



AN OVERVIEW OF THE POSSIBILITIES AFTER
TECHNISCHE BESTUURSKUNDE

TPM MASTER BROCHURE

PREPARED BY
S.V.T.B. CURIUS &
TPM COMMUNICATION

MAY 2020



Technology, Policy and
Management

INTRODUCTION

Dear students,

We proudly present a brochure we as commissioners of education at Curius made in cooperation with the communication department of the faculty. The aim of this brochure is to give you an overview of the master's programmes you can follow after your bachelor Technische Bestuurskunde.

The decision of which master to choose is an important one. You have probably finished your bachelor programme, and now you are wondering which master you want to do. EPA and CoSEM might be the most logical paths to follow, but there are multiple other good options to pick from. Did you for example know that there is a master 'Geomatics', which you can do after TB without following a bridging programme? There are probably more masters programmes in this brochure that you might have never even heard of. Because this brochure is written from the point of view of TB, it is a good addition to the TU wide master information sessions.

For every master, a short introduction is given, some interesting information is highlighted and the perspective of a student is presented.

Be aware that this brochure does not cover all the possibilities you have. It only gives an overview of common or logical follow-ups of TB.

If you have any questions, please feel free to contact one of us! You can also contact Marja Brand (the academic counselor), or the program director of the specific program you are interested in.

We wish you all the best and good luck with choosing the right master!

ANNELOTTE ANDEWEG
COMMISSIONER BACHELOR EDUCATION

BAS HOEKSTRA
COMMISSIONER MASTER & CAREER

TABLE OF CONTENTS

03

COMPLEX SYSTEMS ENGINEERING
AND MANAGEMENT

05

ENGINEERING AND POLICY
ANALYSIS

08

MANAGEMENT OF TECHNOLOGY
GENERAL STUDENT PERSPECTIVE
STUDENT PERSPECTIVE FROM TB

13

INDUSTRIAL ECOLOGY

15

TRANSPORT, INFRASTRUCTURE AND
LOGISTICS

18

CONSTRUCTION MANAGEMENT AND
ENGINEERING

21

GEOMATICS

24

AND MORE



COMPLEX SYSTEMS ENGINEERING AND MANAGEMENT (COSEM)



APPLICATION DEADLINE JULY 1ST

PROGRAMME DIRECTOR IVO BOUWMANS
I.BOUWMANS@TUDELFT.NL

WEBSITE LINK WWW.TUDELFT.NL/MSc/COSEM

BRIDGING NONE

Are you looking for a Master's degree programme in which you learn to design in complex technical environments? But do you want more than 'just' technical skills? For example, do you want to look beyond the design of electric vehicles and concentrate on what is needed to implement electric transportation on a large scale? And therefore work on regulations, logistics, behavioural change, financial incentives etc., in order to bring innovations to life? Then choose the unique Master's degree programme in Complex Systems Engineering and Management (CoSEM).

STUDENT PERSPECTIVE

COSEM

Hi! My name is Britt Zandbergen. I am currently studying Complex Systems Engineering and Management (CoSEM). Before I started CoSEM I followed the Bachelor 'Technische Bestuurskunde', also from the TPM faculty. Within this Bachelor's program I really enjoyed the diversity of the courses and the focus on both social and engineering perspectives. The main focus of the Bachelor program is understanding the problem situation with all its diverging actors and different components. The CoSEM courses perfectly follow up on the knowledge gained during the Bachelor's by getting into the implementation and design phase. We now know what the problem is, but how do we come to a solution? CoSEM's first year consists of three courses per period, all worth 5 ECTS. These can roughly be divided into three categories: a 'track' course, a course where you learn a specific skill or tool; and a typical CoSEM course which focuses for example on governance, complex systems thinking or multi-actor decision-making. For one of the 'skill' courses, students are asked to build an agent-based model which shows the safety and livability of a neighborhood in the Hague. The project was done in a group of three students. Besides the project description and limited question hours, we had to figure out everything ourselves; how to build the model, what assumptions need to be made and what conclusions can be drawn from the model. Additionally, in the first period we were asked to complete a project for a typical 'CoSEM' course, where we analyzed the future implementation of vehicle-to-grid. For this analysis, we did an extensive stakeholder analysis which led to a number of technological requirements.

To conclude the project, we designed several potential outcomes of the problem field.

Overall, I am still very content with my choice for CoSEM. Compared to the Bachelor's, the courses are more in-depth. This means that increasingly, we're actively applying our knowledge, as well as acquiring new information. The projects are based on real-world problems and you often have the freedom to choose your own topic. Despite this independence, you still have a lot of personal contact with your teachers because of smaller classes and frequent feedback sessions. So, are you interested in complex systems that have technological and social aspects? Then CoSEM might be the perfect Master's programme for you!

