



# **Course Catalogue Engineering and ICT**

**EXCHANGE PROGRAMME**

**Water Management 2020-2021**

**Description of the educational unit**

Course code:	BT.AWM.V19	Credits: 3 ECTS credits	Target group: <b>Fulltime Regular</b>	
Description	Advanced Water management: River modelling			
Competences	-			
Target group	<p>Computational modelling is becoming a core part in solving water management issues. After finishing this course you should be able to understand and apply the basic principles regarding soil water and surface water in the setting up of a hydraulic computational model. The student will be</p> <ul style="list-style-type: none"> <li>• Implementing knowledge on soil water in a basin runoff model</li> <li>• Implementing knowledge on river flows in a 1D model</li> <li>• Analyzing river hydrographs to determine river discharges and water levels</li> </ul>			
Educational content	<p>The water cycle determines to a great extent the possibilities for live on this planet. Transport and conveyance of water in various phases and stages enables for instance plant growth or river flow and influences our climate. Thorough understanding of the physical principles of hydrology - the study of the occurrence, movement, and physical properties of non-oceanic water on and below the earth's surface - is necessary for sustainable water management and related innovations to ensure our livelihoods. This course builds on the water-related courses you have followed earlier during your bachelor study "Civil Engineering". In other courses the water balance, atmospheric water and groundwater were discussed. This course deals with the topics of soil water and surface water and you will be working with this knowledge in a computational 1D flow model.</p>			
Teaching methods	The weekly courses will be built up by an introductory part (theory and concepts) and a practical part in which students will be building an computational river model.			
Teaching aids	<ul style="list-style-type: none"> <li>• Selected computational modelling software</li> <li>• Own laptop</li> </ul>			
Supervisory activity	Teaching and coaching			
Sequentiality				
Level	Gevorderd (Advanced)			
Grading domain	1 t/m 10, 1 dec.			
Assessment	Sub assessment	Grading domain	Weight	Caesura
	Modelling Exercise	1 t/m 10, 1 dec.	1	Higher or equal to 5.5
Reading list				
Practical actions	Practical skills lessons			

### Description of the educational unit

Course code:	BT.HYD.V20	Credits: <b>3</b> ECTS credits	Target group: <b>Fulltime Regular</b>	
Description	Hydrology and Geohydrology			
Competences	-			
Target group	This course is about the concepts of physical hydrology and geohydrology. The course provides a solid grounding in the principles of these subjects. Exploring the principal rules that govern the flow of atmospheric water, surface water and groundwater. Students learn how to evaluate specific situations by using modelling techniques. The subject material is trained by solving a large number of hydrological examples and exercises [Source: Introduction to Physical Hydrology, Martin R. Hendriks]			
Educational content	Introduction in Hydrology; hydrological cycle; drainage basin; water balance; global hydrology; Basic applications of surface water flow and groundwater flow (steady state, 1D en 2D).			
Teaching methods	Tutorials and lectures, power points			
Teaching aids	<ul style="list-style-type: none"> <li>• Reader: Introduction to Physical Hydrology, Martin R. Hendriks</li> <li>• Lecture slides</li> </ul>			
Supervisory activity	Lectures, Assistance and guidance			
Sequentiality				
Level	Gevorderd (Advanced)			
Grading domain	1 t/m 10, 1 dec.			
Assessment	Sub assessment	Grading domain	Weight	Caesura
	Assignment	1 t/m 10, 1 dec.	6	Higher or equal to 5.5
	Exam	1 t/m 10, 1 dec.	4	Higher or equal to 5.5
Reading list	Martin R. Hendriks (2010). <i>Introduction to Physical Hydrology</i> . : Oxford University Press			
Practical actions				

### Description of the educational unit

Course code:	BT.KOWM.V19	Credits: <b>1</b> ECTS credits	Target group: <b>Fulltime Regular</b>	
Description	Kick Off Water Management			
Competences	-			
Target group	The student has an overview of major topics regarding water management and knows the structure of the program and the relations between the topics.			
Educational content	Introduction in the field of international water management through lectures and assignments.			
Teaching methods	Lectures and assignments, presentations, serious game.			
Teaching aids	None, all materials will be provided via the ELO			
Supervisory activity	(guest-) Lectures will be given and students are asked to make assignments and to participate in a serious game guided by the teacher.			
Sequentiality				
Level	Gevorderd (Advanced)			
Grading domain	Not achieved / Achieved			
Assessment	Sub assessment	Grading domain	Weight	Caesura
	Assignments	Not achieved / achieved	1	Higher or equal to 5.5
Reading list				
Practical actions				

