

Construction Management and Engineering (4TU)

MSc Programme



The construction industry is changing rapidly. 3D-printing, shifting roles, complex logistics, public private partnerships and globalisation are just some of the new factors affecting the nature and management of projects. A dynamic environment call for managers who are able to combine engineering with analytical and organisational skills. CME therefore focusses on technical approaches to processes, in which governance issues, societal trends and management methods are integrated.

Degree	Master of Science
Starts	September
Type	full-time
Credits	120 ECTS, 24 months
Language	English
Application deadline	1 April
Tuition fee	€ 18.750 (non EU) € 2.083 (EU)
Scholarships	scholarships.tudelft.nl

Programme

Today's society is looking for engineers who have the competences to combine engineering knowledge and management skills. The CME Master offers a unique programme designed to achieve just that. Combining technical knowledge and management skills, the programme prepares students for exciting jobs in today's demanding construction projects in an international context. Learning and doing are basic concepts in the CME curriculum. Besides being a 4TU MSc programme, one of the unique features of the CME programme is its broad management orientation.

It acknowledges that in real life, infrastructure projects have to be designed and realised in complex environments, and that the success of any civil engineering project relies heavily on the management of projects and buildings processes. The programme is both process and design-oriented as well as project based focusing on knowledge of processes, lifecycle and risk management and integrated contracts, to name just a few aspects. A Master's degree in CME provides students with extensive knowledge in the field of management and communication, with courses on cross-cultural management, financial engineering and project

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FIRST YEAR	SECOND YEAR
CORNERSTONES (28 EC)	SPECIAL SUBJECTS (CHOOSE ONE) <ul style="list-style-type: none"> • INTERNSHIP (10 EC) • MULTIDISCIPLINARY PROJECT (10 EC) • ADDITIONAL GRADUATION WORK (10 EC)
COMPULSORY COURSES (32 EC)	ELECTIVE COURSES (14 EC)
	MSC THESIS (32EC) & THESIS PREPARATION (4EC)

management. The students participating in this programme not only develop their engineering, problem-solving and communication skills, but also learn how to achieve change in the building industry and assess the consequences for the construction process and its organisation. CME is multidisciplinary, internationally orientated and offered jointly by the faculties of Civil Engineering and Geosciences, Architecture and the Built Environment and Technology Policy and Management at TU Delft and 4TU context. Because CME is preparing for jobs in an international context, the staff facilitates the students to go abroad for courses, projects, internships and end thesis research.

Specialisations

Students can choose their own path within the programme, assisted by one of our student advisors. The programme offers four directions that reflect current trends and needs in the market:

Project Management explores a new perspective on applying operations research (Decision-Making Engineering) in design and construction management. Namely, this perspective is that technical and social optimisation should not be separate processes, but should be integrated into a single design and construction process.

Asset Management covers maintenance and management systems for quality, the environment and safety. These systems are increasingly becoming intertwined. How can we provide direction, and where can we optimise processes? And what role can information technology play? Asset management is examined as the bridging link in the system.

Infrastructure and Environment focuses on the balance between economics and sustainability, while taking all legal, safety-related and humanitarian aspects into consideration.

Legal and Finance considers the financial and contractual issues related to the implementation of civil engineering projects. It introduces concepts and topics from economic engineering and finance, such as project financing and financial accounting.

Graduation examples

- Integration of probabilistic scheduling and costing.
- Governing contractor projects in which 3D printing is applied.
- Performance based maintenance contracts
- Probabilistic estimating of engineering costs.
- Towards perception-based management of complex construction projects.
- Risk allocated: problem solved? Research into risk allocation in Dutch infrastructure projects.
- Machine learning: of value to infrastructure?

Career prospects

Almost all CME students find work within three months of graduating. CME graduates typically find positions as management trainees at large companies within the building industry, but they work in other sectors as well. Alumni work in a great variety of jobs in planning, engineering and management. For example, at multinationals such as Shell and KPN, and for consultancy firms such as McKinsey, but most of them work for large national and international engineering firms such as Van Oort, Royal Haskoning DHV, Heijmans, PRC, Ballast Nedam and BAM. CME graduates are equally at ease speaking to technical experts and engineers and to management, and often work in interdisciplinary environments. They have a systematic approach to problem solving, think analytically, discern the connections between the technical and social aspects of a situation, and are adept at recognising common patterns that link issues across domain boundaries. They have thorough knowledge of technology and the building industry and analytics skill to perform analyses of management processes.



43 %
International students



246
Students in total



63%/37%
M/F



Active student
association