BRITT ZANDBERGEN



ENGINEERING AND POLICY ANALYSIS (EPA)



APPLICATION DEADLINE JULY 1ST

PROGRAMME DIRECTOR BERT ENSERINK
B.ENSERINK@TUDELFT.NL

WEBSITE LINK WWW.TUDELFT.NL/MSC/EPA

BRIDGING NONE

Do you want to work on real life cases together with multinationals and NGO's focussing on the interaction between nature, society and technology? Be part of an international student community with students from various engineering backgrounds, at the highest ranked Dutch University of Technology? Study in the middle of the Central Innovation District in The Hague, home to the Dutch government, at our new TU Delft location? Work with up to date modelling tools that prepare you for the field work and enjoy excellent job prospects after graduation? Then register for the MSc programme Engineering and Policy Analysis.

STUDENT PERSPECTIVE

EPA

After studying the Bachelor's program at the faculty of Technology, Policy and Management, I wasn't initially sure which master's programme to choose. I looked into the different available options within TPM, as well as options in Rotterdam and Amsterdam. After some deliberation I narrowed my choice down to the TU Delft masters since they appealed to me most. I looked into COSEM, TIL and EPA.

The main reasons why I chose EPA? First of all, EPA stood out because of the international atmosphere. Both in terms of study content and the student body. A lot of the projects within the courses are focussed on international topics. Often, they are also linked to the Sustainable Development Goals. Further, the humanitarian topics within the master appealed to me. Finally, from the bachelor I enjoyed the group projects from the modelling courses the most. Those courses are also taught within the EPA master, including more programming.

The main goals of the first quarter are to get an introduction to the type of problems EPA focusses on. This happens within the course 'Understanding grand challenges'. Further you are going to spend a lot of time on programming in Python, mainly focussing on data analytics and visualisations. The next two quarters is 50% filled with modelling courses where you learn to use different types of programs and modelling software within a large group project. Next to these there are the more social courses as 'Intercultural Relations and Project Management' and 'Political Decision Making'.

For the last quarter we will have 'Model based decision making', 'Ethics and impacts of global interventions' and 'Macro Economics for policy analysis'.

The second year consists of a specialisation and/or free electives (possibly an exchange) and half a year of thesis writing.

To give an idea of the large variety of project work and topics, here are some of the topics of my project work: The influence of ocean acidification on marine life (Advanced System Dynamics), Use of artificial intelligence within the claim handling process of an insurance company (Political Decision Making), Tracking Dutch citizens during the COVID-19 crisis (Political Decision Making), Gender Based Violence in South Africa (Understanding Grand Challenges) and Analysing the road infrastructure of Bangladesh (Advanced Discrete Simulation).

EMMA INSINGER



For most courses you can choose your own topic of interest together with your group members, therefore these topics don't necessarily reflect the topics of the whole master's programme!

I believe the benefit of the EPA program is that we learn to think of large scale problems in a both technical and more social context. We learn about international grand challenges and the characteristics of the complexity that they contain. Next to this, we also learn how to program and analyse data in various programming languages and modelling programs. Sometimes it can be hard to focus on multiple types of courses on the same time. Especially if you have a lot of different project groups at the same time this can be hard to manage.

However, this combination of tangible and non-tangible skills you learn make the EPA program unique and challenging!

After studying on the TU campus for multiple years, I really like the new and fresh surroundings of the campus in The Hague. The facilities are good, and the location next to the central station is ideal for students who are commuting from different places. Having our own space on the 5th floor really adds to the experience as EPA student. We can study together, work on projects, but also have lunch using the kitchen facilities on our floor. Besides that you are next door to the city centre of The Hague so the facilities and options are endless as soon as you walk outside!



MANAGEMENT OF TECHNOLOGY (MOT)

BE AWARE: ESSENCIALLY, THE MOT PROGRAMME IS **NOT INTENDED FOR TB STUDENTS**. HOWEVER, IF YOU HAVE FINISHED A TECHNICAL MINOR, AND YOU CAN EXPLAIN YOUR MOTIVATION WELL, EXCEPTIONS CAN BE MADE.



APPLICATION DEADLINE JULY 1ST

PROGRAMME DIRECTOR ROBERT VERBURG
R.M.VERBURG@TUDELFT.NL

WEBSITE LINK WWW.TUDELFT.NL/MSD/MOT

BRIDGING NONE

In the Management of Technology programme you learn to explore and understand technology as a corporate resource - a resource that allows a firm to keep many different balls in the air. It shows how firms can use technology to design and develop products and services that maximise customer satisfaction on the one hand, while maximising corporate productivity, profitability and competitiveness on the other.

