UNIVERSITY OF MIND BLOWING OPEN DAYS.

MASTER OPEN DAY
Civil Engineering & Management (CEM)
Construction Management & Engineering (CME)
General presentation
CEM/CME
By Seirgei Miller, Programme Director

Student presentation
- Transport Track
- Water Track
- Building Track (CME)
- Integrated Track

Information on the pre-master program and experience from a pre-master student

‘Market’ in this room: Ask all your questions to students and presenters!

15 March 2018
General presentation CEM/CME
UNIVERSITY OF TWENTE.

WELCOME TO OUR MASTER PROGRAM OPEN DAY

CIVIL ENGINEERING AND MANAGEMENT
CONSTRUCTION MANAGEMENT AND ENGINEERING
DR IR SEIRGEI MILLER, PROGRAMME DIRECTOR
HOW DO WE DEVELOP OUR MASTER PROGRAMMES FOR CIVIL ENGINEERING?

UNIVERSITY OF TWENTE.
21st Century Challenges

- Climate change
- Sustainability
- Air pollution
- Global health
- Flood risks
- Water security
- Energy-water-food stress
- Urbanization
- Ageing infrastructure
- Keeping pace with technology
- Digital Age & Big Data
- Education

UNIVERSITY OF TWENTE.
Coastal Protection
Water management
Large buildings
Bridges
Mobility
2 MSC PROGRAMMES IN CIVIL ENGINEERING AT UT

- Civil Engineering and Management
- Construction Management and Engineering (4TU)

Objective

Civil Engineering at the University of Twente operates at the interfaces of Civil Engineering, Public Administration and Management Science.

The MSc-programmes aim to teach students qualitative and quantitative knowledge on the life cycle of civil engineering systems and objects, with a particular focus on the initial phase, the phase of the conceptual or functional design, and the operation and maintenance phase – all in a societal and environmental context.
CIVIL ENGINEERING AND MANAGEMENT

- Broad technical engineering Master’s programme
- Unique combination of engineering and management
- 4 specializations / 10 profiles → tailor made programme
- Renowned research
- Highly appreciated by the professional field

UNIVERSITY OF TWENTE.
CONSTRUCTION MANAGEMENT AND ENGINEERING

- Cooperation with TU Delft and TU Eindhoven
- Comparable to the Construction specialization within CEM
- Specializations per location
- Possibility to take courses at TU Delft and TU Eindhoven
UNIVERSITY OF TWENTE.

PROGRAMME STRUCTURE
Two years, full time
- English
- Deficiency programme (if necessary)

5 EC Courses
Pre-thesis
MSc-thesis (30 EC)
UNIVERSITY OF TWENTE.

SPECIALIZATIONS AND PROFILES
SPECIALIZATIONS AND PROFILES

Construction Management Engineering

Transport Engineering Management

Water Engineering Management

Integrated Civil Engineering Systems

CME - Delft

CME - Eindhoven

4TU - CME
First choose a specialization, then choose a profile.

A profile consists of:
- Profile Courses (between 25 & 30 EC)
- Profile Electives
- Free Electives (maximum of 15 EC)
- MSc-thesis on a topic within your profile:
  preparation MSc-thesis (5 EC) + MSc-thesis project (30 EC)
Please note that the new MSc program will be online in April 2018.

www.utwente.nl/cmml
TRACK-COORDINATORS

Construction Management and Engineering
Hans Boes

Transport Engineering and Management
Eric van Berkum

Water Engineering and Management
Denie Augustijn

Integrated Civil Engineering Systems
Jord Warmink
TO INDUSTRY OR...
ALUMNI AND LABOUR MARKET
Labour Market and Alumni
UT GRADUATES FROM CIVIL ENGINEERING

Wouter de Hamer
Country Representative and Project Director at Royal HaskoningDHV Philippines
Philippines | Civil Engineering
Previous: Royal HaskoningDHV Indonesia, Royal Haskoning Nederland, Royal Haskoning Nigeria
Education: Manchester Business School

