Deutscher Akademischer Austauschdienst
German Academic Exchange Service

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Master's degree

IDEA League Joint Master's in Applied Geophysics

RWTH Aachen University • Aachen

Overview

Degree	Master of Science in Applied Geophysics
In cooperation with	TU Delft, The Netherlands; ETH Zürich, Switzerland
Teaching language	• English
Languages	The courses of the curriculum are taught 100% in English. The students can also take other courses at the three partner universities on a voluntary basis in order to extend their competences. Those courses can be taught in another language (mostly Dutch or German).
Programme duration	4 semesters
Beginning	Winter semester
Application deadline	1 April for all EU/EFTA and non-EU/EFTA students who are **NOT** applying for a comprehensive scholarship 1 December for all EU/EFTA and non-EU/EFTA students who are applying for a **comprehensive scholarship** For the most complete and up-to-date information, check the programme website: http://www.idealeague.org/geophysics/admission.
Tuition fees per semester in EUR	1,000 EUR
Additional information on tuition fees	https://www.tudelft.nl/en/education/practical-matters/tuition-fee-finances/ • EU/EFTA students: approx. 2,000 EUR per year • Non-EU/EFTA students: approx. 15,000 EUR per year
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	Yes
Description/content	The two-year programme comprises 18 months of coursework, divided into three teaching periods in Delft, Zurich, and Aachen. During this time, students attend lectures and participate in extensive

hands-on data acquisition and processing exercises. Lectures on various research-level subjects are also included in the programme. The final five months are devoted to a research thesis project at one of the three universities or in industry. The thesis is a key component in the preparation and training of specialists for the practical world.

- Geophysical modelling and inversion
- Electromagnetic exploration
- Reflection seismology
- Scientific Programming
- Geology for geo-energy
- Seismic imaging
- Hydrology
- Rock-fluid interactions
- Soil mechanics
- Exploration geology
- Sequence stratigraphy
- Geothermal energy
- Geofluids
- Petrophysics
- Geophysical logging
- Application of geophysical prospecting in earth and environmental science
- Small-scale NMR
- Electrical & spectral induced polarisation methods
- Hydrogeophysics
- Machine learning
- Microtectonics and image processing
- Finite elements in fluids
- Data analysis for geoscientists
- Numerical reservoir engineering
- Sedimentary basin modelling and dynamics
- Remote sensing of sedimentary basins
- Engineering geophysics
- Geohazards
- Final Disposal
- One-month field course

Course Details

Course organisation

First semester at TU Delft
You will start your education on 1 September at TU Delft. To benefit fully from the joint Master's programme, it may be necessary for you to review some appropriate convergence courses that are available online.

Second semester at ETH Zürich
You will have two weeks to move to Zürich, where your education continues at ETH Zürich with courses on modelling, processing, and inversion of geophysical and hydrological data. It is during this period that you will design and execute geophysical fieldwork. The coursework at ETH Zürich ceases at the end of June.

Third semester at the RWTH Aachen University
After the summer break, you will continue in early October with your programme at RWTH Aachen University. You will be educated here in environmental and exploration geology, geothermics, hydrogeology, petro- and engineering geophysics. In November, the Master's thesis topics will be presented, and you will be able to choose a project of your liking. Alternatively, you can propose your own project idea (requires approval of the examination committee). The study period in Aachen ends by the end of February.

Fourth semester: Master's thesis
Subject to availability and an equitable distribution of active thesis projects amongst the three partner universities, every effort will be made to provide you with research themes that match your preferences and suit your knowledge, skills, and experience. For most students, the six-month thesis project will be completed at one of the three partner universities. Collaborative thesis projects may involve spending time at two of the partner universities. Some themes may involve

	extensive periods of closely supervised research in industry, government, or other university laboratories.
A Diploma supplement will be issued	Yes
International elements	• Integrated study abroad unit(s)
Integrated study abroad unit(s)	In the 120 EC (European Credits) joint Master's programme, the students study together at each university and move between universities as a group. First semester: geophysical foundations at TU Delft Second semester: foundation development, advanced techniques and field acquisition and processing at ETH Zürich Third semester: geophysical applications and special topics in geophysics at RWTH Aachen Fourth semester: Master's thesis work
Integrated internships	None
Special promotion / funding of the programme	• Other (e.g. state level)
Course-specific, integrated German language courses	Yes
Course-specific, integrated English language courses	Yes

