10						
				CU26000V2	Exploring Civil Engineering - Project & Professional Skills 1	5	CU206001	HZ personality CE 1	1,25	CU23860V1	Inland infrastructure development - Project & Professional Skills 5	3,75	2nd elective subject <sup>14</sup>				10	
CU79086V1							Advanced Construction Engineering	10										
CU79087V1							Urban Water Management	10										
CU79086V1							Advanced Construction Engineering	10										
CU79087V1							Urban Water Management	10										
Quarter 2				CU20604V1	Fluid mechanics 2	2,5	CU23861	Transport Infrastructure 2	2,5	CU79087V1	Urban Water Management	10	CU20700V1				Advanced Water Technology	10
	CU79091V1	Construction Materials 2	2,5	CU23874	Structural Engineering 2	2,5	Total	30										
	CU20602V1	Mathematics 1	2,5	CU23858	Rural Water Management	2,5												
	CU04206V13	Academic reading for Delta	2,5	CU23876	Foundations 2	2,5												
	CU20603V3	Exploring Civil Engineering - Project & Professional Skills 2	5	CU23877V2	Inland infrastructure development - Project & Professional Skills 6	3,75												
Quarter 3	VCCU06284	HZ personality CE 0	1,25				CU23878	Coastal Engineering 1	2,5									
	VCCU06283V6	VCA	1,25				CU23879	Structural Engineering 3	2,5									
	CU20605V1	Soil Mechanics 1	2,5				CU23880	Water supply and Sanitation	2,5									
	CU20613V1	Mathematics 2	2,5				CU23881	Project Management 1	2,5									
	CU79092V1	Applied Mechanics 1	2,5				CU206003	HZ personality CE 3	1,25									
	CU20607V3	Dutch-Flemish Delta Polders - Project & Professional Skills 3	5				CU23882V2	Coastal zone development - Project & Professional Skills 7	3,75									
Quarter 4	CU20608V1	Hydrology	2,5	CU11022V14	Orientation Internship	30	CU23883	Coastal Engineering 2	2,5	various	Minor	30						
	CU20609V1	Soil Mechanics 2	2,5	CU79094V1	Applied Mechanics 3	2,5												
	CU79093V1	Applied Mechanics 2	2,5	CU23885	Dredging and Ecology	2,5												
	CU04207V9	English: Argument writing and persuasive loop presentation	2,5	CU23886	Project Management 2	2,5												
	CU20612V3	Dutch-Flemish Delta Polders - Project & Professional Skills 4	5	CU206004	HZ personality CE 4	1,25												
						CU23887V3	Coastal zone development - Project & Professional Skills 8	3,75										
	Total			30	Total			60	Total			60	Total (minimal)			60		

HZ Personality		
VCCU06284	HZ personality CE 0	1.25
VCCU06283	VCA	1.25
CU206001	HZ personality CE 1	1.25
CU206002	HZ personality CE 2	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
CU79085V1	Integrated Coastal Challenge <sup>15</sup>	2.5
<b>Total</b>		<b>10</b>

<sup>13</sup> At least one of those courses must be selected.

<sup>14</sup> At least one of those courses must be selected.

<sup>15</sup> Those study credits are included in the study credits of the 4<sup>th</sup> year course.

Four year programme 2018-2019 and 2019-2020 cohorts

		Year 1			Year 2			Year 3			Year 4					
		Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC			
SEMESTER 1	Quarter 1	CU20596V1	Introduction CE	2.5	CU23856	Transport Infrastructure 1	2.5	CU11022V14 various	Orientation Internship/Minor	30	Mandatory subject 10					
		CU20597V1	Applied Mechanics 1	2.5	CU23857	Structural Engineering 1	2.5				CU79085V1	Integrated Coastal Challenge	10			
		CU20598V1	Mathematics & Physics	2.5	CU23875	Environmental Engineering	2.5				1st elective subject 16 10					
		VCCU06284	VPS CE / HZ personality CE 0	1.25	CU23859	Foundations 1	2.5				CU79086V1	Advanced Construction Engineering	10			
		VCCU06283	VCA	1.25	CU206001	HZ personality CE 1	1.25				CU79087V1	Urban Water Management	10			
		CU26000(V1)	Exploring Civil Engineering - Project & Professional Skills 1	5	CU23860V1	Inland infrastructure development - Project & Professional Skills 5	3.75				2nd elective subject 17 10					
	Quarter 2	CU20600V1	Fluid Mechanics 1	2.5	CU23861	Transport Infrastructure 2	2.5				CU79086V1	Advanced Construction Engineering	10			
		CU20601V1	Applied Mechanics 2	2.5	CU23874	Structural Engineering 2	2.5				CU79087V1	Urban Water Management	10			
		CU20602V1	Mathematics 1	2.5	CU23858	Rural Water Management	2.5				CU20700V1	Advanced Water Technology	10			
		CU04206V12	English for Specific Purposes	2.5	CU23876	Foundations 2	2.5									
CU20603(V1/2)		Exploring Civil Engineering - Project & Professional Skills 2	5	CU206002	HZ personality CE 2	1.25										
			CU23877V2	Inland infrastructure development - Project & Professional Skills 6	3.75											
SEMESTER 2	Quarter 3	CU20604V1	Fluid Mechanics 2	2.5	CU23878	Coastal Engineering 1	2.5	CU11022V14 various	Orientation Internship/Minor	30	CU11021V1	Final thesis	30			
		CU20605V1	Soil Mechanics 1	2.5	CU23879	Structural Engineering 3	2.5									
		CU20613V1	Mathematics 2	2.5	CU23880	Water supply and Sanitation	2.5									
		CU20610V1	Construction Materials	2.5	CU23881	Project Management 1	2.5									
		CU20607(V1/2)	Dutch-Flemish Delta Polders - Project & Professional Skills 3	5	CU206003	HZ personality CE 3	1.25									
				CU23882V2	Coastal zone development - Project & Professional Skills 7	3.75										
	Quarter 4	CU20608V1	Hydrology	2.5	CU23883	Coastal Engineering 2	2.5									
		CU20609V1	Soil Mechanics 2	2.5	CU23884	Applied Mechanics 4	2.5									
		CU20606V1	Applied Mechanics 3	2.5	CU23885	Dredging and Ecology	2.5									
		CU04207V9	English for Specific Purposes	2.5	CU23886V1	Project Management 2	2.5									
CU20612(V1/2)		Dutch-Flemish Delta Polders - Project & Professional Skills 4	5	CU206004	HZ personality CE 4	1.25										
			CU23887V2	Coastal zone development - Project & Professional Skills 8	3.75											
		Total	60	Total	60	Total	60	Total (minimal) 60								

HZ Personality		
VCCU06284	HZ personality CE 0	1.25
VCCU06283	VCA	1.25
CU206001	HZ personality CE 1	1.25
CU206002	HZ personality CE 2	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
CU79085V1	Integrated Coastal Challenge	2.5
<b>Total</b>		<b>10</b>

<sup>16</sup> At least one of those courses must be selected.

<sup>17</sup> At least one of those courses must be selected.



Four year programme February enrollment cohort 2019-2020

		Year 1			Year 2			Year 3			Year 4			Year 5					
		Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC			
SEMESTER 1	Quarter 1				CU20596V1	Introduction CE	2.5	CU23856	Transport Infrastructure 1	2.5	Mandatory subject			10	CU11021V1			Final thesis	30
					CU20597V1	Applied Mechanics 1	2.5	CU23857	Structural Engineering 1	2.5	CU79085V1	Integrated Coastal Challenge	10						
					CU20598V1	Mathematics & Physics	2.5	CU23875	Environmental Engineering	2.5	1st elective subject <sup>18</sup>			10					
					VCCU06284	HZ personality CE 0	1.25	CU23859	Foundations 1	2.5	CU79086V1	Advanced Construction Engineering	10						
					VCCU06283V6	VCA	1.25	CU206001	HZ personality CE 1	1.25	CU79087V1	Urban Water Management	10						
					CU26000V1	Exploring Civil Engineering - Project & Professional Skills 1	5	CU23860V1	Inland infrastructure development - Project & Professional Skills 5	3.75	2nd elective subject <sup>19</sup>			10					
	Quarter 2	CU20600V1	Fluid Mechanics 1	2.5	CU23861	Transport Infrastructure 2	2.5	CU79086V1	Advanced Construction Engineering	10				Total	30				
		CU20601V1	Applied Mechanics 2	2.5	CU23874	Structural Engineering 2	2.5	CU79087V1	Urban Water Management	10									
		CU20602V1	Mathematics 1	2.5	CU23858	Rural Water Management	2.5	CU20700V1	Advanced Water Technology	10									
		CU04206V13	Academic reading for Delta	2.5	CU23876	Foundations 2	2.5												
		CU20603V2	Exploring Civil Engineering - Project & Professional Skills 2	5	CU206002	HZ personality CE 2	1.25												
					CU23877V2	Inland infrastructure development - Project & Professional Skills 6	3.75												
SEMESTER 2	Quarter 3	CU20604V1	Fluid Mechanics 2	2.5				CU23878	Coastal Engineering 1	2.5	various			Minor			30		
		CU20605V1	Soil Mechanics 1	2.5				CU23879	Structural Engineering 3	2.5									
		CU20613V1	Mathematics 2	2.5				CU23880	Water supply and Sanitation	2.5									
		CU20610V1	Construction Materials	2.5				CU23881	Project Management 1	2.5									
		CU20607V2	Dutch-Flemish Delta Polders - Project & Professional Skills 3	5				CU206003	HZ personality CE 3	1.25									
	Quarter 4	CU20608V1	Hydrology	2.5	CU11022V14	Orientation Internship	30	CU23882V2	Coastal zone development - Project & Professional Skills 7	3.75									
		CU20609V1	Soil Mechanics 2	2.5	CU23883	Coastal Engineering 2	2.5												
		CU20606V1	Applied Mechanics 3	2.5	CU23884	Applied Mechanics 4	2.5												
		CU04207V9	English Argument writing and persuasive loop	2.5	CU23885	Dredging and Ecology	2.5												
		CU20612V2	Dutch-Flemish Delta Polders - Project & Professional Skills 4	5	CU23886V1	Project Management 2	2.5												
								CU206004	HZ personality CE 4	1.25									
								CU23887V3	Coastal zone development - Project & Professional Skills 8	3.75									
		Total			30			Total			60			Total (minimal)			60		

HZ Personality		
VCCU06284	HZ personality CE 0	1.25
VCCU06283	VCA	1.25
CU206001	HZ personality CE 1	1.25
CU206002	HZ personality CE 2	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
CU79085V1	Integrated Coastal Challenge	2.5
<b>Total</b>		<b>10</b>

<sup>18</sup> At least one of those courses must be selected.

