

Handbook The Mobility Window

Repository Safety in Mineral Resources Engineering (M. Sc.)



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Introduction

You've just started this Master's program (specialization: *Repository Safety*) or you're already in it and you're wondering: "What exactly is the *Mobility Window* and what do I have to do?" or you've just realized that the question is rather good? Then you've found the right paper! This handbook explains everything important you should know about the *Mobility Window*. Its purpose is to help you with the planning and to be an additional document to the official examination regulations. Thus, it needs to be mentioned that this is not a legally binding document.

In the 3rd Semester (Winter Semester), the *Mobility Window* offers students several options. This allows each student to acquire the amount of 30 Credit Points (CP; 1 CP = 30 hours of work) to complete the semester successfully in an individual way. It is possible and may be necessary to combine multiple options with one another if the maximum amount of CP per option is not exceeded.

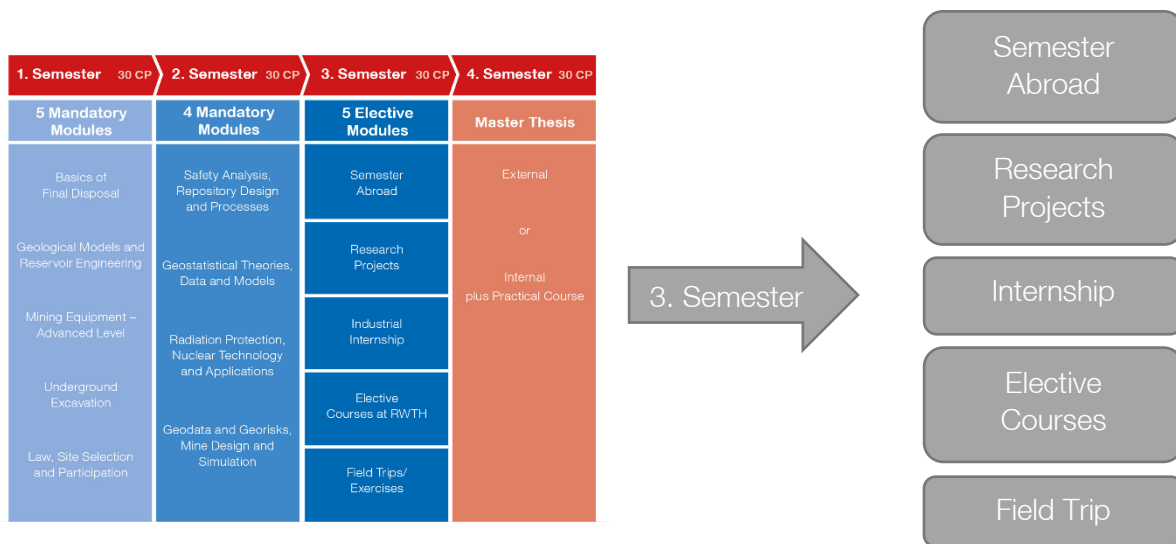


Figure 1: Elective Modules of the 3rd semester

From the five modules – Internship, Research Project, Field Trip, Elective Courses and Semester Abroad – you are allowed to create your own semester plan. You must decide for yourself, if you want to take further courses at the RWTH, write a research project, take part in a field trip or doing an internship. The important part is, that you follow your interests and acquire the necessary 30 CP at the end of the 3rd Semester. Planning your semester beforehand is essential for this, especially for the semester abroad. Furthermore, the combination of the different options and a plan B can be helpful. For example, an internship could be combined with a research project (with agreement of all parties involved), or you can do a research project in combination with a field trip and some elective courses to gain the needed 30 CP.

The CP numbers of the individual options represent the maximum amount that can be acquired. This does not mean, e.g., that 15 CP must be acquired in the elective courses. If the combination with other options allows it, perhaps only 10 CP or even only 4 CP needs to be acquired through elective courses.

If you are interested in a semester abroad, make sure to get informed quickly. The application deadline is about half a year – sometimes even one year – in advance. Thus, we advise you to start planning your semester abroad directly in the first semester (after reading this handbook).

Internship (max. 15 CP)

The internship in the third Semester will grant you 15 CP. It must include 40 working shifts and thus lasts about 2 months. The 15 CP are split into 10 CP for the internship itself and 5 CP for the theoretical part which is separated into a written assignment and a presentation (see figure below).