Thijs Teunissen
Consultant Transportation at Mott MacDonald
Utrecht Area, Netherlands | Civil Engineering
Previous: Study Association ConcepT, Centro de Transporte Sustentable, México, University of Twente
Education: Universiteit Twente

UNIVERSITY OF TWENTE.
OR... BROADEN YOUR KNOWLEDGE

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WHY CHOOSE THE UT?
FOR YEARS BEST VALUED MSC-PROGRAMMES IN CE

“NVAO experts are positive about the quality of the educational programme”

“In Twente, students are satisfied about all aspects of the programme”
WHY CIVIL ENGINEERING AT THE UT

- Challenging Education
- Only true small-scale programme
- Highly valued combination of Engineering and Management
- 100% finds a job within 3 months after graduation!

UNIVERSITY OF TWENTE.
UNIVERSITY OF TWENTE.

ADMISSION AND CONTACT INFORMATION
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Student Advisor  
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j.roos@utwente.nl

UNIVERSITY OF TWENTE.
Student presentation on the different tracks
UNIVERSITY OF TWENTE.

WATER ENGINEERING AND MANAGEMENT (WEM)
- RIVER AND COASTAL ENGINEERING
- INTEGRATED WATER MANAGEMENT
RESEARCH PROJECTS
ROOM FOR THE RIVER
RESEARCH PROJECTS
ZANDMOTOR
MASTERS AND SPECIALIZATIONS

EXAMPLE

Construction Management Engineering

Transport Engineering Management

Water Engineering Management

Integrated Civil Engineering Systems

4TU - CME

CME - Delft

CME - Eindhoven

UT - CEM

Master Open Day 2018
# WATER ENGINEERING AND MANAGEMENT

**AS A SPECIALIZATION OF CEM**

<table>
<thead>
<tr>
<th>River and Coastal Engineering</th>
<th>Integrated Water Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Physical aspects of water systems</td>
<td>▪ Managing water problems</td>
</tr>
<tr>
<td>▪ Modelling water systems and the impact of measures</td>
<td>▪ Use of tools and methods in water policy</td>
</tr>
<tr>
<td><img src="image" alt="River and Coastal Engineering Image" /></td>
<td>▪ Governance</td>
</tr>
</tbody>
</table>

Master Open Day 2018
A profile consists of:

- **Profile Courses** (minimum 30 EC)
- **Profile Electives**
- **Free Electives** (maximum of 15 EC)
- **MSc-thesis on a topic within your profile:** preparation MSc-thesis (7.5 EC) + MSc-thesis project (30 EC)

### Courses

<table>
<thead>
<tr>
<th>Profile courses</th>
<th>Water Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>River Flow</td>
</tr>
<tr>
<td>min. 30 EC</td>
<td>Morphology</td>
</tr>
<tr>
<td></td>
<td>Mathematical Physics of Water Systems</td>
</tr>
<tr>
<td></td>
<td>River and sediment Dynamics</td>
</tr>
<tr>
<td></td>
<td>Long Waves</td>
</tr>
<tr>
<td></td>
<td>and more....</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Profile electives</th>
<th>GeoRiskManagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 EC</td>
<td>Transport Phenomena</td>
</tr>
<tr>
<td></td>
<td>Numerical Methods</td>
</tr>
<tr>
<td></td>
<td>Turbulence</td>
</tr>
<tr>
<td></td>
<td>Theory of Partial Differential Equations</td>
</tr>
<tr>
<td></td>
<td>and many more....</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Free electives</th>
<th>Philosophical Anthropology And Human-technology Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 15 EC</td>
<td>Essentials is Communication Science</td>
</tr>
<tr>
<td></td>
<td>Research Methodology</td>
</tr>
<tr>
<td></td>
<td>and many many more...</td>
</tr>
</tbody>
</table>

