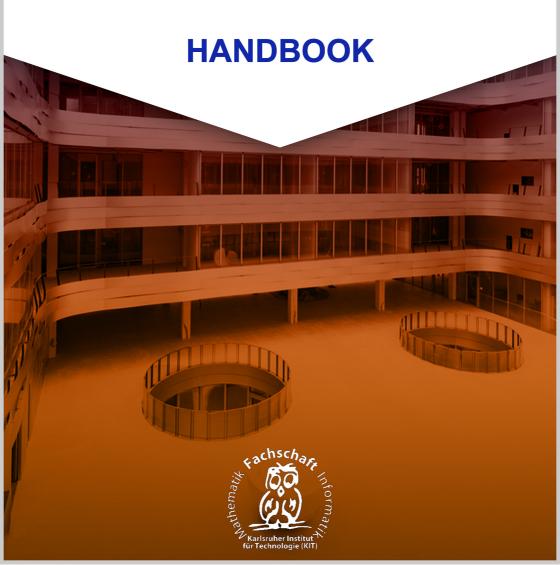
# IMAMA

**International Master of Mathematics** 



# **Preface**

Welcome to the Student Handbook for the International Master of Mathematics at the KIT! We, the 'Fachschaft', will give you information about the Master programme and the like to help you gain orientation at the beginning.

For more general information about studying at the KIT and living in Karlsruhe have a look at the 'Erasmus+ student handbook' offered by INTL, the international students office: www.intl.kit.edu/download/ERASMUS%20student% 20handbook.pdf

In case there are questions that this handbook cannot answer, you can contact us at any time (for contact details s. page 6).

We wish you a great start into the new semester and a wonderful time in Karlsruhe!

Yours,

Fachschaft Mathematics/Informatics Karlsruhe Institute of Technology

# **Impressum**

Erstsemesterinformation der Fachschaft Mathematik / Informatik zur kostenlosen Verteilung während der Master-Orientierungsphase.

Sämtliche Angaben sind gewissenhaft recherchiert, aber natürlich ohne Gewähr. Diese erste Ausgabe beruht auf Arbeit einiger motivierter Fachschaftler.

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# Welcome to the Fachschaft

The 'Fachschaft Mathematik/Informatik (FSMI)' gives you a warm welcome!

#### Who are we?

The Fachschaft (FS) is a representative student body of - in this case - all students of Mathematics and Informatics. We give advice to students concerning their studies, arrange fun events, sell old exams and protocols of previous oral exams, have 'FSler' (students in the Fachschaft) in committees and always offer you a cup of coffee (or tea).

We have two **rooms**, the Fachschaft Mathematik (FSM) in the maths building and the Fachschaft Informatik (FSI) in the informatics building.

- 1. Need help? You can visit or contact us with any question may it be about your studies, exams or other we will do our best to help you. If we cannot answer your question directly, we probably know where to send you to. You can come to both the Fachschaft Mathe and Fachschaft Info; contact details are at the end.
- **2.** Who is in the Fachschaft? Who are the members of the Fachschaft? We are a mixed group of maths and informatics students who have fun being involved in university topics, all contributing in

their own way. We work on a voluntary basis, so we don't get any money. We also still do study; the Fachschaft is a cool activity alongside studying.

3. Want to join? Sure you can. Generally you decide how and how much you contribute. Some Fachschaftler invest quite a lot of time, but of course you don't have to embark fully right away. Editing an exam to make it ready for printing or giving a weekly consultation hour is a great help, too, and it is what most newcomers begin with. Coming back to the question 'Who are we?' there is an easy answer:

Fachschaft - that is you, too.

Every student studying Maths or Informatics is part of the Fachschaft and by that we are happy to welcome you as a member from now on!

www.fsmi.uni-karlsruhe.de

We have **several mailing** lists for news ('News@'), events, jobs and internships ('jobs-praktika@') and so on. We do send quite some information via those lists. You can register at:

# www.fsmi.uni-karlsruhe.de/ Kontakt/Mailinglisten/

We have a mailing list especially for International Students. Via international-events@fsmi.uni-karlsruhe.de you can recieve information concerning events especially for you! If you have problems signing up for the mailing lists on the above mentioned German website, please don't hesitate to contact us. For any advice or problems you may contact international@fsmi.uni-karlsruhe.de.