STUDENT PERSPECTIVE (GENERAL)

MOT

Hi! My name is Coen, I am a second year student from the Management of Technology program. To start I have a bachelor's degree in engineering, design and innovation (WTB) at the University of Applied Sciences in Amsterdam. This is an engineering bachelor with a broader context. I did like the technical courses during my bachelor, but was intrigued by the courses more related to management and innovation. After finishing my bachelor, I felt that I wanted to gain more knowledge in business administration and innovation management and to develop my managing and leadership skills and insights. Therefore I encountered the MoT program. The variety in courses from the MOT program attracted me the most together with the social interaction that the program stimulates.

The MOT program learned me how to assess the broader context of technological challenges, how to identify technological barriers and opportunities and how to transfer ideas and information into business strategies that focuses on innovation, emerging (technology) trends and add value to society in a responsible way. Moreover, the program teaches you how to handle R&D from a management perspective and how to deal with knowledge and information.

Most courses in the MoT curriculum include group projects. To give some examples of interesting projects I did during the first year, we worked on a research on smart speakers for the High-Tech Marketing course. Through desk research we set up a strategy for the market follower in the smart speaker industry, Google Home, to catch up with the market leader from Amazon.

For the Digital Business Process Management course, we advised a hospital in the Netherlands on their business process regarding patient records and data management. And for the Decision-Making course we analysed how the Noord-Zuidlijn Metro in Amsterdam dealt with technological setbacks and challenges. At the end of the first year the Integration course challenges you on your creativity, where you have to create a game with learning elements. Therefore you have to show all your skills and knowledge you've gained in the first year.

The first two quarters in the first year teaches you the basic academic knowledge in the field with finance, economics and marketing courses related to technology.

COEN WITTEBROOD



The third and fourth quarter go more in depth and focus on innovation management and strategies for emerging technologies. During the second year you will have more opportunity to compile your own program.

In the first few weeks of the program, you will get familiar at the TU Delft Campus and the TPM faculty and you will get to know your fellow students and program coordinators. In the third or fourth week, an introduction week is organized for all MOT students. During my first year, we went on a trip to the province of Zeeland, where we visited The Dutch Delta Works, a series of construction projects in the southwest of the Netherlands to protect a large area of land around the Rhine-Meuse-Schelde delta from the sea.

In the second year I went abroad. I went to Stockholm, Sweden. I applied for an exchange program at the Royal Institute of Technology (KTH). At KTH I participated in courses at the School for Industrial Engineering and Management. I focused more on innovation management strategies and entrepreneurship.

In the second semester of the second year, you will focus on your thesis full-time. I decided to set up a research in Project Portfolio Management and Data Analytics for the Engineering and Construction Industry. After finishing my literature review, I applied at Arcadis. Arcadis gives me the opportunity to focus on my research and gain some experience in the business.

To conclude, the MOT program has a lot to offer and much variation. You should know that this program is a management program and not an engineering program. The content of the program is theoretical and requires motivation and discipline, many self-study hours are required besides the scheduled lectures. Once you are in the program, the time will fly. Looking back on my experiences, I can say that my perspectives on business have changed a lot and that I can't wait to put my knowledge into practice as I feel that I have gained a wide range of insights and skills from the MOT program.

"THE MOT PROGRAM LEARNED ME HOW TO ASSESS THE BROADER CONTEXT OF TECHNOLOGICAL CHALLENGES, HOW TO IDENTIFY TECHNOLOGICAL BARRIERS AND OPPORTUNITIES AND HOW TO TRANSFER IDEAS AND INFORMATION INTO BUSINESS STRATEGIES THAT FOCUSES ON INNOVATION, EMERGING (TECHNOLOGY) TRENDS AND ADD VALUE TO SOCIETY IN A RESPONSIBLE WAY."

STUDENT PERSPECTIVE (TB)

MOT

An MoT student with TB as bachelor's degree is quite the odd one out. Usually, a TB student cannot move on to MoT, because the master is based on a technical basis and would have too much overlap with the bachelor. A possible way to be eligible for this master anyhow, is to follow a technical or "hardcore" minor. With the minor Computer Science, it was, therefore, possible for me to opt for MoT. This choice of MoT over CoSEM and EPA was mainly based on the desire to view socio-technical problems from a business perspective. I missed this perspective during my bachelor's, so I wanted to give substance to this during my master's programme.

Currently, I am in the 4th quarter of the first year of the program and I must say that I enjoy the program. The perspective I was looking for is fully present and contains all kinds of elements that I already reap the benefits of. Inside, but also outside the master. Starters, whom I know from student life, also confirm the usefulness of my already acquired knowledge in conversations that I have with them. In line with this, the examples during the lectures on which theory builds fit very well with the problems in today's society. This means that an MoT student can talk about many current events and has the theoretical foundation to substantiate positions during conversations.