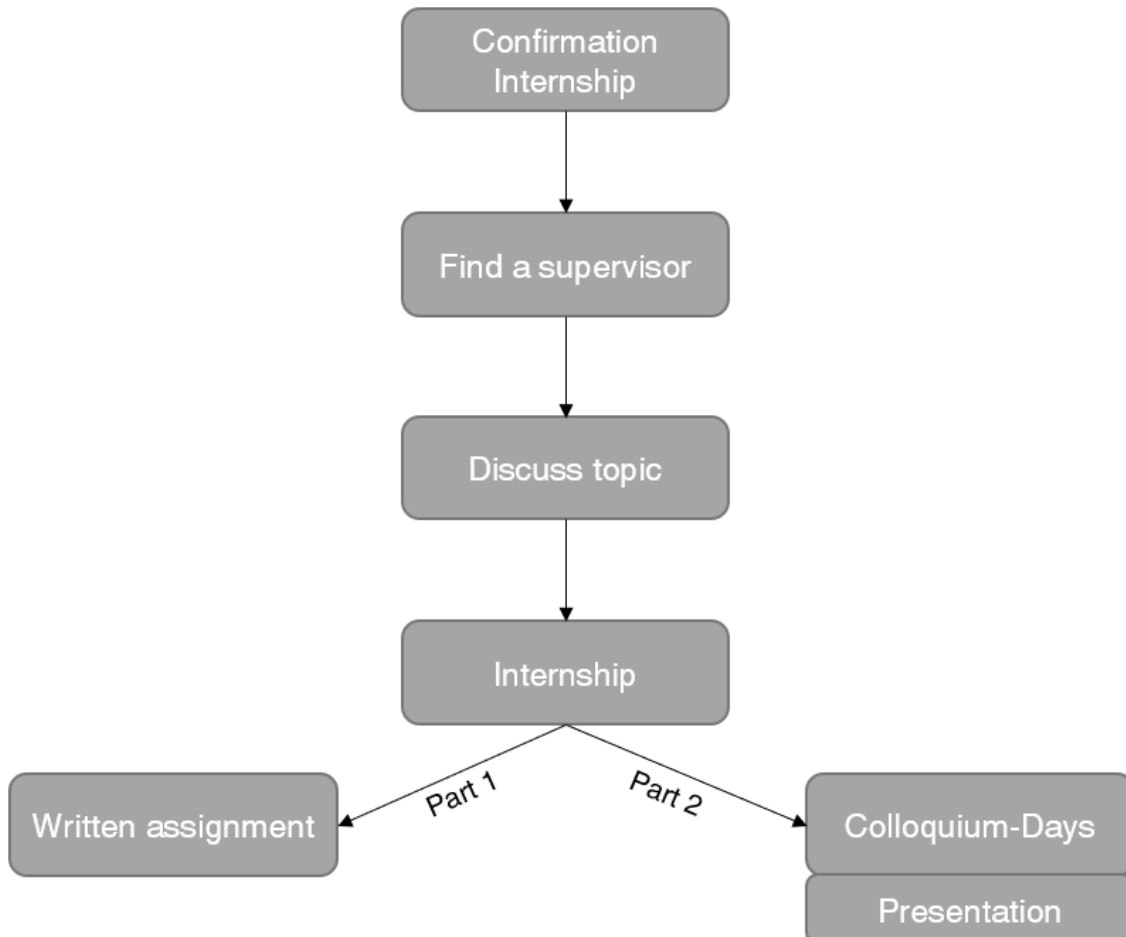


Figure 2: Steps to accomplish the internship

Confirmation Internship:

First, find an internship and receive a confirmation. Note that sometimes it takes time to find an internship. Therefore, make sure to start writing your applications early enough. You can also swing by the board room ("Fachschaftsraum") and ask the members of the board for information and tips.

Find a supervisor:

Once you received the confirmation for your internship you have to find a supervisor at the faculty by yourself. One way to contact the Research Assistants is via Mail. For this purpose, visit the website of your chosen department / institute where you can find the contact details of the Research Assistants. Otherwise, you can directly speak with them after lectures. Of course, you should pick an internship at an institute and Research Assistant covering your desired field of research.