**Master thesis and preparation**
# RIVER AND COASTAL ENGINEERING

## 5 EC COURSES

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality</td>
<td>Data Analysis</td>
<td>Math. Physics</td>
<td>River and sediment Dynamics</td>
<td></td>
</tr>
<tr>
<td>River Flow</td>
<td>Water, Energy and Food</td>
<td>Hydraulic Engineering</td>
<td>Building with Nature</td>
<td></td>
</tr>
<tr>
<td>Hydrology</td>
<td>Hydr. Modelling and Forecasting</td>
<td>Regional Flood Management</td>
<td>Urban Water Management</td>
<td></td>
</tr>
</tbody>
</table>

| Year 2 | | | | |
|--------| | | | |
| Long Waves | Morphology | | |
| Short Waves | Advanced Reserach Skills in RCE | | MSc Thesis |
| Water Footprint Assessment | Preparation MSc Thesis | | |

<table>
<thead>
<tr>
<th></th>
<th>Fluid Mechanics II (ME)</th>
<th>Wave Motion (ME)</th>
<th>Partial Differential Equations (AM)</th>
<th>Comp. Fluid Dynamics (ME)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerical Methods in ME</td>
<td>Turbulence (AP)</td>
<td>Finite Elements (ME)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### INTEGRATED WATER MANAGEMENT

#### 5 EC COURSES

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Water Quality</td>
<td>Data Analysis</td>
<td>Math. Physics</td>
<td>River and sediment Dynamics</td>
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</tr>
<tr>
<td></td>
<td>Long Waves</td>
<td>Morphology</td>
<td>Water Governance</td>
<td>Water and Climate</td>
</tr>
<tr>
<td>Year 2</td>
<td>Short Waves</td>
<td>Advanced Research Skills in RCE</td>
<td></td>
<td>MSc Thesis</td>
</tr>
<tr>
<td></td>
<td>Water Footprint Assessment</td>
<td>Preparation MSc Thesis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|----------------------|-------------------------|-------------------------|-----------------------|---------------------------------|------------------------|

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Master Open Day 2018
MSC THESIS TOPICS

- Morphology of the restored Vecht
- Form drag of subaqueous dunes
- Aeolian transport from the intertidal beach
- Sediment transport under irregular waves
- Cliff erosion of salt marsches
- Impacts of climate change in Meuse basin
- The water footprint of reservoirs
- Social learning in water projects
- Nutrient flows in international trades

For more examples see website WEM:
www.utwente.nl/en/et/wem/
CONSTRUCTION MANAGEMENT AND ENGINEERING
- MANAGEMENT & ORGANIZATION IN CONSTRUCTION
- DIGITAL TECHNOLOGIES IN CONSTRUCTION
MANAGEMENT AND ORGANIZATION IN CONSTRUCTION

- Supply chain management & ICT
- Market, Organization & Innovation
- Procurement, Strategies & Tendering
- Infrastructure management
- Sustainable building

INFRASTRUCUTRE ASSET MANAGEMENT
DIGITAL TECHNOLOGIES IN CONSTRUCTION

• Innovation in Construction
• BIM & 5D Planning
• Visualization & Simulation in Construction
• Technology Innovation in Road Construction
• Subsurface Engineering
UNIVERSITY OF TWENTE.

TRANSPORT ENGINEERING AND MANAGEMENT
- TRANSPORT PLANNING AND MODELLING
- TRANSPORT AND LOGISTICS
TRANSPORT PLANNING AND MODELLING
IF INTERESTED IN......

- Urban planning
- Policy processes
- Sustainability
- Travel behaviour
- Public transport
Florianópolis - A Booming economy

The main place of activity in the State of Santa Catarina

- Replacing the bridge with a train tunnel
- Expansion of the airport
- High speed line along the coast
- Ferries for access to the island
- Cargo trams and electric trucks for logistics
- Regional flights to the interior
- Electric bus on the mainland with high frequency

High speed line
Joãoville – Itajai – Florianópolis – Tubarão – Criciúma
Speed: 300 km/h
TRANSPORT AND LOGISTICS

IF INTERESTED IN....