In addition, MoT is a good match for TB. I am very happy that I could start this program, so I think the rule of the required "hardcore" background is too strict, but it does have a well-founded reasoning. Without it, the knowledge that is obtained cannot be put in the context of a specific technical niche.

In my opinion, however, I could also have followed MoT with a strong interest in ICT without following the minor, but I would like to emphasize the importance of that strong interest. In line with this story, I would also like to compare MoT to 'Technische Bedrijfskunde'. In Dutch terms, I believe that this title covers the study load very well. For comparison, I also found the following explanation with the explanation of the bachelor Technische Bedrijfskunde at the University of Twente: "As a technical business expert you are involved in the design, management, and improvement of business processes. You make organizations more efficient, maximize profit, minimize risks, and improve quality and competitive position."

MAX FUKKINK



You use models and techniques to systematically analyse the strengths and weaknesses of a company. In our training, you will also learn how to implement the necessary changes effectively and how to estimate the consequences for the organization, personnel, quality, finances, sustainability, or market position. You combine knowledge from the fields of business administration, ICT, mathematics, and technology, among others.” In my opinion, this description could also be applied very well to MoT. I would like to underline that, thanks to the business perspective, MoT enriches the knowledge gained at TB.

Finally, I personally miss to some extent at MoT the programming and modelling that was discussed at TB. I would like to have seen business process modelling with a program (whether personally coded or not) in the curriculum. That might also have given the program a bit more of a challenge, for which I think is still some room left. On the other hand, this does offer opportunities for a part-time significant job or a combination with another (part-time) study, training, or various courses.



INDUSTRIAL ECOLOGY (IE)



APPLICATION DEADLINE

JUNE 15TH

UNIVERSITY

**COMBINATION OF LEIDEN
UNIVERSITY AND TU DELFT**
(BE AWARE, YOU HAVE TO REGISTER
AT LEIDEN UNIVERSITY)

PROGRAMME DIRECTOR

STEFANO CUCURACHI
S.CUCURACHI@CML.LEIDENUNIV.NL

WEBSITE LINK

WWW.TUDELFT.NL/ONDERWIJS/OPLEIDINGEN/MASTERS/IE/MSC-INDUSTRIAL-ECOLOGY/

BRIDGING

NONE

The master of science in Industrial Ecology (IE) offers talented students from around the world the opportunity to enhance their expertise and work on current challenges faced by the world today. Industrial Ecology is an emergent scientific discipline that promotes a systemic approach to human problems, integrating technical, environmental and social aspects. It is argued that this approach will show the way to sustainable development. For that reason Industrial Ecology is considered to be the 'toolbox for sustainable development' and the 'science of sustainability'. Industrial Ecology is a cooperation between TU Delft En Leiden University.

STUDENT PERSPECTIVE

INDUSTRIAL ECOLOGY

The last few years sustainability became a lot more interesting to me. I was involved in different projects and I wanted to know more on the subject and on how to implement it. The experts from both TU Delft and Leiden University are making a programme that integrates technology with social and natural sciences.

The master's programme Industrial Ecology evolves around three pillars: natural science, social science and engineering. It goes into a lot of different aspects on sustainability, which makes you an all-rounder on this topic. The focus lies on socio-technical systems and how to make them more sustainable. So renewable technologies and sustainable concepts and the implementation of them in the current society.

From September 2020 the curriculum will be renewed, but the learning goals will stay the same. You will focus on different aspects of sustainability, like energy, circular economy, transport, waste management, but it also teaches tools on how to analyze sustainability like a life cycle analysis and data analysis (which are electives, so not mandatory).

You have a lot of freedom in choosing a topic that you like. I for example wrote a paper on waste management in Indonesia, as I would love to do something in developing countries. However, a friend of mine wrote it on energy from algae and someone else on the sharing economy. Sustainability is very broad and in this way you can specialize in the topic that you're interested in. Another interesting project was to assess the nitrogen in The Netherlands and other European countries, or to analyze what the global impact is of using less scarce materials in a country.

A project we're working on now is how to integrate sustainability in an existing area (Buiksloterham, in Amsterdam), mainly focusing on energy, materials and water management.

I think the content of the courses is very interesting. I learned a lot of content-wise related things, but I also like the tools we learn to address and improve the environmental problems! The group projects are very interesting and you get a lot of freedom on choosing topics and electives to specialize in the area you prefer. The flexibility you get in choosing topics provides a lot of opportunities, but can also be quite overwhelming. Make sure you're well prepared and be aware you can talk about this with teachers, classmates and the study advisors.