You can also follow us on Facebook (facebook.com/fsmi.kit) and Twitter (twitter.com/fsmikit).

#### What do we do?

We offer **consultation hours** in most time slots of the week regularly during the semester. We sell **old exams** and **protocols** of oral exams and consult students. Protocols of oral exams are notes from students who have previously taken an oral exam and wrote down questions and topics the examiner asked about. We maintain a constantly growing database of those protocols and old exams for almost every subject. Feel free to visit us around exam time to get the best preparation for your exams.

An overview of the filled time slots of consultation hours is on our homepage, although there are people in both Fachschaft Mathematik and Fachschaft Informatik most of the time. During consultation hours fellow students of the

Fachschaft are sitting in the Fachschaft rooms, ready to assist you with any kind of questions or to just chat and drink a coffee with you.

To encourage bonding with us and other students, we offer two **breakfasts** in both the Fachschaft Mathematik and Fachschaft Informatik on different days of the week. Stop by - grab a bread roll and a cup of coffee for free - it's great for getting to know people!

Every Wednesday we have the FSR ('Fachschaftsrat'), which is the decision-making organ of the Fachschaft and a meeting to which everyone including guests are invited. Students report from their committees, we discuss current problems, plan events and discuss other matters concerning the university policy, study programmes, the Fachschaft and other things that come up.

If you want to get to know what is currently happening in faculty and Fachschaft stop by! Protocols of our meetings are on our homepage (Fachschaft/Sitzungen). An invitation mail with all topics for the upcoming FSR is sent via the mailing list alle@fsmi.uni-karlsruhe.de on Tuesdays. If you are interested to see what we are currently discussing, feel free to join the mailing list on our website as well.

Another Fachschaft meeting is the plenary assembly ('Vollversammlung', VV) that takes place once per Semester. In the plenary assembly of the spring semester the budget for the next year is resolved and a detailed report about

the last semester is given. We also discuss rather fundamental topics such as changing Fachschaft regulations. We will invite you via email and announcements on our notice boards.

We also send students to other **committees**, such as the FSK ('Fachschaftenkonferenz') - the conference for all representative student bodies (Fachschaften) where common decisions are made. Two big **external conferences** that we sometime send Fachschaftler to are the KIF ('Konferenz aller Informatikfachschaften' - the conference of all informatics student bodies) and KoMa ('Konferenz aller Mathematikfachschaften' - conference of all mathematics student bodies).

For all **big and small events** organised by the Fachschaft, the faculty and the AStA, go to 'General Information/Events'.

# What do we offer?

We offer **insights** into university work, the chance to change things and freedom in what you do, a great community and the prospect to gain valuable experiences and competences.

There are a lot of **interesting projects** in the Fachschaft. You can start small projects (like this booklet) or be sent to conferences (see above).

As part of the Fachschaft you could offer some opinions about the matters we treat and events we arrange. Sitting in committees you can even take part in matters of the faculty such as discussing structural issues or hiring new professors.

We want to give our students a good time during their studies and offer you a **nice environment** to getting involved - and you are really most welcome to! So if you are interested or simply want to get to know us a little better just come to one of our events or contact us via one of the below listed ways. We are looking forward to seeing you and give you again a warm welcome to Karlsruhe!