<sup>19</sup> At least one of those courses must be selected.

**Four year programme 2017-2018 cohort**

		Year 1			Year 2			Year 3			Year 4				
		Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC		
SEMESTER 1	Quarter 1	CU20596V1	Introduction CE	2.5	CU23856	Transport Infrastructure 1	2.5	CU11022V14 various	Orientation Internship/Minor	30		Mandatory subject	10		
		CU20597V1	Applied Mechanics 1	2.5	CU23857	Structural Engineering 1	2.5				CU79085V1	Integrated Coastal Challenge	10		
		CU20598V1	Mathematics & Physics	2.5	CU23875	Environmental Engineering	2.5					1st elective subject <sup>20</sup>	10		
		CU20599V1	Exploring Civil Engineering - Project & Professional Skills 1	7.5	CU23859	Foundations 1	2.5					Advanced Construction Engineering	10		
					VCCU06283V5	VCA	1.25				CU79086V1				
				CU23860	Inland infrastructure development - Project & Professional Skills 5	3.75	CU79087V1				Urban Water Management	10		2nd elective subject <sup>21</sup>	10
	Quarter 2	CU20600V1	Fluid Mechanics 1	2.5	CU23861	Transport Infrastructure 2	2.5				CU79086V1	Advanced Construction Engineering	10		
		CU20601V1	Applied Mechanics 2	2.5	CU23874	Structural Engineering 2	2.5				CU79087V1	Urban Water Management	10		
		CU20602V1	Mathematics 1	2.5	CU23858	Rural Water Management	2.5				CU20700V1	Advanced Water Technology	10		
		CU04206V12	English for specific purposes	2.5	CU23876	Foundations 2	2.5								
CU20603V1		Exploring Civil Engineering - Project & Professional Skills 2	5	VCCU06284	VPS CE	1.25									
			CU23877	Inland infrastructure development - Project & Professional Skills 6	3.75										
SEMESTER 2	Quarter 3	CU20604V1	Fluid Mechanics 2	2.5	CU23878	Coastal Engineering 1	2.5	CU11022V14 various	Orientation Internship/Minor	30	CU11021V1	Final thesis	30		
		CU20605V1	Soil Mechanics 1	2.5	CU23879	Structural Engineering 3	2.5								
		CU20613V1	Mathematics 2	2.5	CU23880	Water supply and Sanitation	2.5								
		CU20610V1	Construction Materials	2.5	CU23881	Project Management 1	2.5								
		CU20607V1	Dutch-Flemish Delta Polders - Project & Professional Skills 3	5	CU206003	HZ personality CE 3	1.25								
				CU23882	Coastal zone development - Project & Professional Skills 7	3.75									
	Quarter 4	CU20608V1	Hydrology	2.5	CU23883	Coastal Engineering 2	2.5								
		CU20609V1	Soil Mechanics 2	2.5	CU23884	Applied Mechanics 4	2.5								
		CU20606V1	Applied Mechanics 3	2.5	CU23885	Dredging and Ecology	2.5								
		CU04207V9	Delta-English	2.5	CU23886V1	Project Management 2	2.5								
					CU206004	HZ personality CE 4	1.25								
		CU20612V1	Dutch-Flemish Delta Polders - Project & Professional Skills 4	5	CU23887	Coastal zone development - Project & Professional Skills 8	3.75								
		Total		60	Total		60							Total	

*This study programme is still available for the students in cohort 2017-2018 only.*

HZ Personality		
CU20599V1	Exploring Civil Engineering - Project & Professional Skills 1	2.5
VCCU06283	VCA	1.25
VCCU06284	VPS CE	1.25
CU206003	HZ personality CE 3	1.25
CU206004	HZ personality CE 4	1.25
CU79085V1	Integrated Coastal Challenge	2.5
<b>Total</b>		<b>10</b>

<sup>20</sup> At least one of those courses must be selected.

<sup>21</sup> At least one of those courses must be selected.



Four year programme cohorts 2013-2014 to 2016-2017

	Year 1			Year 2			Year 3			Year 4		
	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC	Code	Course name	EC
SEMESTER 1	CU17636 CU17637	Orientation civil engineering part 1	2.5	CU20614	Basic Statistics DA	2.5	CU11022V14 various	Orientation Internship/Minor	30	CU17614	Dredging and ecology	7.5
	CU17638 CU17639	Orientation civil engineering part 2	2.5	VCCU06280	BBE CT vrijekeuze Semester 4	1.25				CU04778	Urban water management	7.5
	CU17634 CU17641	Professional portfolio	2.5	CU04585	VPS	2.5				CU17615	Structural engineering 4	7.5
	CU13714 CU13432	Desk research	2.5	CU13337	Road design	7.5				CU17613	Technology building underground	7.5
	CU06387 CU03079	Basic mathematics	2.5	CU07821	Rural Water Management	7.5				CU79053	Coastal Challenge Flemish coast CE	7.5
	CU04804	English laying foundations	2.5	CU13336	Structural engineering 3	7.5				CU04805	English building bridges	2.5
			3.75			1.25					Research 4 Independently conducting	2.5
	CU17630 CU17631	Structural engineering 1 part 1		VCCU06283	VCA					CU17616	research	
	CU17632 CU17633	Structural engineering 1 part 2	3.75							VCCU06281	Free compensation space	2.5
	CU17621 CU17623	Delta, land and water part 1	2.5									
	CU17624 CU17625	Delta, land and water part 2	2.5									
	CU17628 CU17629	Delta, land and water part 3	2.5									
	SEMESTER 2	CU17652 CU17653	Building with Soil part 1	2.5	CU14854	Canals & Harbours				7.5	CU11022V14 various	Orientation Internship/Minor
CU17654 CU20473		Building with Soil part 2	2.5	CU14853	Coastal engineering	7.5						
CU15331 CU15330		Combi R2/R3	2.5	CU10380	DM Delta Management 1	7.5						
CU20468 CU20470		Fluid dynamics part 1	2.5	CU14855	Management & maintenance	7.5						
CU17644 CU17645		Fluid dynamics part 2	2.5									
		Fundamentals of sustainable development	2.5									
CU11702												
CU12610 CU03072		Mathematics Differentiation	2.5									
			5									
CU20475 CU20474		Portfolio 2										
			3.75									
CU17648 CU17649		Structural Engineering 2 part 1										
			3.75									
CU17650 CU17651	Structural Engineering 2 part											
	Total	60	Total	60	Total	60	Total (minimal)	60				

This study programme is not offered anymore. The exams of year 4 will be offered for the last time during the academic year 2020-2021. All exams will finally expire and not be offered anymore from the academic year 2021-2022.

Free compensation space		
CU04585	VPS	2.5
VCCU06283	VCA	1.25
VCCU06280	BBE CT vrijekeuze Semester 4	1.25
VCCU06281	Free compensation space	2.5
<b>Total</b>		<b>7.5</b>

### Transition table (article 6.2.11 HZ OER)<sup>22</sup>

In September 2017, the Civil Engineering Bachelor's Programme at HZ University Of Applied Sciences launched a renewed curriculum programme. The Transition Plan from the old programme to the new one makes use of a Transition table which explains how the old competences and learning goals of the phased out courses transfer to the new competence coverage matrix. The Table includes only the courses which are directly relevant for the students involved in the Transition. The Plan is drafted by the Programme Committee, it is approved by the educational advisor of our Civil Engineering programme and it is recognized by the Domain Exam Committee.