MIRA GROOT



TRANSPORT, INFRASTRUCTURE AND LOGISTICS (TIL)



APPLICATION DEADLINE

NONE

FACULTY

CIVIL ENGINEERING, 3ME
AND TPM COMBINED

PROGRAMME DIRECTOR

JOHN BAGGEN
J.H.BAGGEN@TUDELFT.NL

WEBSITE LINK

WWW.TUDELFT.NL/MSC/TIL

BRIDGING

NONE

The MSc programme in Transport, Infrastructure and Logistics (TIL) is a two-year comprehensive programme that provides graduates with a comprehensive view of the field of transport, infrastructure and logistics.

TIL graduates have up-to-date knowledge of:

- transport policy making and spatial planning
- design of transport systems, supply chains and infrastructure networks
- the operation, management and control of these systems.

They know how to design new road, rail, air and water transportation services for passengers and/or freight; to efficiently manage transportation networks; and to design and control complex supply chains. These skills are invaluable for the design, development and maintenance of cost-effective, efficient systems for moving passengers and freight. TIL graduates are able to make appropriate decisions for clients, employers and society, because they understand the complex decision-making processes during infrastructure development and planning.

STUDENT PERSPECTIVE

TIL

After finishing the bachelor Technische Bestuurskunde, I started with the master's programme Transport, Infrastructure and Logistics at the TU Delft. This master is hosted by three faculties; Civil Engineering, Technology Policy and Management and Mechanical Engineering. It combines courses from different master's programmes at the three faculties into one full master program and offers a broad insight in the field of TIL.

I chose this master because I wanted to specialise in the field of Transport and Logistics. Besides that, I was interested in a more technical and programming perspective on these topics. TIL offers programming and engineering courses and combines this with governance and policy courses. In this way it is similar to the specialisation Transport and Logistics in the bachelor, but it is a little bit more mathematical and technical.

The master consists of three types of courses. First of all, there are "fundamentals". These courses are mandatory for all students and teach you the core and basics of Transport, Infrastructure and Logistics. "Transport Modelling", "Statistical analysis of choice behaviour" and "Quantitative methods for logistics" are examples of fundamentals. Then there is a specialisation. In TIL you can focus on four domains within Transport, Infrastructure and Logistics topics.

The four specialisations are "Engineering", which focusses on supply chains and the optimisation of these, "Design", which focusses on the structuring of networks, "Policy", which focusses on the governance of Transport networks and infrastructures and the last one is "Operations", this specialisation focusses on the processes and functioning of networks.

Next to the fundamentals and the specialisation there is room for electives of your choice. Up till now I have done some cool projects. One of which was in collaboration with Deloitte's Supply Chain Strategy department. My group and I were asked to optimise the supply chain of a sports brand, specifically their online branch. First, we made an analysis of the existing processes and operations and after that we came with possible innovations to realise a leaner supply chain. This is an example of a logistics project. I also did a course "Airport Operations" in which we learned everything about the functioning of an airport.

CLAIRE POST





We were asked to make an analysis of the operations of Hong Kong International Airport. I really enjoyed looking into the functioning of the airport and the particular choices that were made while constructing the airport.