• Mathematical approach
• Traffic flows
• Logistics and optimization
• Warehousing
INTEGRATED CIVIL ENGINEERING SYSTEMS (ICES)
- CIVIL ENGINEERING STRUCTURES
- MODELLING AND FORECASTING
- SUSTAINABILITY
- SMART CITIES
RESEARCH PROJECTS
Parking garage under de dikes
SUSTAINABILITY ASSESSMENT IN INFRASTRUCTURE SECTOR

environmental, economic and social impacts of future construction projects

applying circular economy principle to the infrastructure sector

RESEARCH PROJECTS

Cradle to cradle
RESEARCH PROJECTS
Amsterdam CS
WHY STUDY CIVIL ENGINEERING & MANAGEMENT
AT THE UNIVERSITY OF TWENTE

• Small scale: *groups of about 30 students*
• Various contact hours (lectures, practicals, projects)
• Opportunity to choose courses of your interest
• Theoretical knowledge *and* practical application
• Use of various types of software
• Excursions
• Guest lectures
• Close contact with teachers and supervisors
Pre-master programme

Ir. Monique Duyvestijn - premaster coordinator
WHY DO YOU OPT FOR A PREMASTER?

- Bachelor from a university

- Bachelor from university of applied sciences:
  - Interested in deepening your knowledge: a lot of reading in English
  - Academic thinking: more theoretical, not practical
OUR GOAL OF THE PREMASTER FOR HBO STUDENTS

• Selection (by challenging courses like Calculus)
• Give a sound base for your master,
  • f.i. Academic Research Skills, Statistics.
<table>
<thead>
<tr>
<th>Quartile 1:</th>
<th>EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus A</td>
<td>4 EC</td>
</tr>
<tr>
<td>Academic Research Skills</td>
<td>3 EC</td>
</tr>
<tr>
<td>Design Project Urban Development</td>
<td>6 EC</td>
</tr>
<tr>
<td>Matlab</td>
<td>2 EC</td>
</tr>
<tr>
<td><strong>Quartile 2:</strong></td>
<td></td>
</tr>
<tr>
<td>Calculus B</td>
<td>3 EC</td>
</tr>
<tr>
<td>Probability Theory and Statistics</td>
<td>3 EC</td>
</tr>
<tr>
<td>Academic Research Skills (continued)</td>
<td>4,5 EC</td>
</tr>
<tr>
<td>Water and fluid mechanics</td>
<td>4,5 EC</td>
</tr>
<tr>
<td><strong>Totaal</strong></td>
<td><strong>30 EC</strong></td>
</tr>
</tbody>
</table>
WHEN TO APPLY FOR DUTCH STUDENTS?

APPLICATION (Vooraanmelding) = applying for admission
• Deadline: August 1

DIPLOMA may be handed in later on in the application procedure!

REGISTRATION (Inschrijving) = formalizing your admission
Deadline:
• August 31
EXPERIENCES OF A PREMASTER STUDENT

• HBO (University of Applied Sciences) in Den Bosch
• Premaster during my HBO minor
  • September 2015 – January 2016
• Started CME Master in September 2016
• Now in preparation for Master Thesis
EXPERIENCES OF A PREMASTER STUDENT

• Why did I want to do a Master after my HBO?
  • Challenging myself with subjects on a higher level
  • Thinking on a more abstract level in study and work field
    • Not being a draftsman (tekenaar) or project planner (werkvoorbereider)

• My Premaster experiences
  • Selection and academic preparation
  • Learning how to study at the university
    • Being independent
    • Study for yourself, do the work
  • Fun introduction to CME / CEM by the design project and the Academic Research Skills course: you get to pick your own research
EXPERIENCES OF A PREMASTER STUDENT

• My Master experiences
  • You get to pick your own courses based on a framework
  • Compose your own package of courses and thus skills
  • Different than HBO; take own initiatives and be in charge
  • Personal and low-key contact with lecturers
  • Courses at other studies (Industrial Design, Mechanical Engineering) to really distinguish yourself from other students
• Great to experience student life
  • Being active as a student gives you a lot of work skills, life skills and fun
  • Living on your own / in a student house
  • Studying sometimes is tough, but a lot of fun compensates
EXPERIENCES OF A PREMASTER STUDENT

• In conclusion
  • Doing a Master is gaining extra knowledge, skills and experiences before starting your working career;
  • I would recommend doing a Master and investing time and money in it;

• More importantly: asking yourself:
  • Where do you see yourself in ten years?
  • What type of job fits you?
Time for questions