Discuss the topic:

Together with your supervisor you will discuss your internship and possible topics for you to write about (please use the planning sheet in appendix 1). The paper should cover a topic from the internship that you find interesting e.g., a working method, a process, a project etc. It could be helpful to take notes (and photos if allowed) during the internship



Tip: Take some time for yourself before the first meeting and write down your questions and ideas.

Internship:

You start and complete your internship. As mentioned above, it could be helpful to take notes on your topic. After a few weeks into the internship, at the latest directly after the internship, the topic must be settled in agreement with the supervisor.

Written assignment:

Directly after you defined the topic with your supervisor you can start writing. **You have time until one month after the end of the internship to submit your paper to your supervisor.** The paper includes roughly 10 to 15 written pages (excluding cover page, table of contents or figures and appendix). By handing in the paper, the first theoretical part is accomplished.

Presentation:

In the second part, you have to give a presentation (approx. 10 min.) of your internship and your topic. The presentation will take place in course of the *Colloquium-Days* which will be held once a semester.

The paper and the presentation will be graded.



- Internship
 - 40 Work shifts
 - 10 CP
- Written assignment
 - Approx. 10 - 15 Pages
 - Submission of paper no later than one month after the end of the internship
- Presentation
 - Approx. 10 min

Research Project (max. 15 CP)

The research project is a great opportunity to take a closer look at a specific topic and to investigate it. In this module you can gain a maximum of 15 CP. It is possible to do more than one research project, but you cannot gain more than 15 CP. In the least favourable case, you will be credited with fewer CP than you have earned.

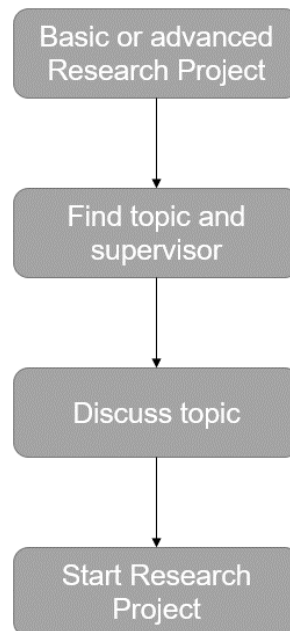


Figure 3: Steps to accomplish the Research Project

Advanced or basic Research Project:

If you decide you want to do a research project, you have two different options. The first one is an advanced research allowing to gain a maximum of 10 CP. It comprises a page count of 30 - 40 pages that must be finished within three months. The second option is a basic research consisting of about 20 pages for which you have 1,5 months time to write. With this you can gain 5 CP. Each of them includes an oral presentation about your research topic which will take place during the *Colloquium-Days*.

Find topic and supervisor:

The institutes of the *Division of Mineral Resources and Raw Materials Engineering* regularly offer research projects in their respective areas of research. These are advertised on the institute's or official RWTH website. The specific individual achievements in each research project are determined by the respective institute. Some institutes post topics by notice in the mining building ("Das Bergbaugebäude"), so make sure to keep your eyes open. Besides, you can always write an e-Mail to an institute and ask for open topics or think of a topic you want to write about by yourself and ask for a supervisor. You can find a supervisor the same way, it is explained in the chapter above for the internship.

Discuss the topic:

Together with your supervisor you will discuss your research project. Before the first meeting, take some time for yourself and write down your questions and ideas.



Tipp: It may also help you to use the planning sheet in the appendix 1.

The research project will be graded based on the written assignment and presentation.



- Advanced research project
 - 10 CP
 - 3 months
 - 30 - 40 pages
- Basic research project
 - 5 CP
 - 1,5 months
 - 20 pages
- Presentation
 - 15-20 min.

Field Trip (max. 5 CP)

The institutes of the *Division of Mineral Resources and Raw Materials Engineering* and the *Division of Earth Sciences and Geography* regularly offer field trips in their respective areas of research. These are advertised on the institute's website. The specific individual achievements in each excursion are determined by the respective institute.

The *Chair of Repository Safety (ELS)* will offer one field trip per year, giving you the chance to achieve 3 CP. The students who sign up for it will receive an individual topic in advance to research on. This topic will be related to the field trip. Use the field trip to ask questions and learn more about your topic. After the field trip, every student must present their topic. This will take place during the *Colloquium-Days*.