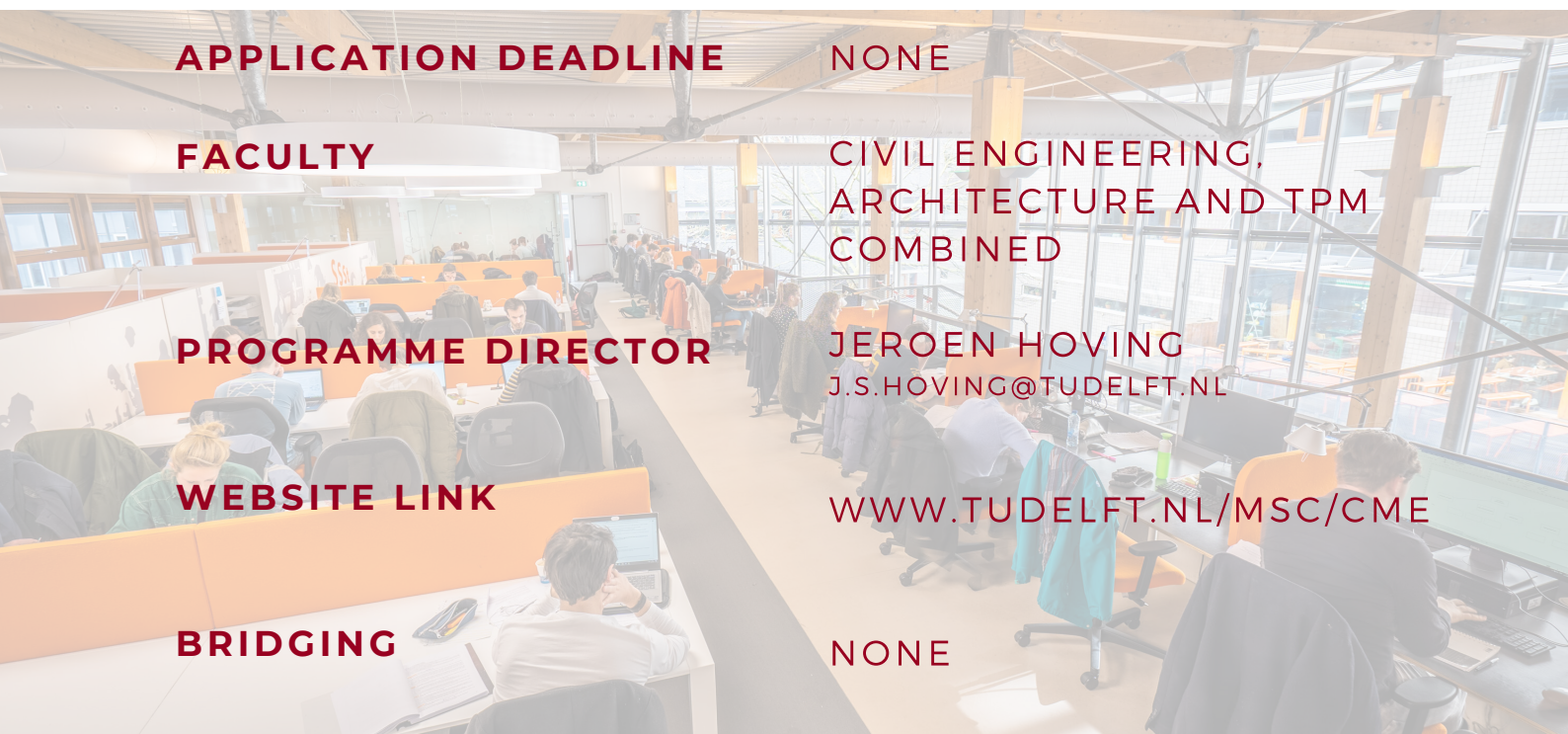
For me an important advantage of this master is the programming it teaches you. I learned to program in Python, Matlab and R and I feel these are valuable skills to have. Furthermore, I really enjoy the fact that most of the theory is directly applicable in daily operations.

Many case studies and project focus on everyday issues of multinationals or municipalities and TIL students are taught to put knowledge into practice.

A possible downside of this master might be that it requires some planning from the student's side. It is your own responsibility to organise the courses you are taking and make sure the program is sufficient. This results in the fact that it is difficult to do electives or an internship abroad. As this takes much time and the courses might not meet the requirements of the master it is highly unusual for TIL students to go on exchange.



CONSTRUCTION MANAGEMENT AND ENGINEERING (CME)



APPLICATION DEADLINE

NONE

FACULTY

CIVIL ENGINEERING,
ARCHITECTURE AND TPM
COMBINED

PROGRAMME DIRECTOR

JEROEN HOVING
J.S.HOVING@TUDELFT.NL

WEBSITE LINK

WWW.TUDELFT.NL/MS/CME

BRIDGING

NONE

The master program Construction Management and Engineering (CME) addresses the growing need for reform in the construction industry. The program offers a broad spectrum of courses to prepare the student for the dynamic environment of the construction business by focusing on management aspects of large engineering projects during design, project execution and maintenance. Core themes that CME addresses are integral & collaborative design processes, optimisation of project management, risk & asset management throughout the design and life-cycle, as well as the legal & financial aspects of construction projects.

CME is an interfaculty program that combines the relevant expertise of the faculties of Civil Engineering & Geosciences (CEG), Architecture & the Built Environment (ABE) and Technology, Policy & Management (TPM). Through the shared expertise and collaboration of the three faculties CME offers its students a unique programme that provides the competences required to combine engineering knowledge with management skills and prepares future engineers for exciting jobs in today's demanding construction projects in an international context.

STUDENT PERSPECTIVE

CME

CME stands for Construction Management and Engineering and is a joint master of the faculties Civil Engineering, TPM and Architecture. This means you can start the master without doing a bridging program if you have a bachelor from one of these faculties. Since a master can't be located at three faculties, it is mainly located at the Civil Engineering faculty. Coming from the bachelor TB, the CME master doesn't seem to be the most obvious pick. However, you can apply many of your learned TB-skills in the master and future work.