Total Ecs	Partial Ecs	Courses phased out	New offer of equivalent courses	Partial Ecs	Comments
2.5		CU04804V5 - BBE-CT Laying Foundations (Semester 1 - 2015/2016)	CU04206V13 - Academic Reading for Delta	2.5	The course has the same learning goals.
2.5		CU06387 Basic mathematics	CU20598V1 - Mathematics & Physics	2.5	The course has the same learning goals.
2.5		CU12610 Mathematics and differentiation	CU20602V1 - Mathematics 1	2.5	The course has the same learning goals.
12.5	2.5	CU13714 Research 1: Desk research	Exploring Civil Engineering - Project & Professional Skills 1		The courses have the same learning goals.
	2.5	CU17640 Professional portfolio			
	2.5	CU17621 Delta, land and water part 1	Exploring Civil Engineering - Project & Professional Skills 2		
	2.5	CU17624 Delta, land and water part 2			
	2.5	CU17628 Delta, land and water part 3			
7.5	3.75 3.75	CU17630 Structural engineering 1 part 1 CU17632 - Structural engineering 1 part 2	Applied mechanics 1 Applied mechanics 2 CU79091V1 - Construction Materials 2	2.5 2.5 2.5	The courses have the same learning goals.
2.5		CU17636 - Orientation CE part 1	CU20596V1 - Introduction CE	2.5	The course has the same learning goals.
2.5		CU17638 - Orientation CE part 2			The course has the same learning goals.
2.5		CU20468 Fluid dynamics part 1	CU20600V1 - Fluid Mechanics 1	2.5	The course has the same learning goals.
2.5		CU17644 Fluid dynamics part 2	CU20604V1 - Fluid Mechanics 2	2.5	The course has the same learning goals.
2.5		CU15330V2 - Combi O2/O3 (Semester 2 - 2015/2016)	CU79089V1 - Research assignment	2.5	A variant of the project is offered in order to be suitable for individual work and submission.
1.25		VCCU06280V7 - BBE CT vrijekeuze module 4 (Semester 1 - 2017/2018)  VCCU06280V6 - BBE CT vrijekeuze module 4 (Semester 1 - 2016/2017)	CU206001 HZ personality CE 1	1.25	HZ personality credits take place instead of free choice study credits as required by the new HZ regulations.
1.25		VCCU06283V5 - VCA volledig (Semester 1 - 2017/2018) VCCU06283V4 - VCA volledig (Semester 1 - 2016/2017)	VCCU06283 VCA	1.25	An updated but equivalent version of the VCA course is provided in the new curriculum.
7.5		CU14853V6 - Coastal engineering (Semester 2 - 2017/2018) CU04156V6 - Coastal Engineering (Semester 2 - 2016/2017)			
	1.875	Interim course waves and tides (Individual)	CU23838 Coastal Engineering 1	2.5	The course has the same learning goals and more focus on coastal engineering.
	1.875	End course (Individual)	CU23883 Coastal Engineering 2	2.5	The course has the same learning goals and more focus on coastal engineering.
	3.75	Report design a dike (Individual)	CU79088V1 Project Coastal Engineering (Individual)	2.5	A variant of the project is offered in order to be suitable for individual work and submission and with a focus on coastal engineering and dike design.

<sup>22</sup> An extensive Transition Plan is made available by the Study Program upon request.

2.5		CU04585V20 - Practicum Verwerving Passende Stageplaats. Oriëntatie, verwerving, voorbereiding (Semester 1 - 2017/2018)	CU206002 HZ personality CE 2	1.25	This course is not offered anymore in the new curriculum. HZ personality credits can be used to achieve the same learning goals upon consultation with the study coach.
		CU04585V18 - Practicum Verwerving Passende Stageplaats. Oriëntatie, verwerving, voorbereiding (Semester 1 - 2016/2017)	CU206003 HZ personality CE 3	1.25	
7.5		CU13336V5 - structural engineering 3 (Semester 1 - 2017/2018) CU13336V4 - structural engineering 3 (Semester 1 - 2016/2017)			
	3.75	course Applied Mechanics (Individual)	CU23884 Applied Mechanics 4	2.5	The course has the same learning goals.
	3.75	course Steel Constructions (Individual)	CU23874 Structural Engineering 2	2.5	The two courses combined have the same learning goals of the old course.
			CU23879 Structural Engineering 3	2.5	
7.5		CU10380V3 - DM Delta Management 1 (Semester 1 - 2014/2015)			
	1,875	Interim course (Individual)	CU23881 Project Management 1	2.5	The course has the same learning goals.
	1,875	End course (Individual)	CU23886V1 Project Management 2	2.5	The course has the same learning goals.
	3.75	Report project (Group)	CU23888 Project Project management (Individual)	2.5	A variant of the project is offered in order to be suitable for individual work and submission and with a focus on project management.
Minimal 30	15	Mandatory subjects	Mandatory subject	10	During the academic year 2020-2021, students can decide alternatively to take the exams for the expiring courses or to follow the new courses and take those exams. The study programme ensures the full coverage of the competences. In academic year 2021-2022, the old exams are not offered anymore.
	2.5	VCCU06281 - DA VSP2.5	CU79085V1 - Integrated Coastal Challenge	10	
	7.5	CU17614V3 - Dredging & Ecology	1st elective subject <sup>23</sup>	10	
	2.5	CU04805V3 - English building bridges	CU79086V1 - Advanced Construction Engineering	10	
	2.5	CU17616V2 - Research 4 Independently conducting research	CU79087V1 - Urban Water Management	10	
	15	Elective subjects	2nd elective subject <sup>24</sup>	10	
	7.5	CU17615V3 - Structural Design 4	CU79086V1 - Advanced Construction Engineering	10	
	7.5	CU17613V3 - Technology underground building	CU79087V1 - Urban Water Management	10	
	7.5	CU04778V8 - Urban Water Management	CU20700V1 - Advanced Water Technology	10	
	7.5	CU79053V1 - Coastal Challenge Flemish coast CE	CU79048V1 - Spatial planning for circularity	10	
			CU79049V1 - Delta Economics 3		
			CU79050V1 - Delta Management		
		CU79047V1 - Mekong area and system analysis			

<sup>23</sup> At least one of those courses must be selected.

<sup>24</sup> At least one of those courses must be selected.

From academic year 2020-2021 new changes have been applied to optimize the February enrolment of the Civil engineering study program. As a consequence, some courses have been renamed and rearranged within the first year of the study programme. The changes still allow the full coverage of the competence matrix. In addition, some courses have been updated.

Total Ecs	Courses phasing out	New offer of equivalent courses
2.5	CU20610V1 - Construction Materials	CU79090V1 - Construction Materials 1
2.5	CU20601V1 - Applied Mechanics 2	CU79091V1 - Construction Materials 2
2.5	CU20606V1 - Applied Mechanics 3	CU79093V1 - Applied Mechanics 2
2.5	CU23884 - Applied Mechanics 4	CU79094V1 - Applied Mechanics 3

In addition, the following courses and all the relative tests are considered equivalent based on the comparison of the level , competences and learning goals.

Course codes	Description	ECs
CU20596/V1	Introduction CE	2,5
CU79090/V1	Construction Materials 1	2,5
CU20598/V1	Mathematics & Physics	2,5
CU20600/V1	Fluid mechanics 1	2,5
CU26000/V1/V2	Exploring Civil Engineering - Project & Professional Skills 1	5
CU20604/V1	Fluid mechanics 2	2,5
CU79091/V1	Construction Materials 2	2,5
CU20602/V1	Mathematics 1	2,5
CU04206/ to V14	Academic reading for Delta	2,5
CU20603/V1/V2/V3	Exploring Civil Engineering - Project & Professional Skills 2	5
VCCU06284	HZ personality CE 0	1,25
VCCU06283/ to V6	VCA	1,25
CU20605/V1	Soil Mechanics 1	2,5
CU20613/V1	Mathematics 2	2,5
CU79092/V1	Applied Mechanics 1	2,5
CU20607/V1/V2/V3/V4	Sustainability and circularity in Civil Engineering/Dutch Flemish delta polders - Project & Professional Skills 3	5
CU20608/V1	Hydrology	2,5
CU20609/V1	Soil Mechanics 2	2,5
CU79093/V1	Applied Mechanics 2	2,5
CU04207/ to V10	Argument writing and persuasive loop presentation	2,5
CU20612/V1/V2/V3/V4	Sustainability and circularity in Civil Engineering/Dutch Flemish delta polders - Project & Professional Skills 4	5
CU23860/V1/V2	Inland infrastructure development - Project & Professional Skills 5	3,75
CU23877/V1/V2/V3	Inland infrastructure development - Project & Professional Skills 6	3,75
CU23882/V1/V2	Coastal zone development - Project & Professional Skills 7	3,75
CU79094/V1	Applied Mechanics 3	2,5
CU23886/V1	Project Management 2	2,5
CU23887/V1/V2/V3	Coastal zone development - Project & Professional Skills 8	3,75
CU11020 any V/ CU11021V1	Final thesis	30

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

Admission of students with an Associate Degree certificate: Students with an Ad certificate Built environment granted by Avans Hogeschool (Brin 07GR), located in Roosendaal and 's-Hertogenbosch, receive immediate admission. These students can during the first year of registration also register for the post-'propedeuse' phase of the programme. The institutional board exempts them from the requirement of having a certificate for the successful completion of the 'propedeuse' examination (via WHW art. 7.30 paragraph 2). The Examination Board grants students with this certificate individual exemption from taking those examinations for which the Examination Board, prior to the first year of enrolment, has established, based on a programme comparison, that the student possesses the knowledge, insight and skills at the level that is being investigated through these examinations. The students must request exemption to this end in accordance with CER HZ Bachelor program full-time article 4.6. The above does not apply to students with an Ad Built environment certificate issued by other universities of applied sciences than the one mentioned, nor to students with an Ad certificate from a programme other than Ad Built environment. For these students, the usual procedure of applying for exemptions applies according to the exemption policy.