It is only possible to gain a maximum of 5 CP in this module. The participation in any field trip beyond 5 CP cannot be considered. The performance in field trips is graded according to their individual module description.

Upon successful completion, you will receive a so-called "Leistungsnachweis/LN" (proof of performance) which will be recorded at the central examination office (ZPA). The certificate (LN) can be passed directly to the ZPA by the lecturer, or you can submit the certificate in written form to the ZPA.



Tipp: A lot of excursions are taking place in the **summer semester** during the so called "Excursion week" over the Whitsun Days. Therefore, you can take place in the field trip one semester before or after the Mobility Window (reminder: summer semester 2nd, 4th etc; Mobility Window 3rd semester). Nevertheless, it is always possible for an excursion to take place at other dates and maybe even in the winter semester, but it is uncommon. In any case, be sure to stay informed.

Colloquium-Days

The Colloquium-Days will take place twice during the semester. In the course of these days, the students will present their results from different modules. This is mandatory for the modules: internship, research project and the field trip offered by the *Chair of Repository Safety*. Furthermore, the presentations are open to be attended by every interested student in the Division of Mineral Resources and Raw Materials Engineering.

Elective Modules at RWTH Aachen (max. 15 CP)

In the field of Elective Modules, you can choose from any course offered by RWTH Aachen University.

A selection of the following topics can be individually combined.

- Subjects from other divisions of the faculty of Georesources and Materials Engineering (Division of Materials Science and Engineering and Division of Earth Sciences and Geography) and other faculties of RWTH Aachen University (e.g., School of Business and Economics or Faculty of Mechanical Engineering), which end with a certificate on the individual achievements. These may be lectures with related exams, as well as projects (e.g., LEONARDO), labs, seminars or other formats (e.g. Soft Skill courses). In courses with admission restrictions, a possible participation must be agreed upon by the lecturer beforehand.
- Language courses of RWTH Aachen University Language Center (in total maximum of 5 CP can be credited)

The registration of courses in the field of elective modules usually takes place directly through the chair of the lecturer and RWTHonline. It is a good idea to write directly to the lecturer of your chosen course to make sure you are registered correctly. Sometimes it may also be necessary to contact the lecturer and ask for participation, when you are not able to register via RWTHonline.

In this case, you will need a so-called "Leistungsnachweis/LN" (proof of performance) which will be recorded at the central examination office (ZPA). The certificate (LN) can be passed directly to the ZPA by the lecturer, or you can submit the certificate in written form to the ZPA.

You can gain a maximum of 15 CP with elective modules.

Recommended Courses

The courses listed below are recommendations by the *Division of Mineral Resources and Raw Materials Engineering* to be taken as "Elective Courses at RWTH Aachen" (max. 15 CP) within the Mobility Window (3rd Semester – Winter Semester) of the specialization *Repository Safety* in the degree programme *Mineral Resources Engineering M.Sc.*

The list below contains only a selection of possible courses. Apart from these, all courses offered by the faculties of the RWTH Aachen may be chosen.

If possible, within your individual study plan, courses offered in the summer semester may also be chosen.

Course Name	Contact Hours (SWS)	CP	Language	Lecturer	Faculty
Projekt Leonardo	2	var.	var.	var.	-
Engineering Geophysics	2	3	EN	Niederleithinger	5

Course Name	Contact Hours (SWS)	CP	Language	Lecturer	Faculty
Geophysics II: Application of Geophysical Prospection Methods in Earth and Environmental Sciences	4	5	EN	Wagner	5
Numerical Reservoir Engineering: Geophysical Process Simulation	2	3	EN	Wellmann	5
Portfolio Management and Prospect Evaluation	2	3	EN	Kukla	5
Seminar Reading Club: Current topics in ethics of technology (Angewandte Ethik)	2	3	EN	Nagel	7
Vorlesung Introduction to Ethics (Angewandte Ethik)	2	3	EN	Nagel	7
Social Responsibility, Sustainability and Resilience	2	3	EN	Bosen	7
Machine Learning	4	5	EN	Leibe	1
Data Analysis in Geosciences	2	3	EN	Hendricks-Franssen	5
Grundlagen Georisiken in der Rohstoffgewinnung	2	3	DE	Preuße	5
Fördertechnik und Logistik	4	4	DE	Clausen	5
Grundlagen Geoinformation / Geodatenmanagement II	2	3	DE	Kateloë	5
Grundlagen des Stofftransports im Grundwasserraum	4	5	DE	Rüde	5
Georisiken 2 + Prognosemethoden	2	2	DE	Kateloë	5
Ablagerung von Abfällen	2	3	DE	Charlier/Hein	5
Rohstoff- u. Energierecht 3 (Genehmigungs- und Umweltrecht 2)	2	3	DE	Frenz	5
Rohstoff- u. Energierecht 4 (Genehmigungs- und Umweltrecht 3)	2	3	DE	Frenz	5
Arbeitssicherheit und Gesundheitsschutz 1	2	3	DE	Bauer	5