Personally, I chose CME because I like that it's more specific. Sometimes in the bachelor TB I found what you're working on a bit vague and the level of the overall perspective too high. You analyze things in the bigger picture and often with a policy-minded view. CME on the other hand is a bit more specific; the goal is almost always to realize a big construction project. This could be a building, but also a bridge or a highway for example. In the master, your courses lead you through the different phases of the project and needed expertise. Examples of topics that come across the courses are project management, finance of the project, project risks, legal and governance of construction projects, stakeholder management and asset management. As you can read, many of these are TPM-like topics. Also, there are multiple courses with projects in groups so you learn how to work together in a project team. You don't necessarily must have done the B&R domain to start CME. I myself did E&I and I have had no problems connecting with the CME course content.

But, I also get challenged by having to work on civil engineering topics that are technical in a way that's different than I'm used to at TB.

The master being a combination of three faculties makes that you have courses from all three faculties as well. Since I've started, I have had courses together with EPA and CoSEM students. Next to the compulsory courses, there's an elective course space in which you can choose your own courses. This means you can also choose EPA courses for example. On the other hand you can also choose very technical civil engineering electives if you want your master to be more technical. Maybe you are still in doubt between CME and another master and this could solve your problem!

FRÉDÉRIQUE BATELAAN





At CME there's unfortunately no Curius, but we have a very nice alternative called the CME Dispuut. The CME Dispuut organizes nice and fun activities around the year and tries to connect CME students to the job market. CME students are in general very popular in the construction sector. This makes that a lot of companies are willing to partner up with the CME Dispuut for activities like lunch lectures, company days, site visits, etc. With the money that is derived from this, the CME Dispuut can host drinks, parties and trips. The annual highlight of this is the international business tour which visited Dubai and Abu Dhabi last November.

But why are the CME students so popular amongst companies? The answer lays in the TPM-skills of the master combined to the construction sector. For big construction projects it is of great importance that someone in a leading role (like a project manager for example) is communicatively strong, is able to make decisions and sees the bigger picture or system behind the project. You know which parts of the project interfere with each other and you can combine people and tasks. These TPM-skills that normal civil engineers don't master are very important to make big construction projects successful.

"EXAMPLES OF TOPICS THAT COME ACROSS THE COURSES ARE PROJECT MANAGEMENT, FINANCE OF THE PROJECT, PROJECT RISKS, LEGAL AND GOVERNANCE OF CONSTRUCTION PROJECTS, STAKEHOLDER MANAGEMENT AND ASSET MANAGEMENT. AS YOU CAN READ, MANY OF THESE ARE TPM-LIKE TOPICS. ALSO, THERE ARE MULTIPLE COURSES WITH PROJECTS IN GROUPS SO YOU LEARN HOW TO WORK TOGETHER IN A PROJECT TEAM."

GEOMATICS



APPLICATION DEADLINE

NONE

FACULTY

ARCHITECTURE

PROGRAMME DIRECTOR

BASTIAAN VAN LOENEN
GEOMATICS@TUDELFT.NL

WEBSITE LINK

WWW.GEOMATICS.TUDELFT.NL

BRIDGING

NONE

Geomatics for the Built Environment provides vital spatial knowledge about the built environment. Students learn to use advanced techniques in data collection and analysis, spatial information modelling and the visualisation of data. They learn about the use, governance and application of geographic data for solving real-world problems in an innovative way. Geomatics professionals easily find jobs in (international) companies, universities and governmental institutes.

STUDENT PERSPECTIVE

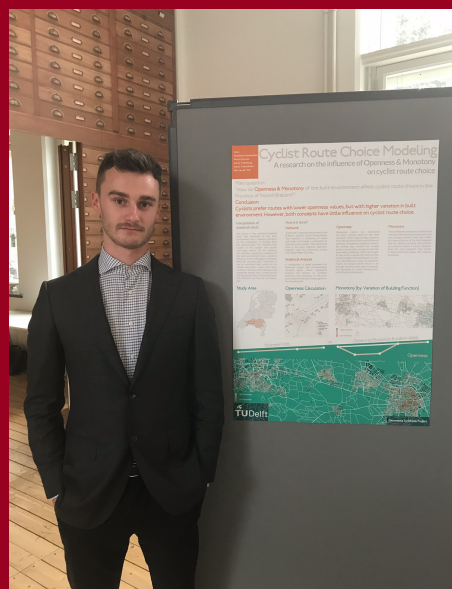
GEOMATICS

While finishing up my bachelor's degree at the faculty of Technology, Policy and Management I started looking for master's programme to continue my studies. During the course of the bachelor program, I chose a specialization track with courses focusing on built environment design and management, mainly fueled by enthusiasm for geography and spatial design. It was primarily the content of these courses that drove me towards the Geomatics master in Delft, as it sparked my interest in built environment design problems and potential ways of analysing and solving them. Although the Geomatics master reaches far beyond spatial design problems only, its application on the built environment creates a lot of overlap with my initial interests. On top of that, the possibility to learn and be part of the growing opportunities of data, and in particular geo-data, was a main reason for me to enrol for the Geomatics master.