## 2.2.4 Courses 'propedeuse' phase (article 3.5, 3.11A CER HZ Ba ft)

Block 1 / Semester 1													
CU20596V1	Title: Introduction CE					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: The course will explore the many fields and roles in the civil engineering profession. At the end of the course you will have an overview of all the possible job opportunities and specializations. You will also get acquainted with technical drawing techniques and rules necessary to design civil engineering objects.													
Compulsory literature: Bielefeld, B., & Skiba, I. (2017). Basics technical drawing. Birkhäuser.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Portfolio	1.1.1; 4.1.1	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 1 / Semester 1													
CU20598V1	Title: Mathematics & Physics					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: The course deals with mathematics and physics principles applied to the civil engineering profession. At the end of the course you will master fundamental mathematics, differential equations and goniometry.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	3.1.1	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 1 / Semester 1													
CU20600V1	Title: Fluid Mechanics 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: This course presents the basics of fluid mechanics. At the end of this course you will be able to apply the basic properties of fluids and governing laws of fluid mechanics focusing on hydrostatics and pressure flow, including hydrodynamic software modelling (EPANET).													
Compulsory literature: Giles, R. V., Evett, J. B., & Liu, C. (2014). Schaum's outline of fluid mechanics and hydraulics. McGraw-Hill Education.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	3.1.3	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 1 / Semester 1													
CU79090V1	Title: Construction Materials 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: This course will introduce the basics properties of the most common construction materials, such as concrete, steel, timber and masonry. At the end of the course you will be able to choose the most appropriate construction material based on the system requirements.													
Compulsory literature: Illston, J. M., & Domone, P. (2001). Construction materials: their nature and behaviour. CRC press.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Portfolio	1.1.3	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 1 / Semester 1													
CU26000V2	Title: Exploring Civil Engineering - Project & Professional Skills 1					Number of study credits: 5,0 25		Number of contact hours: 30		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: This group project focuses on the professional design of an urban area for real client in a real case scenario. Introduction CE will provide the basic knowledge to understand the different elements of the project, together with the ability to approach technical drawings. Construction Materials 1, Fluid Mechanics 1 and Mathematics & Physics will provide the tools to develop a simple design and detail it. The course provides the theoretical background to approach the project as a research product. This project corresponds to a preliminary design phase during which you will work as a professional engineering team; at the end of the quarter you will deliver a research proposal, a poster presentation and portfolios.													
Compulsory literature: Baarda, D.B. (2014). Research. This is it! Guide to quantitative and qualitative research. 2nd edition. Groningen: Noordhoff Uitgevers. Verhoeven, N. (2015). Doing Research. The hows and whys of applied research. 4th edition. Amsterdam: Boom Lemma. Verschuren, P. & Doorewaard, H. (2010). Designing a Research Project. 2nd edition. Den Haag: Eleven International Publishing.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x			x	Report and presentation (Portfolio)	1.1.2; 1.2.1 2.1.1; 7.1.1; 7.1.2; 7.1.3; 7.4.1; 8.1.1; 8.1.2 ; 9.2.1	50%	5.5	S1.7	S1.9	S1.10	S1.12
TOETS02 (VT)		x			x	Portfolio Fluid Mechanics 1	3.1.9	15%	5.5	S1.7	S1.9	S1.10	S1.12
TOETS03 (VT)		x		x		Portfolio hand drawing	3.1.4	30%	5.5	S1.7	S1.9	S1.10	S1.12
TOETS04 (VT)		x		x		Portfolio peer review and personal reflection	1.3.1; 8.2.1; 9.1.1	5%	5.5	S1.7	S1.9	S1.10	S1.12

<sup>25</sup> For cohort 2017-2018 only, this project is worth 7.5 ECs in combination with the introduction week activities. The course code for cohort 2017-2018 is CU20599.



Block 2 / Semester 1													
CU20602V1	Title: Mathematics 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: The course will teach to apply mathematical knowledge and skills to obtain the required calculation level for civil engineering professionals. At the end of this course you will master functions, differential equations and partial derivation.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	3.1.1	100%	5.5	S1.18	S1.19	S1.20	S2.2

Block 2 / Semester 1													
CU79091V1	Title: Construction Materials 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: This course presents the internal properties of structural cross sections and teaches how to calculate moment of inertia and moment of resistance for complex cross sections. At the end of the course you will be able to determine the distribution of internal stresses in structural sections.													
Compulsory literature: Hibbeler, R. C. (2018). Statics and Mechanics of Materials. Pearson Higher Ed.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	3.1.5	100%	5.5	S1.18	S1.19	S1.20	S2.2

Block 2 / Semester 1													
CU20604V1	Title: Fluid Mechanics 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: At the end of this course you will be able to apply the basic properties of fluids and governing laws of fluid mechanics focusing on open channel flow and identifying elements of sewerage networks, including hydrodynamic software modelling (SOBEK).													
Compulsory literature: Giles, R. V., Evett, J. B., & Liu, C. (2014). Schaum's outline of fluid mechanics and hydraulics. McGraw-Hill Education.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	3.1.6	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: -													
Conditions for test participation: <i>Complete language exercises and assignments to prepare for the presentation and report</i>													
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; analyze academic writing in terms of rhetorical purpose, audience, content, genre, pattern of development and stylistic features; distinguish between fact and opinion; analyze 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: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Reading exam (Written knowledge test)	-	50%	5.5	S1.9	S1.10	S1.20	S2.1
TOETS02 (VT)	x				x	Presentation (Oral assessment)	-	50%	5.5	S1.18	S1.19	S1.20	S2.1

Block 2 / Semester 1													
CU20603V3	Title: Exploring Civil Engineering - Project & Professional Skills 2					Number of study credits: 5		Number of contact hours: 30		Mandatory	Teaching language: Dutch/English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: This group project focus on the professional design of an urban area for real client in a real case scenario. Construction Materials 2, Fluid mechanics 2 and Mathematics 1 provide the tools to develop a simple design and to detail it. The course provides the theoretical background to approach the project as a research product and to move from hand drawing to software drawings using AutoCAD. This project corresponds to a detailed design phase during which you will work as a professional engineering team; at the end of the quarter you will deliver a research report, a power point presentation and portfolios.													
Compulsory literature: Baarda, D.B. (2014). Research. This is it! Guide to quantitative and qualitative research. 2nd edition. Groningen: Noordhoff Uitgevers. Verhoeven, N. (2015). Doing Research. The hows and whys of applied research. 4th edition. Amsterdam: Boom Lemma. Verschuren, P. & Doorewaard, H. (2010). Designing a Research Project. 2nd edition. Den Haag: Eleven International Publishing.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x			x	Report and presentation (Portfolio)	2.2.1; 7.2.1; 7.2.2; 7.3.1; 7.3.2; 7.4.1; 8.1.1; 8.1.2; 9.2.1	50%	5.5	S1.17	S1.19	S1.20	S2.2
TOETS02 (VT)		x			x	Portfolio Fluid mechanics 2	4.1.2; 3.1.9	15%	5.5	S1.17	S1.19	S1.20	S2.2
TOETS03 (VT)		x			x	Portfolio Construction materials	4.1.2	15%	5.5	S1.17	S1.19	S1.20	S2.2
TOETS04 (VT)		x		x		Portfolio AutoCAD	3.1.4	15%	5.5	S1.17	S1.19	S1.20	S2.2
TOETS05 (VT)		x		x		Portfolio peer review and personal reflection	1.3.1; 8.2.1; 9.1.1	5%	5.5	S1.17	S1.19	S1.20	S2.2

Block 3 / Semester 2													
CU79092V1	Title: Applied Mechanics 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: During this course you will get acquainted with the basics of applied mechanics, such as the resultant of all forces, the load types and equilibrium of single particles and cantilevered or fixed end statically determined beams. At the end of the course you will be able to describe the distribution of internal forces in statically determined members.													
Compulsory literature: Hibbeler, R. C. (2018). Statics and Mechanics of Materials. Pearson Higher Ed.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	3.1.2	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2													
CU20605V1	Title: Soil Mechanics 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: This course will introduce the basics of soil mechanics. At the end of the course you will know how to identify the basic material properties of soil and be able to calculate vertical earth pressures, settlements, including the incorporation of consolidation.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	3.1.7	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2														
CU20613V1	Title: Mathematics 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English			
Conditions for course participation: -														
Conditions for test participation: -														
Brief description of course content: The course deals with mathematics and physics principles applied to the civil engineering profession. At the end of this course you will master integrations, vectors and matrices and complex functions.														
Compulsory literature: -														
Test code		Format <i>Verbal/Written/Other Individually/Group</i>				Description and assessment type	Content <i>Link with learning outcomes</i>	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
TOETS01 (VT)			x		x		Written knowledge test	3.1.1	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 3 / Semester 2													
VCCU06283V6	Title: VCA					Number of study credits: 1.25		Number of contact hours: 0		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: This course allows you to gain a Safety for Operational Supervisors diploma. This diploma is often necessary to gain access to construction sites and workshops. You will study for the theoretical part on your own, and the practice exams will be offered in HZ by an external organization. You will receive an email that will invite you to register to the exam. Our study program finances only two attempts for each students. All other attempts must be paid by the students. This course belongs to HZ personality.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Certificate	-	100%	6.5 <sup>26</sup>	Various	Various	Various	Various

<sup>26</sup> The minimum score of 6.5 (65%) is set by the VCA organization and is required to pass the exam and achieve the VCA certificate.