Course Name	Contact Hours (SWS)	CP	Language	Lecturer	Faculty
Arbeitssicherheit und Gesundheitsschutz 2	2	3	DE	Bauer	5
Maschinentechnische Planung von Betriebspunkten	2	3	DE	Mitra	5
Anlagenüberwachung und Instandhaltung	2	2	DE	van den Heuvel	5
Automatisierung und Digitalisierung im Bergbau	2	3	DE	Vraetz	5
Fernerkundung / Photogrammetrie	2	2	DE	Preuße	5
Geotechnik I	4	5	DE	Fuentes Gutierrez	3
Vorlesung Soziologie (Einführung in das soziologische Denken)	2	3	DE	Kron	7
Vorlesung Soziologie (Techniksoziologie)	2	3	DE	Häußling	7
Seminar Soziologie (Technik und soziale Kontrolle)	2	3	DE	Voigt	7
Klimatologie	4	5	DE	Leuchner	5
Usability, User Diversity und Technikakzeptanz	4	5	DE	Ziefle, Calero Valdez	7
Strömungs- und Transportmodellierung	2	3	DE	Hendricks-Franssen	5

Semester abroad (max. 30 CP)

In this chapter you will get a quick overview about a semester abroad. If you choose to do a semester abroad, you have to gain 30 CP in order to pass your 3rd semester in Repository Safety. Out of these 30 CP you can choose 15 CP freely, but the other 15 CP must fit the course of study. In all cases, your course selection must be first approved by the exam committee ("Prüfungsausschuss"). You have also the opportunity to achieve less than 30 CP abroad and select for the pending CP the modules: Internship; Field Trip; Research Project or Elective Courses at RWTH.

4 Reasons why you should do a semester abroad

1. Expand your horizon

- Gain new professional knowledge 
- Get out of your comfort zone and make new experiences 

2. Meet new People



- You will get in touch and have to work with people from different nationalities
- This is the best way to improve your communication and soft skills

3. Enhance your profile

- Having a semester abroad on your CV is always a big plus for further applications
- You will increase your job chances

4. Having a good time

- Besides studying, it is also fun to meet new people in a new place. Go out, explore a new city, find new friends, get to know another culture, and just have a good time!



Info: The application and planning of the semester abroad requires a lot of your own commitment and time. We are happy to help you with the planning. Make sure to have at least two appointments with the **Erasmus Coordinator*** of the Department. Check out this [website](#) for more information.

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The different programs

You may already have heard of the Erasmus+ program, but there are a couple more programs you can apply for. If you want more information or you don't know which one is the right one for you, make sure to speak with the Erasmus Coordinator* after reading this chapter.

The different programs for a semester abroad you can choose from are:


- Erasmus+ Student Exchange
- Erasmus+ Internship
- RWTHworldwide
- UNITECH International
- Freemover Outgoing

Erasmus+ Student Exchange

(Erasmus = European Community Action Scheme for the Mobility of University Students)

The Erasmus program is probably one of the best known in the EU. As the full name suggest, the Erasmus Program enables students in the EU to study at another University in the EU during their studies. The purpose is to support and qualify the students for their future careers in a Europe without borders. Depending on the cooperation contract of your faculty, you can spend one to two semesters of your studies abroad in the EU.

