

Curriculum CEM/CME 2024-2025

Construction Management and Engineering			Transport Engineering and Management			Water Engineering and Management			Integrated Civil Engineering Systems		
PROFILES			PROFILES			PROFILES			PROFILES		
Markets & Organization of Construction			Integrated Urban Transport			Integrated Water Management			Sustainability & Resilience		
Profile Courses (≥25 EC)			Profile Courses (≥25 EC)			Profile Courses (≥25 EC)			Profile Courses (≥25 EC)		
Civil Engineering Challenges*	5	1	Civil Engineering Challenges*	5	1	Civil Engineering Challenges*	5	1	Civil Engineering Challenges*	5	1
Legal & Governance Aspects	5	1	Planning & Process Management	5	1	Water Footprint Assessment	5	1	Water Footprint Assessment	5	1
Planning & Process Management	5	1	Public Transport Modelling	5	2	Hydrology	5	1	Sustainable Transportation Infrastructure	5	1
Sustainable Transportation Infrastructure	5	1	Sustainable Transport	5	2	Hydrological Modelling and Forecasting	5	2	Transitions in Civil Engineering*	5	2
Transitions in Civil Engineering*	5	2	Rail Transport	5	2	Sustainable Engineering	5	3	Sustainable Transport	5	2
Construction Process Management	5	2	Traffic Safety	5	2	Integrated Water Management	5	3	Sustainable Engineering	5	3
Circular Systems Engineering	5	3	Data Science (BIT)	5	2 or 3	Urban Resilience in a Changing Climate	5	3	Circular Systems Engineering	5	3
Infrastructure Asset Management	5	4	Land Use and Transport Interactions	5	4	Water and Climate	5	4	Urban Resilience in a Changing Climate	5	3
									Water and Climate	5	4
Profile Electives (~40 EC)			Profile Electives (~40 EC)			Profile Electives (~40 EC)			Profile Electives (~40 EC)		
- Free to choose any of the CEM-courses (pay attention to the required prior knowledge)			- Free to choose any of the CEM-courses (pay attention to the required prior knowledge)			- Free to choose any of the CEM-courses (pay attention to the required prior knowledge)			- Free to choose any of the 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: list of CEM-courses that fit best in this profile (in addition to profile courses)			- Below: list of CEM-courses that fit best in this profile (in addition to profile courses)			- Below: list of CEM-courses that fit best in this profile (in addition to profile courses)		
Suggested Profile Electives			Suggested Profile Electives			Suggested Profile Electives			Suggested Profile Electives		
Construction Supply Chains and Digitization	5	1	Simulation (IEM)	5	1	Water Quality	5	1	Legal & Governance Aspects	5	1
Safety by Design for Products, Equipment and Systems (ME)	5	2	Traffic Operations	5	1	River Flow Processes	5	1	Hydrology	5	1
Urban Resilience in a Changing Climate	5	3	Empirical Methods for Designers (IDE)	5	2	Data Analysis in Water Engineering and Management	5	2	Planning & Process Management	5	1
Value Management	5	3	Network Modelling and Forecasting	5	3	Circular Systems Engineering	5	3	Construction Process Management	5	2
Culture in International Construction	5	4	Urban Resilience in a Changing Climate	5	3	Hydraulic Engineering	5	3	Value Management	5	3
Procurement Strategies and Tendering	5	4	Transportation & Logistics Management (IEM)	5	3	Building with Nature	5	4	Infrastructure Asset Management	5	4
			Traffic Management	5	3				Land Use and Transport Interactions	5	4
			Infrastructure Asset Management	5	4				Building with Nature	5	4
			Mathematical Optimization in Transport	5	4						
			Smart Mobility	5	4						
Digital Technologies in Construction			Transport and Logistics			River and Coastal Engineering			Civil Engineering Structures		
Profile Courses (≥25 EC)			Profile Courses (≥25 EC)			Profile Courses (≥25 EC)			Profile Courses (≥25 EC)		
Civil Engineering Challenges*	5	1	Civil Engineering Challenges*	5	1	Civil Engineering Challenges*	5	1	Civil Engineering Challenges*	5	1
Legal & Governance Aspects	5	1	Simulation (IEM)	5	1	River Flow Processes	5	1	Structural Health Monitoring for Smart Infrastructure	5	1
Planning & Process Management	5	1	Traffic Operations	5	1	Long Waves and Tidal Morphodynamics	5	1	Data Analysis in Water Engineering and Management	5	2
Construction Process Management	5	2	Public Transport Modelling	5	2	Wave-Dominated Coastal Dynamics	5	1	Circular Systems Engineering	5	3
Circular Systems Engineering	5	3	Data Science (BIT)	5	2 or 3	Morphology*	5	2	Hydraulic Engineering	5	3