Block 3 / Semester 2													
VCCU06284	Title: HZ personality CE 0					Number of study credits: 1.25		Number of contact hours: various		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: You can fill this space with various activities for a total of 35 work hours. You can propose activities yourself, which you must submit to your study career coach for approval. The study program invites you to take part to internal activities to fill up this space, such us by participating to the We Explore Together technology project week, by enrolling as class representative, by being member of the program committee, by helping in marketing and promotional activities, etc. More information about the HZ personality policy is available at the course Learn page.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x	x	x	x	Various	-	100%	5.5	Variable	Variable	Variable	Variable

Block 3 / Semester 2													
CU20607V4	Title: Sustainability and circularity in Civil Engineering - Project & Professional Skills 3					Number of study credits: 5		Number of contact hours: 30		Mandatory	Teaching language: Dutch/English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: This group project focuses on the professional design of a sustainable and circular urban system for a real client in a real case scenario. Applied mechanics and soil mechanics provide the background knowledge to understand the system and provide possible solutions for the design case. Laboratory experiments and field work involve all the disciplines. This project corresponds to a preliminary design phase during which you will work as a professional engineering team; at the end of the quarter you will deliver a research proposal, a poster presentation and a portfolios.													
Compulsory literature: Baarda, D.B. (2014). Research. This is it! Guide to quantitative and qualitative research. 2nd edition. Groningen: Noordhoff Uitgevers. Verhoeven, N. (2015). Doing Research. The hows and whys of applied research. 4th edition. Amsterdam: Boom Lemma. Verschuren, P. & Doorewaard, H. (2010). Designing a Research Project. 2nd edition. Den Haag: Eleven International Publishing.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x			x	Report and presentation (Portfolio)	1.1.2; 1.2.1; 2.1.1; 7.1.1; 7.1.2; 7.1.3; 7.4.1; 8.1.1; 8.1.2; 9.2.1	50%	5.5	S2.7	S2.9	S2.10	S2.12
TOETS02 (VT)		x			x	Portfolio Applied Mechanics 1	3.1.9	25%	5.5	S2.7	S2.9	S2.10	S2.12
TOETS03 (VT)		x			x	Portfolio Soil Mechanics 1	4.1.2	20%	5.5	S2.7	S2.9	S2.10	S2.12
TOETS04 (VT)		x		x		Portfolio peer review and personal reflection	1.3.1; 8.2.1; 9.1.1	5%	5.5	S2.7	S2.9	S2.10	S2.12

Block 4 / Semester 2													
CU20608V1	Title: Hydrology					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: At the end of this course you will be able to understand the hydrological/water cycle and water resources, in order to carry out rainfall-runoff analysis, hydrological modelling and hydrometry.													
Compulsory literature: Shaw, E. M., Beven, K., Chappell, N., & Lamb, R. (2010). Hydrology in practice 4th edition.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.4	100%	5.5	S2.18	S2.19	S2.20	S2.22

Block 4 / Semester 2													
CU20609V1	Title: Soil Mechanics 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: At the end of this course you will be able to understand and apply the basic theory regarding shear stresses, slope stability and ground water flow to simple soil mechanical problems.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.5	100%	5.5	S2.18	S2.19	S2.20	S2.22



Block 4 / Semester 2													
CU79093V1	Title: Applied Mechanics 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: At the end of this course you will be able to calculate loads and combinations, determine distribution of internal forces and stresses in hinged structures and trusses, and calculate torsion in simple structures.													
Compulsory literature: Hibbeler, R. C. (2018). Statics and Mechanics of Materials. Pearson Higher Ed.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	3.1.8	100%	5.5	S2.18	S2.19	S2.20	S2.22

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: -													
Conditions for test participation: <i>Complete language exercises and assignments to prepare for the report</i>													
<b>Brief description of course content:</b> 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: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)			x	x		Essay (Assignment)	-	50%	5.5	S2.8	S2.9	S2.10	S2.12
TOETS02 (VT)	x			x		Presentation (Oral assessment)	-	50%	5.5	S2.18 & S2.19	S2.18 & S2.19	S2.20	S2.20

Block 4 / Semester 2													
CU20612V4	Title: Sustainability and circularity in Civil Engineering - Project & Professional Skills 4					Number of study credits: 5		Number of contact hours: 30		Mandatory	Teaching language: Dutch/English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: This group project focuses on the professional design of a sustainable and circular urban system for a real client in a real case scenario. Applied mechanics and soil mechanics provide the background knowledge to understand the system and provide possible solutions for the design case. Laboratory experiments and field work involve all the disciplines. With AutoCAD Civil 3D, land surveying and GIS you will understand and explain cartography, geodesy, satellite geodesy, and topography and draw 3D elements in AutoCAD. This project corresponds to a detailed design phase during which you will work as a professional engineering team; at the end of the quarter you will deliver a research report, a power point presentation and a portfolios.													
Compulsory literature: Baarda, D.B. (2014). Research. This is it! Guide to quantitative and qualitative research. 2nd edition. Groningen: Noordhoff Uitgevers. Verhoeven, N. (2015). Doing Research. The hows and whys of applied research. 4th edition. Amsterdam: Boom Lemma. Verschuren, P. & Doorewaard, H. (2010). Designing a Research Project. 2nd edition. Den Haag: Eleven International Publishing.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x			x	Report and presentation (Portfolio)	2.2.1; 5.1.1; 6.1.1; 7.2.1; 7.2.2;7.3.1; 7.3.2;7.4.1; 8.1.1;8.1.2; 9.2.1	40%	5.5	S2.17	S2.19	S2.20	S2.22
TOETS02 (VT)		x			x	Portfolio Applied Mechanics 2	3.1.9	20%	5.5	S2.17	S2.19	S2.20	S2.22
TOETS03 (VT)		x			x	Portfolio practical <sup>27</sup>	4.1.1; 6.1.2	15%	5.5	S2.17	S2.19	S2.20	S2.22
TOETS04 (VT)		x		x		Portfolio AutoCAD Civil 3D	3.1.9	10%	5.5	S2.18	S2.19	S2.20	S2.22
TOETS05 (VT)		x		x		Portfolio GIS	3.1.9	10%	5.5	S2.18	S2.19	S2.20	S2.22
TOETS06 (VT)		x		x		Portfolio peer review and personal reflection	1.3.1;8.2.1; 9.1.1	5%	5.5	S2.17	S2.19	S2.20	S2.22

<sup>27</sup> This portfolio includes the practicals of Surveying, Soil Mechanics 2, and Hydrology (each of those contributes to 5% of the final grade).

## 2.2.5 Main phase courses (article 3.6, 3.11A CER HZ ba ft)

Block 5 / Semester 3													
CU23856	Title: Transport Infrastructure 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: Good infrastructure is a must to transport goods to and from the hinterland. Historically speaking, delta areas could not develop without infrastructure (roads). In areas where roads were built, harbours were thriving and cities were developing. In this course, you will learn how to design, build and maintain a road.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.6; 3.1.12	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 5 / Semester 3													
CU23857	Title: Structural Engineering 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: In the course you will broaden the knowledge about concrete constructions as well as of the mechanics required to calculate the force distribution. After this course, you will be able to design and concrete beams and floors using the existing regulations, such as NEN standards and in the near future the European building regulations established in the Eurocodes.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.7; 3.1.13	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 5 / Semester 3													
CU23875	Title: Environmental Engineering					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: Understand fundamental processes/concepts needed for a sustainable living environment as material separation in waste processing, air pollution and water pollution.													
Compulsory literature: Mines Jr, R. O. (2014). Environmental engineering: principles and practice. John Wiley & Sons.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.8	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 5 / Semester 3													
CU23859	Title: Foundations 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: This course deals with shallow foundations and pile foundations and it will present the basic knowledge needed for the selection and the design of the most suitable foundation systems considering the boundary conditions and limitations deduced by the geotechnical characteristics and soil properties.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.9; 3.1.11	100%	5.5	S1.8	S1.9	S1.10	S1.12

Block 5/ Semester 3													
CU23860V2	Title: Inland infrastructure development - Project & Professional Skills 5					Number of study credits: 3.75		Number of contact hours: 30		Mandatory	Teaching language: Dutch/English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: This group project focus on the development of inland areas for a real client in a real case scenario. Environmental engineering is fundamental to create a sustainable and resilient environment, while new roads need to be designed in order to connect the new areas with the existing infrastructure. The design of new roads will require concrete constructions and foundation systems. Design software, such as Sobek, Technosoft, D-sheets, etc., are needed to develop your design. This project corresponds to a preliminary design phase during which you will work as a professional engineering team.													
Compulsory literature: Baarda, D.B. (2014). Research. This is it! Guide to quantitative and qualitative research. 2nd edition. Groningen: Noordhoff Uitgevers. Verhoeven, N. (2015). Doing Research. The hows and whys of applied research. 4th edition. Amsterdam: Boom Lemma. Verschuren, P. & Doorewaard, H. (2010). Designing a Research Project. 2nd edition. Den Haag: Eleven International Publishing.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x			x	Report and presentation (Portfolio)	1.1.2; 1.2.1; 2.1.1; 7.1.1; 7.1.2; 7.1.3; 7.4.1; 8.1.1; 8.1.2; 9.2.1	50%	5.5	S1.7	S1.9	S1.10	S1.12
TOETS02 (VT)		x			x	Portfolio Transport infrastructure 1	3.1.9	10%	5.5	S1.7	S1.9	S1.10	S1.12
TOETS03 (VT)		x			x	Portfolio Structural engineering 1	3.1.9	14%	5.5	S1.7	S1.9	S1.10	S1.12
TOETS04 (VT)		x			x	Portfolio Environmental Engineering	3.1.9	10%	5.5	S1.7	S1.9	S1.10	S1.12
TOETS05 (VT)		x			x	Portfolio Foundations 1	3.1.9	10%	5.5	S1.7	S1.9	S1.10	S1.12
TOETS06 (VT)		x		x		Portfolio peer review and personal reflection	1.3.1;8.2.1; 9.1.1	6%	5.5	S1.7	S1.9	S1.10	S1.12

Block 5 / Semester 3													
CU206001	Title: HZ personality CE 1					Number of study credits: 1.25		Number of contact hours: various		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: You can fill this space with various activities for a total of 35 work hours. You can propose activities yourself, which you must submit to your study career coach for approval. The study program invites you to take part to internal activities to fill up this space, such as by participating to the We Explore Together technology project week, by enrolling as class representative, by being member of the program committee, by helping in marketing and promotional activities, etc. More information about the HZ personality policy is available at the course Learn page.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x	x	x	x	Various	-	100%	5.5	Variable	Variable	Variable	Variable