### Description of the educational unit

Course code:	BT.PWM.V20	Credits: 4 ECTS credits	Target group: <b>Fulltime Regular</b>	
Description	Project Water management			
Competences	-			
Target group	The student is able to go through the design process successfully, with a professional design- or advisory report as a final result. During the design process the student shows professional skills in communication and collaboration.			
Educational content	<p>Students work in teams on a water related project within a specific organizational context. Within the water related project the different steps of the design process are taken. The design process concerns: Define the problem, collect information, brainstorm and analyse, develop solutions, present your ideas and receive feedback, improve on your design.</p> <p>During the project the students have to develop and improve their collaborative and communicative skills, both intern in the project group as extern to the professional organization and Windesheim. The project is coached by a professional from the organization and by a lecturer/coach from Windesheim.</p> <p>Further details can be found in the study guide of the course.</p>			
Teaching methods	<p>During the Water project, you will work in a team on a complex project in an organizational context. This means that you will be gaining work experience on a project concerning hydraulics or water management in an organization.</p> <p>During the period there will be an introduction to a topic, feedback sessions and discussions and peer interaction.</p>			
Teaching aids	Use of literature, computers, mobile phones, tablets (any devices using internet) and maybe programs needed for the project.			
Supervisory activity	Coaching and feedback by a coach and assistance and guidance from peer students.			
Sequentiality				
Level	Gevorderd (Advanced)			
Grading domain	1 t/m 10, 1 dec.			
Assessment	Sub assessment	Grading domain	Weight	Caesura
	Assignments	1 t/m 10, 1 dec.	1	Higher or equal to 5.5
Reading list				
Practical actions	Cooperative group work at Windesheim with external clients			

### Description of the educational unit

Course code:	BT.REP.V17	Credits: 2 ECTS credits	Target group: <b>Fulltime Regular</b>	
Description	Research Project			
Competences	-			
Target group	Develop research skills prepare for final thesis project			
Educational content	Research project in the field of thesis subject			
Teaching methods	research project			
Teaching aids	-			
Supervisory activity	assistance			
Sequentiality	Research methods			
Level	Gevorderd (Advanced)			
Grading domain	1 t/m 10, 1 dec.			
Assessment	Sub assessment	Grading domain	Weight	Caesura
	Research Plan	1 t/m 10, 1 dec.	1	Higher or equal to 5.5
Reading list				
Practical actions				

### Description of the educational unit

Course code: EN-IN-WNID.XX.01

Credits: 2 ECTS credits

Target group: **Geen specifieke doelgroep**

Description	Introduction module of Windesheim and the Netherlands in an international context.			
Competences	-			
Target group	<p>Objectives</p> <ul style="list-style-type: none"> <li>To learn about organisational structures in the Netherlands;</li> <li>To learn about specific national features of the Netherlands;</li> <li>To learn about aspects of Dutch cuisine;</li> <li>To learn more about typical aspects of Dutch identity;</li> <li>To learn more about specific aspects of Dutch cultural/historical heritage;</li> <li>To get an international perspective on above mentioned themes by comparing them with student's home country (and learn -as a side effect- as well about these themes in other (European) countries).</li> </ul>			
Educational content	<p>Educational content:</p> <ul style="list-style-type: none"> <li>Organisational structures in the Netherlands: educational system, infrastructure of the city centre and municipal political system;</li> <li>Specific national features: language, folklore and geography;</li> <li>Aspects of Dutch cuisine: habits on dinner time, traditional dishes/preferences and cultural and historical influences on the cuisine;</li> <li>1 typical aspect of the Dutch identity (depending on the season): 'Sinterklaas' or iceskating;</li> <li>Specific aspects of Dutch/historical heritage: visiting places of historic interest and related background information.</li> </ul>			
Teaching methods	<p>Student's activities</p> <p>Be present at and take part in:</p> <ul style="list-style-type: none"> <li>Presentations of guest speakers;</li> <li>Excursions;</li> <li>Meetings providing background information related to the topics of the activities;</li> <li>Group discussions.</li> </ul>			
Teaching aids	<p>Educational support:</p> <ul style="list-style-type: none"> <li>Module description on blackboard;</li> <li>Information to be found on internet;</li> <li>Suggestion of book.</li> </ul>			
Supervisory activity	<p>Activities of the International Office and lecturers:</p> <ul style="list-style-type: none"> <li>Organising presentations of guest speakers;</li> <li>Leading excursions;</li> <li>Providing specific information related to the topics of the activities;</li> <li>Organising group discussions and sharing of knowledge about the themes mentioned in the educational information.</li> </ul> <p>Note: This module is a joint effort of our International Office, responsible for the activities as such, and lecturers, responsible for the educational part of this module, which is reviewing the written reports.</p>			
Sequentiality	<p>Pre-condition for entering the module</p> <p>Knowledge of English</p> <ul style="list-style-type: none"> <li>Student is able to understand explanations;</li> <li>Student is able to take part in group discussions;</li> <li>Student is able to write a report.</li> </ul>			
Level	Basis = NLQF 4+			
Grading domain	1 t/m 10, 1 dec.			
Assessment	Sub assessment	Grading domain	Weight	Caesura
	Portfolio	1 t/m 10, 1 dec.	100	Higher or equal to 5.5
Reading list	<p>Martijn de Rooi (2005).  <i>The Dutch I presume..</i> Weesp: Nilsson &amp; Lamm</p>			
Practical actions	Practical skills lessons			