Digital Technologies in Construction	5	3	Network Modelling and Forecasting	5	3	Mathematical Physics of Water Systems	5	3	Advanced Soil Mechanics	5	3
Technology and Innovation in Road Construction	5	4	Transportation & Logistics Management (IEM)	5	3	Hydraulic Modelling	5	3	Subsurface Infrastructure Engineering	5	4
			Traffic Management	5	3	River Morphodynamics	5	4	Building with Nature	5	4
			Mathematical Optimization in Transport	5	4				Geo Risk Assessment	5	4
			Smart Mobility	5	4						
Profile Electives (~40 EC)			Profile Electives (~40 EC)			Profile Electives (~40 EC)			Profile Electives (~40 EC)		
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Suggested Profile Electives			Suggested Profile Electives			Suggested Profile Electives			Suggested Profile Electives		
Sustainable Transportation Infrastructure	5	1	Planning & Process Management	5	1	Water Quality	5	1	Sustainable Transportation Infrastructure	5	1
Construction Supply Chains and Digitization	5	1	Sustainable Transport	5	2	Hydrology	5	1	Hydrology	5	1
Structural Health Monitoring for Smart Infrastructure	5	1	Rail Transport	5	2	Data Analysis in Water Engineering and Management	5	2	BIM and 5D Planning	5	2
Transitions in Civil Engineering*	5	2	Empirical Methods for Designers (IDE)	5	2	Hydrological Modelling and Forecasting	5	2	Rail Transport	5	2
BIM and 5D Planning	5	2	Traffic Safety	5	2	Hydraulic Engineering	5	3	Mathematical Physics of Water Systems	5	3
Safety by Design for Products, Equipment and Systems (ME)	5	2	Land Use and Transport Interactions	5	4	Advanced Soil Mechanics	5	3	Technology and Innovation in Road Construction	5	4
Simulation and Optimization of Construction Processes	5	3	Infrastructure Asset Management	5	4	Building with Nature	5	4	Water and Climate	5	4
Value Management	5	3									
Subsurface Infrastructure Engineering	5	4									
Infrastructure Asset Management	5	4									
GENERAL COURSES			GENERAL COURSES			GENERAL COURSES			GENERAL COURSES		
Free Electives (max 15 EC)			Free Electives (max 15 EC)			Free Electives (max 15 EC)			Free Electives (max 15 EC)		
Any course from UT or approved other university**			Any course from UT or approved other university**			Any course from UT or approved other university**			Any course from UT or approved other university**		
<i>On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator.</i>			<i>On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator.</i>			<i>On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator.</i>			<i>On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator.</i>		
Other usefull courses (0 EC)			Other usefull courses (0 EC)			Other usefull courses (0 EC)			Other usefull courses (0 EC)		
Boost your Competences	0	1,2,3,4	Boost your Competences	0	1,2,3,4	Boost your Competences	0	1,2,3,4	Boost your Competences	0	1,2,3,4
Thesis ***			Thesis ***			Thesis ***			Thesis ***		
Academic Research Skills in CEM/CME	5	2,4	Academic Research Skills in CEM/CME	5	2,4	Academic Research Skills in CEM/CME	5	2,4	Academic Research Skills in CEM/CME	5	2,4
Preparation Master Thesis	5	-	Preparation Master Thesis	5	-	Preparation Master Thesis	5	-	Preparation Master Thesis	5	-
Master Thesis Construction	30	-	Master Thesis Traffic	30	-	Master Thesis Water	30	-	Master Thesis Construction/Traffic/Water	30	-
PLANNING AND CONSULTATION FOR THE MASTER PROFILES			PLANNING AND CONSULTATION FOR THE MASTER PROFILES			PLANNING AND CONSULTATION FOR THE MASTER PROFILES			PLANNING AND CONSULTATION FOR THE MASTER PROFILES		
Track-coordinator: Dr.ir. Ruth Sloot Coordinator Master Thesis: Dr.ir. Robin de Graaf			Track-coordinator: Prof.dr.ir. Eric van Berkum Coordinator Master Thesis: Prof.dr.ir. Eric van Berkum			Track-coordinator: Dr.ir. Bas Borsje Coordinator Master Thesis: Dr.ir. Martijn Booij			Track-coordinator: Dr. Jord Warmink Coordinator Master Thesis: Coordinators from CME, TEM or WEM		

* Second year MSc course

** 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 the Canvas page including a list of partner universities](#)

The Free Electives should be at MSc-level and should have no overlap with other courses in your programme. For courses from other universities, contact your track-coordinator.

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