#### Contact details

If you want to ask questions, have a problem, want to buy old exams or protocols or simply want to stop by, you can come to our rooms, send us an email or call us:

Fachschaft Mathematik building 20.30, room 0.002 mathe@fsmi.uni-karlsruhe.de telephone: (0721) 608-42664

Fachschaft Informatik building 50.34, room -124 info@fsmi.uni-karlsruhe.de telephone: (0721) 608-43974

Homepage www.fsmi.uni-karlsruhe.de

You can check on our website ('Sprechstunden') at what times we are there for certain. At other times there is probably someone there and you can give us a quick call to ask if someone is around. For international students we have the following email address for consultation: international@fsmi.uni-karlsruhe.de. But feel free to also use the contact addresses below.

mathe-pruefungsausschuss-wima@fsmi.uni-karlsruhe.de

#### Our email addresses

For almost all questions you can send an email to:

mathe@fsmi.uni-karlsruhe.de
info@fsmi.uni-karlsruhe.de

For more specific questions about your studies you can ask the group of students that sits in the examination board of the faculties:

Bachelor Informatics examination board:

info-bpa@fsmi.uni-karlsruhe.de

Master Informatics examination board:

info-mpa@fsmi.uni-karlsruhe.de

Mathematics examination board:

mathe-pruefungsausschuss@fsmi.
uni-karlsruhe.de

Mathematics in Economics examination board:

# General Information

U-Account and KIT-Card Once you register at the International office your university account (u-Account) and preliminary password will be delivered to your house by post. You can collect your KIT-Card (student card) at the students office. For further questions about that ask the international students office (INTL) You can use your u-Account to log in to the student portal, where you find all important documents and transcripts, and the ILIAS system where lecture materials are provided. Your u-Account is equipped with a wide range of other rights, such as VPN authorization (see 'Wifi'), printer access, etc. To print you have to go to the COPS services and log in to the SCC (Steinbuch Centre of Computing, see 'SCC').

INTL:

www.intl.kit.edu/ia/isto.php Student Portal:

 $\begin{array}{c} \texttt{campus.studium.kit.edu} \\ VPN \end{array}$ 

With the KIT-Card you can pay in canteens, top up your printing credit at the SCC and get into the main library and a few other buildings in the middle of the night.

Note: You should always take your KIT-Card and an official ID card with you to exams!

Wifi and VPN With your u-Account

you can log in into Wifi. The password is the same, simply add '@kit.edu' to your user name. There are 'KA-WLAN' and 'KA-sWLAN' for choice that are public city wifis. 'KIT' is university intern. 'Eduroam' is offered by the KIT. Soon all networks will be available both in town and on campus. Exchange students from other universities can use Eduroam as well.

The SCC offers a VPN service to connect with the KIT intranet from anywhere. This is necessary to access certain resources such as textbooks that are available via the KIT intranet or the printing service (see 'SCC/COPS').

Wifi:

www.scc.kit.edu/dienste/wlan.php VPN:

www.scc.kit.edu/dienste/vpn.php

SCC (Steinbuch Centre of Computing) The SCC is the centre of computing at the KIT that offers many practical services for students such as printing, computer pools, a software shop, email and a VPN connection to the KIT intranet.

www.scc.kit.edu/

**COPS** is the SCC's printing service where you can print for little money. Your u-Account serves as a printing account. You can load your credit with your KIT-Card at one of the machines in

the SCC centre. To print, you can use an SCC pool computer, your own computer or you can use the web-based COPS service. In either case, you have to be connected to the KIT network either directly or via VPN. You can collect your documents in the basement of the SCC.

www.scc.kit.edu/dienste/cops.php

Computers are in the pool rooms of the SCC and for free use. Your u-Account data is the same as for the KIT intranet (see 'U-Account'). You can use them for studying when the library is too full; usually there is space. In the basement of the informatics building ATIS (see 'ATIS') offers another pool room. Having logged in to the pool computers you can print directly.

The **software shop** of the SCC offers students scientific software mostly for free. Included are among others SPSS, MATLAB and Mathcad as well as most Microsoft products. The few you have to pay for are usually offered with great discount.

www.scc.kit.edu/dienste/4786.php

Libraries There are several libraries: First the main library next to the cafeteria that is open 24/7 and mostly overcrowded during exam periods. Secondly there are smaller specialised libraries of individual faculties. With the seatfinder you can check for free space. The main library offers a printing service as well.