Block 6 / Semester 3													
CU206002	Title: HZ personality CE 2					Number of study credits: 1.25		Number of contact hours: various		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: You can fill this space with various activities for a total of 35 work hours. You can propose activities yourself, which you must submit to your study career coach for approval. The study program invites you to take part to internal activities to fill up this space, such us by participating to the We Explore Together technology project week, by enrolling as class representative, by being member of the program committee, by helping in marketing and promotional activities, etc. More information about the HZ personality policy is available at the course Learn page.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x	x	x	x	Various	-	100%	5.5	Variable	Variable	Variable	Variable

Block 6 / Semester 3													
CU23861	Title: Transport Infrastructure 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: Good infrastructure is a must to transport goods to and from the hinterland. Historically speaking, delta areas could not develop without infrastructure (roads). In areas where roads were built, harbours were thriving and cities were developing. In this course, you will learn how to design, build and maintain a road.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.10; 3.1.15	100%	5.5	\$1.18	\$1.19	\$1.20	\$2.2

Block 6 / Semester 3													
CU23874	Title: Structural Engineering 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: In the course you will broaden the knowledge about drawing and detailed design of concrete constructions as well as design of steel constructions. After this course, you will be able to design and concrete beams and floors and steel members using the existing regulations, such as NEN standards and in the near future the European building regulations established in the Eurocodes.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.13; 3.1.19; 3.1.27	100%	5.5	S1.18	S1.19	S1.20	S2.2

Block 6 / Semester 3													
CU23858	Title: Rural Water Management					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: This course deals with water management in rural areas. Important themes are preventing water nuisance, optimum matching of groundwater and agricultural use, preventing salination and limiting water shortages during drought. The water system in the outer areas is very complex, which is why simulation software (Sobek) is used. By the end of this course you will be able to design an irrigation and drainage system in a rural area balancing water supply and water requirements in time and space.													
Compulsory literature: Waller, P., & Yitayew, M. (2015). Irrigation and drainage engineering. Springer.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.12; 3.1.10	100%	5.5	S1.18	S1.19	S1.20	S2.2

Block 6 / Semester 3													
CU23876	Title: Foundations 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: This course deals with flexible retaining structures and it will present the basic knowledge needed for the selection and the design of the most suitable foundation systems considering the boundary conditions and limitations deduced by the geotechnical characteristics and soil properties.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.14; 3.1.14	100%	5.5	S1.18	S1.19	S1.20	S2.2



Block 6/ Semester 3													
CU23877V3	Title: Inland infrastructure development - Project & Professional Skills 6					Number of study credits: 3.75		Number of contact hours: 30		Mandatory	Teaching language: Dutch/English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: This group project focus on the development of inland areas for a real client in a real case scenario. Rural water management is fundamental to create a sustainable and resilient environment, while new roads need to be designed in order to connect the new areas with the existing infrastructure. The design of new roads will require concrete constructions and foundation systems. Design software, such as Sobek, Technosoft, D-sheets, etc., are needed to develop your design. This project corresponds to a detailed design phase during which you will work as a professional engineering team; at the end of the quarter you will deliver a research report, a power point presentation and a portfolio.													
Compulsory literature: Baarda, D.B. (2014). Research. This is it! Guide to quantitative and qualitative research. 2nd edition. Groningen: Noordhoff Uitgevers. Verhoeven, N. (2015). Doing Research. The hows and whys of applied research. 4th edition. Amsterdam: Boom Lemma. Verschuren, P. & Doorewaard, H. (2010). Designing a Research Project. 2nd edition. Den Haag: Eleven International Publishing.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x			x	Report and presentation (Portfolio)	2.2.1; 3.1.9; 6.1.1; 7.2.1; 7.2.2;7.3.1; 7.3.2;7.4.1; 8.1.1; 9.2.1	50%	5.5	S1.17	S1.19	S1.20	S2.22
TOETS02 (VT)		x			x	Portfolio Transport infrastructure 2	3.1.9	10%	5.5	S1.17	S1.19	S1.20	S2.22
TOETS03 (VT)		x			x	Portfolio Structural engineering 2	3.1.9	10%	5.5	S1.17	S1.19	S1.20	S2.22
TOETS04 (VT)		x			x	Portfolio Rural water management	3.1.9	10%	5.5	S1.17	S1.19	S1.20	S2.22
TOETS05 (VT)		x			x	Portfolio Foundations 2	3.1.9	14%	5.5	S1.17	S1.19	S1.20	S2.22
TOETS06 (VT)		x		x		Portfolio peer review and personal reflection	1.3.1; 8.2.1; 9.1.1	6%	5.5	S1.17	S1.19	S1.20	S2.22

Block 7 / Semester 4													
CU23878	Title: Coastal Engineering 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: This course introduces the basics of coastal engineering, such as safety, tides, and waves. The different kinds of coasts are distinguished based on their morphological activity, location, etc. At the end of this course you will be able to design safe coastal environments using dunes and dikes.													
Compulsory literature: Bosboom, J. and Stive, M.J.F. (2022) Coastal Dynamics <a href="https://doi.org/10.5074/T.2021.001">https://doi.org/10.5074/T.2021.001</a> ISBN 978-94-6366-371-7 Free for download at the link <a href="https://textbooks.open.tudelft.nl/textbooks/%20catalog/book/37">https://textbooks.open.tudelft.nl/textbooks/%20catalog/book/37</a>													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.15	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 7 / Semester 4													
CU23879	Title: Structural Engineering 3					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: In the course you will broaden the knowledge about steel constructions. After this course, you will be able to design and steel members using the existing regulations, such as NEN standards and in the near future the European building regulations established in the Eurocodes.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.13; 3.1.19	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 7 / Semester 4													
CU23880	Title: Water supply and Sanitation					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: This course deals with water distribution and water and wastewater treatment. At the end of this course you will be able to explain and compare different (waste)water treatment technologies and design different treatment units. Design a water distribution network and analyse the performance of the system under diverse system conditions using a hydrodynamic computer model.													
Compulsory literature: Mines Jr, R. O. (2014). Environmental engineering: principles and practice. John Wiley & Sons.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.16; 3.1.18	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 7 / Semester 4													
CU23881	Title: Project Management 1					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: The course prepares you for a professional role in the management of engineering projects by providing you with an understanding of both the people-related and technical requirements necessary for the successful management of engineering projects, as well as the organizational and strategic aspects. This course is designed to introduce course participants to the nature and purpose of project management and to engage with its application in project contexts.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.2; 1.1.17; 8.2.2	100%	5.5	S2.8	S2.9	S2.10	S2.12

Block 7/ Semester 4													
CU23882V2	Title: Coastal zone development - Project & Professional Skills 7					Number of study credits: 3.75		Number of contact hours: 30		Mandatory	Teaching language: Dutch/English		
Conditions for course participation: The course will be also given in Dutch if at least 10 students subscribe for it													
Conditions for test participation: -													
Brief description of course content: This group project focus on the development of coastal areas for a real client in a real case scenario. The knowledge of the coastal environments is fundamental to ensure a safe and sustainable development. Project management skills and competences are required to plan, monitor and control the design and construction processes. Water supply systems and structural objects must be designed to complete the design of the coastal area. This project corresponds to a preliminary design phase during which you will work as a professional engineering team.													
Compulsory literature: Baarda, D.B. (2014). Research. This is it! Guide to quantitative and qualitative research. 2nd edition. Groningen: Noordhoff Uitgevers. Verhoeven, N. (2015). Doing Research. The hows and whys of applied research. 4th edition. Amsterdam: Boom Lemma. Verschuren, P. & Doorewaard, H. (2010). Designing a Research Project. 2nd edition. Den Haag: Eleven International Publishing.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x			x	Report and presentation (Portfolio)	1.1.2; 1.2.1; 1.3.1; 2.1.1; 7.1.2; 7.1.3; 7.4.1; 8.1.1; 8.1.2; 9.2.1	50%	5.5	S2.7	S2.9	S2.10	S2.12
TOETS02 (VT)		x			x	Portfolio Project Management 1	4.1.1, 4.1.6	10%	5.5	S2.7	S2.9	S2.10	S2.12
TOETS03 (VT)		x			x	Portfolio Coastal Engineering 1	1.1.20; 1.3.3; 5.1.1	10%	5.5	S2.7	S2.9	S2.10	S2.12
TOETS04 (VT)		x			x	Portfolio Structural engineering 3	3.1.9	10%	5.5	S2.7	S2.9	S2.10	S2.12
TOETS05 (VT)		x			x	Portfolio Water supply and sanitation	3.1.9	10%	5.5	S2.7	S2.9	S2.10	S2.12
TOETS06 (VT)		x		x		Portfolio peer review and personal reflection	8.2.1; 9.1.1	10%	5.5	S2.7	S2.9	S2.10	S2.12

Block 7 / Semester 4													
CU206003	Title: HZ personality CE 3					Number of study credits: 1.25		Number of contact hours: various		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: You can fill this space with various activities for a total of 35 work hours. You can propose activities yourself, which you must submit to your study career coach for approval. The study program invites you to take part to internal activities to fill up this space, such us by participating to the We Explore Together technology project week, by enrolling as class representative, by being member of the program committee, by helping in marketing and promotional activities, etc. More information about the HZ personality policy is available at the course Learn page.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x	x	x	x	Various	-	100%	5.5	Variable	Variable	Variable	Variable

Block 8 / Semester 4													
CU206004	Title: HZ personality CE 4					Number of study credits: 1.25		Number of contact hours: various		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: You can fill this space with various activities for a total of 35 work hours. You can propose activities yourself, which you must submit to your study career coach for approval. The study program invites you to take part to internal activities to fill up this space, such as by participating to the We Explore Together technology project week, by enrolling as class representative, by being member of the program committee, by helping in marketing and promotional activities, etc. More information about the HZ personality policy is available at the course Learn page.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x	x	x	x	Various	-	100%	5.5	Variable	Variable	Variable	Variable

