

Integrated Civil Engineering Systems					
PROFILES					
Civil Engineering Structures			Modeling and Forecasting		
Profile Courses (30 EC)	EC	Quartile	Profile Courses (minimum 30 EC)	EC	Quartile
Sustainable Building 195810400	7,5	1	Transport Modeling	7,5	2
Morphology 195410200	7,5	2	Design Project Water II	7,5	2
Research Meth. & Aca. Skills 195820400		2	Tools for Water Policy Analysis		3
Geo Risk Management 195820300	7,5	3	Mathematical Optimization in Transport	7,5	3
Hydraulic Engineering 195410300	7,5	4	Mathematical Physics of Water Systems		3
			Transport Research Project	7,5	any
			Morphology (pr.knowl: Marine Dynamics)		2
Profile Electives - Free to choose any of the 35 CEM-courses (pay attention to the required prior knowledge) - Below: list of CEM-courses that fit best in this profile (in addition to profile courses) - Below: courses from other programmes that fit in this profile (If you include courses from other programmes, we recommend you to make a selection, such that the majority of the programme is still formed by CEM-courses)			Profile Electives - Free to choose any of the 35 CEM-courses (pay attention to the required prior knowledge) - Below: list of CEM-courses that fit best in this profile (in addition to profile courses) - Below: courses from other programmes that fit in this profile (If you include courses from other programmes, we recommend you to make a selection, such that the majority of the programme is still formed by CEM-courses)		
Design Project Water II 195400500	7,5	2	Hydrology	7,5	1
Data Analysis in Water Engineering & Man. 195410100	7,5	2	Marine Dynamics (prior knowledge: Math.Physics of WS)	7,5	1
Mathematical Physics of Water Systems 195400900	7,5	3	Traffic Operations	7,5	2
Collaborative Design & Engineering 195800400	7,5	3	Data Analysis in Water Engineering & Management	7,5	2
Building Information Modeling & 5D Planning 195820600	7,5	3	Morphology (prior knowledge: Marine Dynamics)	7,5	2
			Data Science (EWI) + assignment	7,5	2 or 3
			Building Information Modeling & 5D Planning	7,5	3
			Traffic Management	7,5	4
			River Dynamics (prior knowledge: Math.Physics of WS)	7,5	4
Introduction to Finite Elements (part mod11 WB)	± 3	3	Statistics and Probability (IEM)	5	1
Numerical Methods in ME (ME; prior knowledge: Intro FE)	5	1-2	Simulation (IEM; follow up of Module 8 CIT/TBK)	5	1
Linear Solid Mechanics (ME)	5	3	Numerical Methods in ME (ME; prior knowledge: Intro FE)	5	1-2
Nonlinear Solid Mechanics (ME; prior knowledge: linear SM)	5	4	Discrete Optimization (AM)	5	1
Dynamica 2 & knik (mod 8 WB)	± 4,5	4	Optimization Modelling (AM)	6	3
Structural Health and Condition Monitoring (ME)	5	4	Scientific Computing (AM)	6	3
Failure Mechanisms & Life Prediction (ME)	5	2	Introduction to Finite Elements (part mod11 WB)	± 3	3
Data Science (EWI)	5	2 or 3	Theory of Partial Differential Equations (AM)	5	3
			Applied Finite Elements for PDE (AM)	6	3
GENERAL COURSES					
Free Electives (max 15 EC)	EC	Quartile	Free Electives (max 15 EC)	EC	Quartile
Any course from UT or approved other university*			Any course from UT or approved other university*		
Thesis **	EC	Quartile	Thesis **	EC	Quartile
Preparation Master Thesis	7,5	-	Preparation Master Thesis	7,5	-
Master Thesis Construction/Traffic/Water	30	-	Master Thesis Construction/Traffic/Water	30	-
PLANNING AND CONSULTATION FOR THE MASTER PROFILES					
Track-coordinator: dr. Jord Warmink					
Coordination of Master Theses: see coordinators from CME, TEM or WEM					

* an "approved university" is any university in The Netherlands (not HBO-schools), or any international university that is partner of the UT or of the faculty of ET.

[Click here for a list of partner universities](#)

For courses from other universities: contact your track-coordinator.

The Free Electives should be at MSc-level and should have no overlap with other courses in your programme.

** [Click here for the procedure of how to start the course Preparation Master Thesis and your MSc-thesis project](#)

Integrated Civil Engineering Systems

PROFILES

Sustainability						Smart Cities					
Profile Courses (30 EC)			EC	Quartile	Profile Courses (minimum 30 EC)			EC	Quartile		
Sustainable Building			7,5	1	Planning and Process Management			7,5	1		
Water Footprint Assessment			7,5	1	Research Methodology & Academic Skills			7,5	2		
Research Methodology & Academic Skills			7,5	2	Land Use and Transport Interactions			7,5	3		
Sustainable Transport			7,5	4	Integrated Water Management			7,5	4		
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Legal & Governance Aspects			7,5	1	Legal & Governance Aspects			7,5	1		
Collaborative Design & Engineering			7,5	3	Sustainable Building			7,5	1		
Land Use and Transport Interactions			7,5	3	Public Transport in urban areas			7,5	2		
Integrated Water Management			7,5	4	Data Science (EWI) + assignment			7,5	2 or 3		
					Collaborative Design & Engineering			7,5	3		
					Sustainable Transport			7,5	4		
					Traffic Management			7,5	4		
Innovative Design (SET)			5	1	Innovative Design (SET)			5	1		
Energy Conversion Technology (ME)			5	1	Energy Conversion Technology (ME)			5	1		
Life-Cycle Strategy (ME)			5	1	Life-Cycle Strategy (ME)			5	1		
Policy Instr and Evaluation in Environm+Sust. (PA)			5	3	Resilience Engineering (Psy)			5	1		
Economic Methods of Sustainability Assessment (PA)			5	1	Product Life Cycle (IDE)			5	2		
Policy Strat.&Impl. for Water Govern+Sust. Issues (MEEM)			4	1	Electrical Power Engineering + System Integration (SET)			5	2		
Product Life Cycle (IDE)			5	2	Electric Vehicle System Design (IDE)			5	2		
Electrical Power Engineering + System Integration (SET)			5	2	Energy, Sustainability and Society (SET)			5	3		
Energy management, policy and technology (MEEM)			4	2	Wind Energy (SET)			5	3		
Energy, Sustainability and Society (SET)			5	3	Solar Energy (SET)			5	3		
Wind Energy (SET)			5	3	Virtual Reality (IDE)			5	4		
Solar Energy (SET)			5	3	Energy Storage (SET)			5	4		
Energy Storage (SET)			5	4							
Data Science (EWI)			5	2 or 3							
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Thesis **			EC	Quartile	Thesis **			EC	Quartile		
Preparation Master Thesis			7,5	-	Preparation Master Thesis			7,5	-		
Master Thesis Construction/Traffic/Water			30	-	Master Thesis Construction/Traffic/Water			30	-		
PLANNING AND CONSULTATION FOR THE MASTER PROFILES											
Track-coordinator: dr. Jord Warmink											
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