Geomatics for the Built Environment covers the entire process of collecting, processing and analysing, governing, and presenting geo-data, in order to gain spatial knowledge that may contribute to solving real-world problems. The courses taught within the programme initially give an introduction to the acquisition of geo-data, Geographical information systems (GISs) to analyse and present geo-data, and programming techniques to process geo-data. During the first year, the remaining courses build on this fundament by teaching about data storage and management, standardization and governing of geo-data, positioning techniques, and 3D modelling. Each course exists of a theoretical part, and a part where the theory is put into practice by application in the field.

All knowledge you gain throughout the first year is combined in a large synthesis project at the end of the year. Every group of students tackles a built environment problem, defined in co-operation with a real client. For example, my group worked together with a provincial government to analyse the behaviour of cyclists with the purpose of establishing the most suitable design for a new bicycle lane network. By using tracking data (GPS measurements) of the cyclists, we were able to recognize movement patterns and relate this to the design of the built environment. This project really touched upon every aspect we learned about during the course of the year, as it required us to handle large amounts of data, model the built environment, create algorithms to analyse the movement patterns of cyclist in relation to the built environment, and visualise the results in a proper way.

ERIK VAN DER WAL



STUDENT PERSPECTIVE

GEOMATICS

The second year of the programme gives the opportunity to broaden your knowledge by following electives or studying abroad for a semester, and ends with a graduation project for which you have a wide range of potential topics and application fields. For me, the many different application fields and opportunities within the programme to explore those, where one of the most enjoyable aspects of the Geomatics master. While the importance of theory strongly comes forward in every course, the practical aspect really provides insight in the many potential applications of Geomatics. This is further supported by strong collaborations with companies, which gives you a lot of opportunities for field visits (even abroad) and networking. Finally, an element of the program that I consider as a major plus is that many assignments and projects are carried out in groups, which enables you to learn a lot from fellow students with diverse backgrounds and nationalities. All in all, the Geomatics master gives you the chance to learn a lot in a short period of time about many aspects evolving around geo-data, working together with people from various fields, and it can in the end provide you with a wide range of job opportunities.



AND MORE...

ALL THE MASTERS THAT ARE MENTIONED ABOVE SEEM TO BE LOGICAL FOLLOW-UPS AFTER TECHNISCHE BESTUURSKUNDE. OF COURSE, THERE IS AN ENDLESS AMOUNT OF MASTERS THAT YOU CAN DO, IF YOU ARE WILLING TO LOOK AT OTHER FACULTIES AND EVEN UNIVERSITIES, AND IF YOU ARE WILLING TO FOLLOW A BRIDGING PROGRAM. BELOW, A FEW MASTERS THAT MIGHT BE LESS COMMON THAN THE MASTERS ABOVE, BUT THAT COULD STILL FORM A GOOD FOLLOW-UP AFTER TB, ARE DISCUSSED BRIEFLY.

MBE

MBE is a master track within the master programme Architecture. Even though you have to follow a bridging programme of 2 semesters to be applicable for this master, it forms a logical follow-up because of its management based view on the built environment. This master programme can be seen as the architectural variant of CME.

Link: www.tudelft.nl/onderwijs/opleidingen/masters/aubs/msc-architecture-urbanism-and-building-sciences/master-tracks/management-in-the-built-environment/

MADE

MADE is an interdisciplinary programme of both Delft University of Technology and Wageningen University & Research. For MADE, no bridging programme is required.

Link: www.tudelft.nl/onderwijs/opleidingen/masters/made/msc-metropolitan-analysis-design-and-engineering/

MATERIALS SCIENCE & ENGINEERING

MSE is a master programme from the faculty of 3me. You have to follow a bridging programme of only 18 ECTS, so it might be something to consider.

Link: www.tudelft.nl/msc/mse

TRANSPORT & PLANNING

Transport & Planning is a master track within the master programme Civil Engineering. For this master track, you have to follow a bridging programme of 2 courses; differential equations and numerical mathematics and you have to be able to work with Python.

Link: www.tudelft.nl/onderwijs/opleidingen/masters/ce/msc-civil-engineering/msc-programme/track-transport-planning/

TPM MASTER BROCHURE

TPM MASTER BROCHURE

**GOT ANY
QUESTIONS?**

**VISIT THE ONLINE MASTER EVENTS
ON MAY 14 AND JUNE 11**

OR

E-MAIL US AT
MASTER@CURIUS.NL (BAS)
BACHELOR@CURIUS.NL (ANNELOTTE)

MAY 2020