Block 8 / Semester 4													
CU23883	Title: Coastal Engineering 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: At the end of this course you will be able to design and calculate hard and soft coastal defence structures such as a dike profile with different types of revetment, taking the environment and climate change into account. You will be able to understand the most important failure mechanisms of dikes and how to prevent failure.													
Compulsory literature: Bosboom, J. and Stive, M.J.F. (2022) Coastal Dynamics <a href="https://doi.org/10.5074/T.2021.001">https://doi.org/10.5074/T.2021.001</a> ISBN 978-94-6366-371-7 Free for download at the link <a href="https://textbooks.open.tudelft.nl/textbooks/%20catalog/book/37">https://textbooks.open.tudelft.nl/textbooks/%20catalog/book/37</a>													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.18; 3.1.20; 3.1.25	100%	5.5	S2.18	S2.19	S2.20	S2.22

Block 8 / Semester 4													
CU79094V1	Title: Applied Mechanics 3					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: At the end of this course you will be able to draw the N-, V- and M-diagram and deflection curve of statically indeterminate beams to the first and second degree. You will know the principles of pre-stressed concrete constructions.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	3.1.21	100%	5.5	S2.18	S2.19	S2.20	S2.22

Block 8 / Semester 4													
CU23885		Title: Dredging and Ecology				Number of study credits: 2.5		Number of contact hours: 21		Mandatory		Teaching language: English	
Conditions for course participation: -													
Conditions for test participation: -													
Brief description of course content: At the end of this course you will understand the world of dredging and you will be able to select the best equipment and systems depending on the geotechnical and soil characteristics. The dredging activities will be analyzed also under the ecological point of view.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Written knowledge test	1.1.19; 4.1.4	100%	5.5	S2.18	S2.19	S2.20	S2.22

Block 8 / Semester 4													
CU23886V1	Title: Project Management 2					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch/ English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it</i>													
Conditions for test participation: -													
Brief description of course content: The course prepares you for a professional role in the management of engineering projects by providing you with an understanding of both the people-related and technical requirements necessary for the successful management of engineering projects, as well as the organizational and strategic aspects. This course is designed to introduce course participants to the nature and purpose of project management and to engage with its application in project contexts.													
Compulsory literature:													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x			x	Portfolio	1.1.20; 4.1.5	100%	5.5	S2.18	S2.19	S2.20	S2.22

Block 8 / Semester 4													
CU238863	Title: Project Management 2 3yt					Number of study credits: 2.5		Number of contact hours: 21		Mandatory	Teaching language: Dutch/ English		
Conditions for course participation: <i>The course will be also given in Dutch if at least 10 students subscribe for it. This course is available only for students enrolled in the 3 years VWO track.</i>													
Conditions for test participation: <i>To participate to toets02(VT), students should have a passing grade for toets01(VT)</i>													
Brief description of course content: The course prepares you for a professional role in the management of engineering projects by providing you with an understanding of both the people-related and technical requirements necessary for the successful management of engineering projects, as well as the organizational and strategic aspects. This course is designed to introduce course participants to the nature and purpose of project management and to engage with its application in project contexts.													
Compulsory literature:													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x			x	Portfolio	1.1.20; 4.1.5	40%	5.5	S2.18	S2.19	S2.20	S2.22
TOETS02 (VT)	x			x		Oral assessment	4.1.5; 5.1.1; 6.1.3	60%	5.5	S2.19	S2.19	S2.20	S2.20



Block 8/ Semester 4													
CU23887V3	Title: Coastal zone development - Project & Professional Skills 8					Number of study credits: 3.75		Number of contact hours: 30		Mandatory	Teaching language: Dutch/English		
Conditions for course participation: The course will be also given in Dutch if at least 10 students subscribe for it													
Conditions for test participation: -													
Brief description of course content: This group project focus on the development of coastal areas for a real client in a real case scenario. The knowledge of the coastal environments is fundamental to ensure a safe and sustainable development. Project management skills and competences are required to plan, monitor and control the design and construction processes. Water supply systems and structural objects must be designed to complete the design of the coastal area. This project corresponds to a detailed design phase during which you will work as a professional engineering team.													
Compulsory literature: Baarda, D.B. (2014). Research. This is it! Guide to quantitative and qualitative research. 2nd edition. Groningen: Noordhoff Uitgevers. Verhoeven, N. (2015). Doing Research. The hows and whys of applied research. 4th edition. Amsterdam: Boom Lemma. Verschuren, P. & Doorewaard, H. (2010). Designing a Research Project. 2nd edition. Den Haag: Eleven International Publishing.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)			x	x		Field study week (Portfolio)	8.1.1; 8.2.2; 9.1.2	10%	5.5	Variable	Variable	Variable	Variable
TOETS02 (VT)	x	x			x	Report and presentation (Portfolio)	2.2.1; 7.2.1; 7.2.2; 7.3.1; 7.3.2; 7.4.1; 8.1.1; 8.1.2; 9.2.1	50%	5.5	S2.17	S2.19	S2.20	S2.22
TOETS03 (VT)		x			x	Portfolio Coastal Engineering 2	1.1.20; 1.3.3; 3.1.4; 3.1.20; 3.1.25; 3.1.26	10%	5.5	S2.17	S2.19	S2.20	S2.22
TOETS04 (VT)		x			x	Portfolio Project Management 2	4.1.1; 4.1.5	10%	5.5	S2.17	S2.19	S2.20	S2.22
TOETS05 (VT)		x			x	Portfolio Dredging	4.1.3; 4.1.5	10%	5.5	S2.17	S2.19	S2.20	S2.22
TOETS06 (VT)		x			x	Portfolio Applied Mechanics 3	3.1.9	10%	5.5	S2.17	S2.19	S2.20	S2.22

Semester 5/6 for four year track only													
CU11022V14	Title: Orientation Internship <sup>28</sup>					Number of study credits: 30		Number of contact hours: 12		Mandatory	Teaching language: Dutch / English		
Conditions for course participation: See article 2.2.8 in this document for the rules of admission to the internship.													
Conditions for test participation: See article 2.2.8 in this document for the rules of admission to the internship.													
Brief description of course content: At the end of this course you will understand the world of dredging and you will be able to select the best equipment and systems depending on the geotechnical and soil characteristics. The dredging activities will be analyzed also under the ecological point of view.													
Compulsory literature: -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	Weighting Factor (%)	Minimum score	Planning test in week <sup>29</sup>	Inspection of work in week	Resit scheduled in week	Inspection of resit in week
	V	W	O	I	G								
TOETS01 (VT)		x		x		Report (Portfolio)	4.1.5; 5.1.1 6.1.3; 8.1.2 8.2.2; 9.1.2	100%	5.5	S1.18 S1.20 S2.18 S2.20	S1.18 S1.20 S2.18 S2.20	S1.20 S2.18 S2.20	S1.20 S2.18 S2.20

#### Semester 7 for four year track only

<sup>28</sup> This course does not belong to the study plan of students following the three years track, as from chapter 2.2.3.

<sup>29</sup> The student has right to two attempts per study year. The student makes a selection for the attempts through Osiris student.

CU79085V1	Title: Integrated coastal challenge <sup>30</sup>					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 <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Assessment professional development (Portfolio)	8.2.2; 9.1.2; 9.2.2	40%	5.5	S1.19	S1.19	S1.20	S2.2
TOETS02 (VT)		x			x	End products (Portfolio)	1.1.21; 1.2.2; 1.3.2; 1.3.3; 1.3.4; 2.1.2; 2.2.2; 2.2.3; 3.1.26; 7.1.4; 7.2.3; 7.3.3; 7.4.2; 8.1.3; 8.1.4	40%	5.5	S1.17	S1.18	S1.19	S1.20
TOETS03 (VT)	x				x	Presentation	8.1.3; 8.1.4; 9.1.2; 9.2.2	20%	5.5	S1.18	S1.19	S1.20	S2.2

<sup>30</sup> This course belongs to HZ personality.

Semester 7 for four year track only													
CU79086V1	Title: Advanced Construction Engineering					Number of study credits: 10		Number of contact hours: 70		Elective		Teaching language: English	
Conditions for course participation: <i>The course will only be given if at least 10 students subscribe for this elective course</i>													
Conditions for test participation: -													
Brief description of course content: : A good <u>Construction Engineer</u> not only has the skills to construct Civil assets, but also has a good understanding of the underlying design and maintenance aspects. On the other hand it is essential that <u>Design Engineers</u> also know which building methods are best applicable in which situation and have a sharp eye of the maintenance aspects to guarantee an optimal functioning of an asset during its service lifetime. In-depth design knowledge helps <u>Asset Managers</u> to be able to assess the asset's condition and to understand which measures are needed to rehabilitate the structure. A good <u>Engineer Consultant for a Client</u> must understand the complexities of significant construct, design and maintenance aspects. This advanced course provides a solid and broad foundation to become a very skilled professional. You will learn how to design and construct a wide range of civil structures, with emphasis on Underground and Hydraulic Structures. You will learn how to apply Asset Management skills, not only process wise but also with technical in-depth knowledge of how to recover aging infrastructure. The course focusses on applying in depth theory in practical real life cases, often located in the soft soil of urban delta areas. Key words are: design and construct of reinforced and post-tensioned concrete underground structures, temporary works, foundations, dewatering systems, construction pits, retaining structures, quay walls, jetties, piled fendering, and optional hydraulic infra, asset management processes in practice, technical knowledge for condition assessment and rehabilitation of existing 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: De Gijt, J.G., Broeken, M.L., CUR Centre For Civil Engineering (2014) <i>Handbook Quay Walls</i> (2 <sup>nd</sup> edition). London CRC Press.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x			x	Portfolio Temporary Works Construction Pit (Portfolio)	1.1.9; 1.2.1; 2.1.1; 2.2.1; 3.1.9; 3.1.11; 3.1.22; 3.1.23; 8.1.1; 8.1.2; 8.2.1; 8.2.2; 9.1.1	25%	5.5	S1.07	S1.09	S1.10	S1.11
TOETS02 (VT)		x		x		Mid-term exam Underground Temporary Works Construction Pit Underground Concrete Structures (Written knowledge test)	1.1.9; 1.2.1; 2.2.1; 2.2.3; 3.1.22; 3.1.23	25%	5.5	S1.08	S1.09	S1.10	S1.11