Main library:

www.bibliothek.kit.edu Seatfinder:

www.bibliothek.kit.edu/cms/
freie-lernplaetze.php
Informatics library:

www.informatik.kit.edu/2236.php Mathematics library:

www.math.kit.edu/bibliothek/

To activate your **library account** go to www.bibliothek.kit.edu and register with the long number on your KIT-Card (the one that is not your matriculation number) as account number ('Kontonummer'). You can use your KIT-Card to borrow books, get into the main library after 7 pm on weekdays as well as on weekends and holidays.

The snack machines in the library can be paid at with your KIT-Card; for snacks as well as paying late fines for books.

Lockers can be found in the basement of the main library. You can rent them with your KIT-Card free of charge for a maximum of 24 hours (after that fees will be charged). For more information see

www.fsmi.uni-karlsruhe.de/
Angebote/Schliessfaecher/

KIT Websites The three most important websites for you are: The student portal ('Campus system'), where you find all certificates, transcripts, etc. Here you can also apply for exams. At ILIAS you can find material to the lectures and ask questions in forums. Thirdly, the websites of the lectures themselves often contain a lot of materials such as

exercise sheets and solutions, slides, lecture notes and important information.

Student Portal:
campus.studium.kit.edu
ILIAS:
ilias.studium.kit.edu

Students Office At the students office ('Studierendenbüro') you can ask anything concerning academic affairs in general (for more subject-specific information please contact your study counsellor). The students office is responsible for enrolment, re-registration, de-registration, change of study programme, second degrees, semesters on leave ('Urlaubssemester'), study certificates, exam application and admission, administration of credits and exams, transcripts, reports and a lot more. Here you can also hand in certificates for key qualifications (SQL, 'Schlüsselqualifikationsleistungen'). They have a welcome desk as well as service times with counsellors for the intdividual study programmes.

www.sle.kit.edu/index.php

International Students Office (IStO) The International Students Office advises students who want to go abroad as well as foreign students who study at the KIT. You can also get information about scholarships and internships abroad.

www.intl.kit.edu/ia/isto.php

**KVV Ticket** As a student of the KIT you can take public transportation for free during weekdays from 6 pm to 5 am and

on weekends and holidays all day in the whole KVV ('Karlsruher Verkehrsverbund') region. You can download the certificate at the student portal (see 'KIT Websites'). A full semester ticket costs 155 Euro, is valid for 6 month and available at the KVV homepage (www.kvv.de/) and any KVV office. With this semester card you can take all regional trains (S-Bahn, RE, RB, tram, IRE) and busses in the KVV region.

Moving to Karlsruhe you have to add Karlsruhe to list of residences ('Meldepflicht', obligation to report). If you move your first residence to Karlsruhe you will be given a starter present that includes a voucher for a full KVV ticket for 6 month. You can redeem it whenever you want.

**Events** There are several events by the KIT, the faculty and the Fachschaft that are arranged regularly. The most important ones are the following:

A rather important first task is to have a great **O-Phase** (introduction days)! As you know in winter semester, this includes a whole week of great activities whereas the summer O-Phase for master students is a little shorter. The introduction days are a good way to get into university and meet fellow students and usually takes place the week before semester starts. A great party during the winter O-Phase is the **O-Phest**, for which we usually pair up with other Fachschaften.

o-phase.com/

Around January each year we have the 'Eulenfest' ('Eule' = owl, see our logo) - the Fachschaft party highlight each winter semester. It is organised by firstyear students with some Fachschaftler as background help. You, too, can get involved!

The Maths and Informatics faculties organise **faculty parties** in cooperation with us. The mathematicians usually have a football tournament and university employees as well as students play some music.

At the beginning of each semester there is the SAT ('Semesterauftakttreffen') and International Gathering. The first is for getting to know the Fachschaft a little better and presenting the plans for the next semester. And if you want you can get a small Fachschaft task to do over the semester. The International Gathering is especially for all our international students who want to get to know us and each other.