The Erasmus program offers you several advantages:

- 
- Your studies abroad will be recognized academically. That means you will not lose any time in your studies with respect to keeping the standard period of study.
 - You are exempt from tuition fees at the host university and can therefore save yourself partly high costs.
 - You will receive financial support for additional costs resulting from studying abroad. It is best to consult with the Erasmus Coordinator about your possibilities.
 - For your preparation you will also be supported by the Erasmus Coordinator. Do not forget to make an appointment!

How do I plan a semester abroad with Erasmus+ Student Exchange?

It is very important that you start planning as soon as possible once you decided to go for a semester abroad. We suggest up to 6 months ahead of the estimated departure. This is due to the application end at the 31. January each year (for outgoings in **the next** winter and summer semester).

For example: You are in the 1st semester and want to go abroad in the 3rd or 4th semester you have to hand in your application until the 31. January in your 1st semester (almost one year in advance).

A very important part of your application is the recognition of the courses you would like to attend at the host university. This can take some time, so make sure you do it early enough and talk to your student advisor and the Erasmus Coordinator.

What requirements do I have to meet?

To apply for a semester abroad you have to be a registered student at the RWTH University (visiting students excluded) with a grade point average, better or equal to 3.0.

The host university will also determine which language certificate you will need to study there. Most of the times English B1 is sufficient, but there are exceptions e.g., Paris requires French B1. If you do not own the needed certificate, you have to take a language test before departure in order to begin the semester at the host university. There is also the possibility of taking language courses at the RWTH language center (click [here](#) for the website). After your nomination for the semester abroad, you will have higher priority in signing in for a language course.

Besides, your time abroad must last at least two months and can last up to twelve months. This program is possible in each phase of the studies, no matter if bachelor, master or promotion.

How do I apply for Erasmus+ Student Exchange?

You can only apply for three partner universities of your choice. For each university of your choice, you need a motivation letter explaining your subject-related and external motivation. In addition, you need:

- CV in tabular form
- Certificate of progress in your studies (“Studienverlaufsbescheinigung”)
- Current grade record
- Language certificate
- Course selection (which needs to be recognised before by the exam committee)

FRE - Exchange opportunities

In the following table you see the universities collaborating with the FRE regarding student exchanges. For more detailed information make sure to check out the websites and to talk with the Erasmus Coordinator.

Country	University	Seats
Finland	Aalto University School of Engineering	2
France	Mines Paris Tech	2
Norway	NTNU Norwegian University of Science and Technology Trondheim	2
Austria	Montanuniversität Leoben	4
Austria	Technische Universität Wien	2
Poland	Akademia Gorniczo-Hutnicza, Krakau	3
Poland	Politechnika Wroslawska	5
Sweden	Luleå University of Technology	3
Slovakia	Technical University of Kosice	2
Spain	Universidad Politécnica de Madrid	2
Czech Republic	VSB-Technická Univerzita Ostrava	2
Turkey	Istanbul Teknik Universitesi	1

In addition to the universities above you can also visit the universities in cooperation with the GuG (*Division of Earth Science and Geography*) and MuW (*Materials Science and Material Engineering*). Check out the websites or the following links to get more information about the universities and contact persons: [GuG](#), [MuW](#)

Erasmus+ Internship

Besides doing a semester abroad you can also do an internship abroad. This way you gain practical insights in combination with getting to know another culture, working methods of the host country and practising the language. The internship must last at least for a period of 60 days

and be a mandatory part of the study program. If the internship is the practical part for a thesis, written at universities or companies in other European countries, it can be funded.



Info: Further information including the contact person for this program can be found [here](#).

What requirements do I have to meet?

For applying to the Erasmus+ Internship you need to be a registered student at the RWTH (German or international). Besides, you need a language certificate (B1 or higher) in the language used in the internship. It is also important that you are not getting any funding out of other EU-Programs.

How do I apply for Erasmus+ Internship?

You can hand in your application at the latest 6 weeks before the internship starts. Required documents for your application are:



- Learning agreement for traineeships
- Current score sheet
- Study certificate
- CV
- Proof of language
- Motivation letter

Please note, that you are responsible for sufficient insurance coverage, including health, accident and liability insurance, for your stay abroad.

RWTHworldwide

If you are interested in doing an internship outside of the EU, the RWTHworldwide program might be a good fit for you. Check the [website](#) to get in touch with the International Office to make an appointment and for information about the participating universities. The application procedure takes place twice a year, but you have to apply one year in advance. A selection committee consisting of rectorate representative, International Office, representatives from two faculties and the student council select the candidates. The final decision of admission is made in consultation with the partner university.