TOETS03 (VT)		x			x	Portfolio Asset Management (Portfolio)	1.1.12; 1.2.1; 4.1.6; 5.1.1; 5.1.4; 5.1.5; 5.1.6; 6.1.1; 7.2.1; 7.3.1; 8.1.1; 8.1.2; 8.2.1; 8.2.2; 9.1.1	25%	5.5	S1.17	S1.19	S1.20	S2.2
TOETS04 (VT)		x		x		Final exam Asset Management (Hydraulic) Structures (Written knowledge test)	1.1.12; 1.2.1; 3.1.24; 3.1.25; 4.1.6; 5.1.2; 5.1.3; 5.1.4; 5.1.5; 5.1.6	25%	5.5	S1.18	S1.19	S1.20	S2.2

Semester 7 for four year track only													
CU79087V1	Title: Urban Water Management					Number of study credits: 10		Number of contact hours: 70		Elective	Teaching language: English		
Conditions for course participation: <i>The course will only be given if at least 10 students subscribe for this elective course</i>													
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 <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x			x	Portfolio sewer systems design (Portfolio)	1.1.4; 1.1.16; 2.1.2; 2.2.2; 2.2.3; 3.1.1; 3.1.9; 3.1.25; 7.2.1; 8.1.3; 8.1.4	30%	5.5	S1.08	S1.09	S1.10	S1.11
TOETS02 (VT)		x			x	Portfolio asset management (Portfolio)	1.1.20; 1.1.21; 1.3.2; 1.3.3; 1.3.4; 5.1.1; 5.1.2; 5.1.3; 5.1.4; 5.1.6; 8.2.1; 8.2.2, 9.2.1, 9.2.2	30%	5.5	S1.18	S1.19	S1.20	S2.2
TOETS03 (VT)		x		x		Final exam (Written knowledge test)	1.1.4; 1.1.12; 1.1.20; 1.1.21; 1.3.2; 2.2.2; 3.1.1; 3.1.9; 3.1.25; 5.1.1; 5.1.2; 5.1.3; 5.1.4	40%	5.5	S1.18	S1.19	S1.20	S2.2

Semester 7 for four year track only													
CU20700V1	Title: Advanced Water Technology					Number of study credits: 10		Number of contact hours: 90		Elective		Teaching language: English	
<b>Conditions for course participation:</b> <ul style="list-style-type: none"><li>• The course will only be given if at least 8 students subscribe for this elective course</li><li>• Applicants should have a biology and chemistry profile for their high school diploma</li><li>• Applicants should have completed the course Water supply and sanitation (CU23880) with a grade of 7.5 or higher</li><li>• Applicants should register for the course by the end of May 2022 by contacting their study career coach</li></ul>													
<b>Conditions for test participation:</b> -													
<b>Brief description of course content:</b> : 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.													
<b>Compulsory literature:</b> -													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)		x		x		Concepts of Advanced Water Technology (Portfolio)	1.1, 6.1	25%	5.5	S1.3 - S1.8	S1.3 - S1.8	S1.10 – S1.11	S1.11-S1.12
TOETS02 (VT)		x		x	x	Applications of Advanced Water Technology (Portfolio)	1.2, 1.3, 2.1, 3.1, 7.1	50%	5.5	S1.18	S1.19	S1.20	S2.2
TOETS03 (VT)			x	x	x	Advanced Water Technology in Practice (Portfolio)	1.1, 7.2	25%	5.5	S1.14	S1.15	S1.18	S1.20

Semester 8 for four year track and Semester 6 for VWO track													
CU11021V1	Title: Final thesis					Number of study credits: 30		Number of contact hours: -		Mandatory	Teaching language: Dutch/English		
Conditions for course participation: See article 2.2.11 of this document.													
Conditions for test participation: See article 2.2.11 of this document.													
Brief description of course content: : Conducting research: investigate a complex practical project in a complex situation independently and choose between relevant methods from Civil Engineering professional practice. The graduation manual and all communication of information sessions to prepare for graduation is in English because this is combined for the Dutch and International classes. Students can choose to do their graduation internship, supervision and reports in English or Dutch.													
Compulsory literature: Baarda, D.B. (2014). Research. This is it! Guide to quantitative and qualitative research. 2nd edition. Groningen: Noordhoff Uitgevers. Verhoeven, N. (2015). Doing Research. The hows and whys of applied research. 4th edition. Amsterdam: Boom Lemma. Verschuren, P. & Doorewaard, H. (2010). Designing a Research Project. 2nd edition. Den Haag: Eleven International Publishing.													
Test code	Format <i>Verbal/Written/Other Individually/Group</i>					Description and assessment type	Content <i>Link with learning outcomes</i>	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								
TOETS01 (VT)	x	x		x		Report and portfolio: Professional competences (Portfolio)	1.1.21; 1.2.2; 1.3.2; 1.3.3; 1.3.4; 2.1.2; 2.2.1; 2.2.2; 2.2.3; 3.1.26	50%	5.5	S1.18/19 OR S2.19/20	S1.18/19 OR S2.19/20	S2.19/20 OR Last 2 weeks of the study year	S2.19/20 OR Last 2 weeks of the study year
TOETS02 (VT)	x	x		x		Report and portfolio: HBO competences (Portfolio)	7.1.4; 7.2.3; 7.3.3; 7.4.2; 8.1.3; 8.1.4; 8.2.2	50%	5.5	S1.18/19 OR S2.19/20	S1.18/19 OR S2.19/20	S2.19/20 OR Last 2 weeks of the study year	S2.19/20 OR Last 2 weeks of the study year



#### 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.

Some exceptions are listed as follows:

1. For the cohorts of students that started the degree programme in the study year 2015-2016 and earlier a VCC (VCC = Free Composition Course) space is reserved in the curriculum of at least 2.5 and up to 7.5 credits. Students of the cohorts 2014-2015 and earlier are not obliged to follow Free Composition Courses. In that case they follow (other) courses related to the curriculum of the degree programme.
2. For the cohorts starting the degree programme in the study year 2017-2018 the HZ personality space in the curriculum is 7.5 credits. For the cohorts of students that start the degree programme in the study year 2018-2019 and thereafter the HZ personality space in the curriculum is 10 credits.

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

NA

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

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

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

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

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

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

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

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

The core of the minor regulations can be found in article 3.8 of the OER HZ. Further regulations and explanation can be found in the HZ minor catalogue and in the HZ Learn Page Minors (<https://hz.nl/secure/voor-studenten/minors>).

The HZ minor course catalogue shows the conditions that students must meet before they can take a minor course. Students must have passed the 'propedeuse' and in any case have obtained at least 30 credits in the main phase before they can participate in a minor course. An exception applies when the Examination Board gives the student permission to take the minor proposed by him because of special circumstances. Additional admission requirements could be applied to the participation in a minor course. Students who follow a 180 ECTS track must have passed the 'propedeuse' phase or at least 60 study credits in total before they may participate in a minor.

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

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

Additional conditions for 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)

A student is allowed to take part in an international exchange programme. There are no additional conditions of participation besides the conditions stated in article 4.5. of the Academic and Examination Regulations of HZ.

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

In order to participate in the Civil Engineering programme graduation phase, students must:

- carry out the graduation project at a company, body or department within the Civil Engineering field of expertise.
- For the 4 years track (including intake Ad Built environment):
  - have obtained at least 175 EC (including 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 programme.
- For the 3 years track:
  - have obtained at least 115 EC (including provisional credits) from the first-year phase and main phase when starting the graduation study period.
  - have obtained 150 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 programme.

The graduation manual 2022-2023 is available at the Learn page under the course code of the Final thesis. The manual 2022-2023 applies to all the students starting their graduation period in this academic year.

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

Based on the requirements set in art. 6.2 paragraph 11 CER HZ, a transition plan is offered to students enrolled in cohort 2016-2017 and precedent cohorts. The transition plan is based on the transition table presented in chapter 2.2.3.

### **2.3 Study recommendation**

#### **2.3.1. Conditions for registration for programme after NBSA** (article 8.1, paragraph 9 HZ CER Ba ft)

Every student receives, except where personal circumstances as referred to in Article 8.5, paragraph 4 of this CER are concerned, a study recommendation at the end of the first year of registration<sup>31</sup> (Article 7.8b WHW). A study recommendation may be positive or negative. A study recommendation will be positive if the preliminary phase is completed in full or if the student has fulfilled the requirements that the executive board has set down for this. A study recommendation will be negative if the student, taking into account his personal circumstances is not deemed suitable for the bachelor's programme that he is doing because the results of his studies do not meet the requirements that the executive board has set down for this. Student with a formal negative study advice from the HZ Exam Committee are not allowed for any new enrolment in the Civil Engineering program of the HZ (CROHO 34279) for three years after the negative study recommendation.

### **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.

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<sup>31</sup> For students who register to start on the 1<sup>st</sup> of February, the term "first year of registration", must be read as "second year of registration".

## **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.