

Applied Earth Sciences European Mining Course

MSc Programme



With a growing world population, the demand for metals and minerals is increasing. But awareness of environmental issues is growing too and the world expects resources to be extracted in a responsible manner. It will be up to the geo-resource engineer of the future to operate successfully in this challenging environment.

Degree	Master of Science
Starts	September
Type	full-time
Credits	120 ECTS, 24 months
Language	English
Application deadline	1 April (for Dutch and International students)
Tuition fee	€ 18.750 (non EU) € 2.168 (EU)
Scholarships	scholarships.tudelft.nl

Programme

The triple degree Master European Mining Course (EMC) offered by TU Delft, RWTH Aachen and Aalto University covers every aspect of the life cycle of mineral resources. It is designed to provide a solid understanding of the global mining industry and takes a life-cycle approach by covering the entire mining value chain. The programme offers a state-of-the-art technical basis in resource modelling, mine design and economic evaluation. Technical knowledge is also supplemented with topics on business, economics, ethics and environmental engineering. The programme also covers a clearly defined and structured topic series on

the management of health and safety and environmental impact of mining. EMC aims to train professionals of the future, who will be the decision makers and game-changers in mineral resources and associated engineering trades, delivering a strong vision of the future of the industry.

EMC supports the development of students into adaptive, innovative and entrepreneurially-oriented engineers that are capable of identifying the best approach to obtaining optimal value from mineral ore deposits. Lectures involve industry, study tours and site visits to business partners to see real-world

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Semester 1	Semester 2	Semester 3	Semester 4
Aalto University	RWTH Aachen University	Delft University of Technology	Thesis
Fundamentals of minerals engineering and recycling (5 ECTS)*	Feasibility studies of mining projects (5 ECTS)	Data analysis and resource modelling (5 ECTS)	Thesis carried out at one of the universities or at a company with support from EMC and EIT RawMaterials (30 ECTS)
Technical innovation project (10 ECTS)*	Reserve modelling and estimation (5 ECTS)	Computer-aided mine design and optimisation (5 ECTS)	
Economic geology and mineral economics (5 ECTS)	Mine design and simulation (5 ECTS)	Legal, health and safety (5 ECTS)	
Rock mechanics (5 ECTS)	Mine ventilation (5 ECTS)	Financial engineering and investment scenarios (5 ECTS)	
Field experience and project in hard rock mining (5 ECTS)	Case study: mining projects (5 ECTS)	Project execution/mine start-up planning (10 ECTS)	
*Component of the circular economy design forum	Mine Waste (5 ECTS)		



operations. Additionally, at TU Delft you will be introduced to YESDelft!, one of the top incubators in Europe. The programmes at YESDelft! focus on validating and growing promising technologies into successful enterprises.

Students study for one semester at each of the three universities and move between countries as a group. The programme starts in the autumn at Aalto University. After a break, during which the students have the opportunity to complete an internship at a company, students move to RWTH Aachen and finally they continue the third semester at TU Delft. The final semester is spent at one of the three partner universities to work on a thesis project, which is carried out in cooperation with a company. Upon completion students receive a triple degree diploma from each of the three participating universities.

Specialisations

The programme does not offer any set specialisation. However, you do have the room to do an internship (no credits awarded) and you are able to choose the subject of your thesis. This way you can still gain specialized knowledge on the topic of your interest as long as it is relevant within the EMC programme.

Graduation examples

- Marlotte Kox (2017). Study on the Impact of Trolley Assisted Haul Trucks on Strategic Mine Planning
- Mathijs Groenewegen (2017). Investigation of Vertical Cutter Mining for Increased Primary Resource Recovery
- Kaj van der Waal (2017). Productivity Improvement and Cost Reduction of the Ahafo Gold Mine Through Rock Fragmentation Optimisation
- Laurens Tijsseling (2017). Linking the Characterisation of Cobalt -Bearing Copper Ore To Comminution Properties

Career prospects

Given the growing worldwide demand for professionals in Mining and Minerals Engineering and Management, graduates of this programme can be assured of having promising career opportunities. After completing your degree, you are qualified to work for mining companies, companies engaged in minerals and metals processing technology, the mining and minerals business, companies working on ore deposits and integrated production, market leaders in efficient dredging and mining, aggregates companies, government agencies, engineering and consulting, firms, banks, global oil services, wedge institutions, mining equipment suppliers, research institutes and think-tanks.



15th
in QS subject ranking 2020
Minerals & Mining



50%
international students



10
first year students in 2020



3
universities to study at: TU Delft,
RWTH Aachen, Aalto University

Career perspective



96%
job in industry