What requirements do I have to meet?

To be able to apply for this program you need to be a registered student at the RWTH. In your studies you need to have already gained 50% of the average CP per semester already and a language level of a minimum of B1 (of the spoken language).

How do I apply for RWTHworldwide?

As mentioned above, you need to hand in your application one year in advance. Required documents for your application are:



- Current score sheet
- CV in tabular form
- Language proof
- Documentation for volunteer work
- Planned course selection
- Letter of motivation (professional and extracurricular)

UNITECH International

UNITECH International is a network of eight European Universities and 17 industry partners. It supports highly qualified students with a program which is a combination of semester abroad and internship, coaching and workshops. The duration of this program is one year, and the start is in August. Besides, the program is free of charge and a part of the travel costs will be covered (1000 €). The application deadline is in November.



Info: For more information check out this [website](#).

Freemover

If you want to go abroad as freemover, you have to plan everything by yourself! This includes application, financing, accommodation and so on. If you are accepted, you can study at every university of your choice. The period of your time abroad can be chosen by yourself, but a leave of absence from your current study at the RWTH is required. However, freemovers can apply for scholarship programs of the RWTH or the DAAD.



You will find more information [here](#).

Appendix 1: Internship – Planning Sheet

Title of the paper in English
Title of the paper in German (if wanted by the supervisor)

Submitted by	on	
Name; First Name		
Student ID Number		
Deadline (One month after end of internship)		

Submitted on	
1. Examiner	
2. Examiner	
Supervisor	

Notes:

1. Appointment (before the internship)

- Where are you doing your work shifts (internship plan, if existing)?
- What do you expect from the internship?
- What are your possible tasks?
- Is there any topic or field you find interesting and are getting in touch with during the internship?
- What do you want to focus on?
- Take notes during your internship!
- Further points discussed with your supervisor:

2. Appointment (during or immediately after the internship)

- Are there any new insights on the questions above?
- Set your topic - Exposé checked by your supervisor
- Further points discussed with your supervisor:

Appendix 2: Imbedded Links

Description	Link
FRE Website: Studying Abroad	https://www.rohstoffe.rwth-aachen.de/cms/rohstoffe-und-entsorgungstechnik/Studium/Im-Studium/~rtd/Studieren-im-Ausland/?lidx=1
RWTH language center	https://www.sz.rwth-aachen.de/cms/~iilg/SZ/?lidx=1
GuG	https://www.fgeo.rwth-aachen.de/cms/geowissenschaften-und-geographie/Studium/Internationales/Outgoings/Auslandsstudium/ERASMUS/~hrpq/Partneruniversitaeten/?lidx=1
MuW	https://www.rwth-aachen.de/cms/root/studium/Im-Studium/Internationales/Outgoing/Studium-im-Ausland/Erasmus-/Austauschmoeglichkeiten-nach-Fakultaeten/~brso/Fakultaet-5-Materialwissenschaft-und-W/?lidx=1
Erasmus+ Contact	https://www.rwth-aachen.de/cms/root/Studium/Im-Studium/Internationales/Outgoing/Formen-des-Auslandsaufenthalts1/Studium-im-Ausland/Austauschprogramme-in-Europa/~bwyf/Erasmus-Praktikumsfoerderung/
RWTH International Office	https://www.rwth-aachen.de/cms/root/Die-RWTH/Einrichtungen/Verwaltung/Dezernate/~pvd/Internationale-Hochschulbeziehungen/?lidx=1
UNITECH	https://www.rwth-aachen.de/go/id/bwyz
Freemover	https://www.rwth-aachen.de/go/id/lssb

Thinking the Future
Zukunft denken



Where can I get more information?

About the study program and subject-specific details:

Master Program Mineral resources
engineering (M. Sc.):

Studienberatung-roi@rohstoffe.rwth-aachen.de
www.rohstoffe.rwth-aachen.de



From a Student perspective:

Student council of Division of Mineral
Resources and Raw Materials Engineering:

fs51@rwth-aachen.de
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About the supervising Chair:

ELS – Chair for Repository Safety

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General information about the specializations, program content, applications and enrollment:

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