Costs / Funding

Tuition fees per semester in EUR	1,000 EUR
Additional information on tuition fees	https://www.tudelft.nl/en/education/practical-matters/tuition-fee-finances/ • EU/EFTA students: approx. 2,000 EUR per year • Non-EU/EFTA students: approx. 15,000 EUR per year
Semester contribution	Included in tuition fees
Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	https://idealeague.org/students/studentgrants/ https://idealeague.org/admission/

Requirements / Registration

Academic admission requirements	For the most complete and up-to-date information, please see the programme website at http://www.idealeague.org/geophysics/admission.
Language requirements	For the most complete and up-to-date information, please see the programme website: http://www.idealeague.org/geophysics/admission
Application deadline	1 April for all EU/EFTA and non-EU/EFTA students who are **NOT** applying for a comprehensive scholarship 1 December for all EU/EFTA and non-EU/EFTA students who are applying for a **comprehensive scholarship** For the most complete and up-to-date information, check the programme website: http://www.idealeague.org/geophysics/admission.
Submit application to	https://idealeague.org/admission/

Services

Possibility of finding part-time employment	International students may work in the private sector during the semester or in the semester break for up to three months without having obtained a work permit. Thus, students may work full-time for 120 days or part-time for 240 days. This regulation is also stated on the residence permit. During the semester, students are allowed to have jobs with working hours of up to 20 hours a week. Student assistants have more flexibility with regard to working hours, as the 90/180 full-time and part-time regulations do not apply.
Accommodation	http://idealeague.org/logistics/
Career advisory service	TU Delft: https://www.tudelft.nl/en/student/counselling/managing-your-career/ ETH Zürich: https://ethz.ch/students/en/careers/Startseite_CareerCenter.html RWTH Aachen: http://www.rwth-aachen.de/go/id/ejx?lidx=1#aaaaaaaaaaaaseo
Support for international students and doctoral candidates	• Welcome event • Buddy programme • Tutors • Visa matters
Supervisor-student ratio	1:25

Our Partners

RWTH Aachen University

On 6 October 1999, the IDEA League was formed by the signing of a memorandum of understanding between four leading European universities of technology: Imperial College London (United Kingdom), Delft University of Technology (Netherlands), ETH Zürich (Switzerland), and RWTH Aachen University (Germany). In 2006, ParisTech (France) joined the collaboration. Since 2014, Chalmers University of Technology (Sweden) has been a member of the IDEA League network. In 2016, University Politecnico di Milano (Italy) joined the IDEA League.

Information about RWTH Aachen University
With 260 institutes in nine faculties, RWTH Aachen University is one of Europe's leading institutions for science and research. Currently, more than 44,500 students are enrolled in 144 academic programmes. More than 8,500 of them are international students hailing from 130 different countries. The scientific education students receive at RWTH Aachen University is firmly rooted in real-world application. As a result, our graduates are highly sought after by businesses to work as trainees and fill executive positions. National and international rankings show that our graduates have a high aptitude for managing complex tasks, constructively solving problems in teams, and taking on leadership responsibilities. Thus, it should come as no surprise that one in five board members of German corporations is an alumnus of RWTH Aachen University.
Work conducted in the research centres at RWTH Aachen University is strongly oriented towards the current needs of industry, commerce, and the professions. This has resulted in numerous innovations, patents, and licences. The individual competence centres at RWTH Aachen University collaborate effectively across departments and faculties in interdisciplinary groups and forums, while still maintaining a strong focus on their own department specialisation. For instance, the computer science and biology departments - and even the social sciences - all have a clear connection to the school's engineering focus. This has been a crucial factor in motivating multinational corporations such as Philips, Microsoft, and Ford to locate their research institutions in the Aachen region.
Excellence in teaching and research constitutes the basis from which RWTH Aachen University works with other leading institutions and technical universities around the world.

University location

RWTH Aachen University
As Germany's westernmost city, Aachen is located on the borders of Belgium and the Netherlands. Its population is about 260,000. Aachen's historic centre around the distinctive cathedral (UNESCO world heritage site) is characterised by a student lifestyle. At the city's doorstep, the hilly Eifel landscape with its rivers, lakes, and forests offers a picturesque countryside for outdoor recreation.
Aachen benefits from its central location in the heart of Europe!

Contact

RWTH Aachen University
Department of Geosciences and Geography

Wüllnerstr. 2
52056 Aachen

appliedgeophysics@geol.rwth-aachen.de
Course website: https://idealeague.org/geophysics/

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Section K23 – Information on Studying in Germany
Kennedyallee 50
D-53175 Bonn
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