There are **smaller events** during the semester such as film nights, paintball, a paragliding week, singing christmas songs, guided tours of research institutes and skat tournaments.

For our international students we especially recommend our **international events** that take place about once a month and have so far included a trip to the thermal bath, ice skating, a games night and a trip to the trampoline hall nearby. They are mostly organised by international Fachschaftler.

The Unifest (university party) is the largest student organized festival in the region. It takes place almost every year in summer on the campus of KIT. The Unifest is organized by the AStA ('AStA' s. below) Festival Committee - for students by students. In addition to numerous bands and DJs playing on various stages and floors, a variety of attractions such as slacklining, juggling, theater, podium discussions and more will be offered.

#### www.unifest-karlsruhe.de/

Mensa The mensa is next to the main library and includes the cafeteria (you can pay with your KIT-Card), the BAföG office, the student services ('Studierendenwerk') and a place where you can buy lecture notes ('Skriptenverkauf'). The cafeteria serves food weekdays from 11 am to 2 pm (it is usually full around 1 pm) and supper from Monday to Friday between 4 pm and 7:30 pm during lecture period. Due to renovations some services such as the AStA (see 'AStA') and the Skriptenverkauf are located elsewhere at the moment.

#### www.sw-ka.de/essen

AKK Café AKK ('Arbeitskreis Kultur und Kommunikation') is a cultural centre run by a student group. It includes the AKK Café at the old stadium ('Altes Stadion') in the middle of the campus near the mensa, where you can buy good beer, coffee, tea and cold drinks for a rather low price. They also arrange 'Schlonze'; relaxed theme nights with music, small tournaments, poetry

slams, concerts and more. They even have a workshop and a foto lab and regularly offer dance classes.

#### www.akk.org

Career Service The Career Service of the KIT aims to be a link between students and economy. As an example it offers help concerning the search for internships or a job. The Career Service also arranges the career fair 'KIT-Karrieremesse' (www.karrieremesse.kit.edu/).

# $\label{eq:www.irm.kit.edu/careerservice.} \\ php$

**AStA** The **AStA** ('Allgemeiner Studierendenausschuss') is the dependent student committee operates as the executive of the whole student body. Its members are elected by the student parliament; they also represent the students politically. The AStA organises the Unifest (see 'Events') and keeps in touch with other AstAs. Furthermore they offer services such as van rental and a print shop and sell international student cards. At the moment the AStA resides in a container opposite the mensa (see 'Mensa') due to renovations there.

#### www.asta-kit.de

ATIS ATIS ('Abteilung Technische Infrastruktur') is the department for technical infrastructure and offers students a computer pool with about 100 work places similar to those in the SCC. You will find it in the basement of the informatics building.

#### www.atis.informatik.kit.edu

**Z10** The Z10 is a self-organised student centre that owns a café and pub (Zähringerstraße 10). You can have a drink for very little money, rent rooms or take part in cultural events.

#### www.z10.info

**Psychotherapeutical Counselling Centre (PBS)** PBS is the free psychotherapeutical counselling centre for students by the student services ('Studierendenwerk'):

www.sw-ka.de/de/beratung/
 psychologisch/
 psychotherapeutische\_
beratungsstelle\_karlsruhe/

You can arrange an appointment via telephoe or personally, contact details are on their website. PBS also offers counselling for groups. In addition you can lend books from their book list:

**Pregnancy and Studying** Are you pregnant or nursing? Then there are certain protections and benefits in place which allow you to prolong your studies for a certain time or have exams and other test performances rearranged. Please ask your student body for advice.

Pregnancy and Studying: www.sle.kit.edu/imstudium/ schwanger-im-studium.php Familienportal:

**Disability and Studying** If you have chronic diseases or diabilities, you might be eligible for assistance (e.g. for blind people) and modifications of how exams are conducted.

Disability and Studying:

www.studiumundbehinderung.kit.

edu

Nachteilsausgleich:

# **Study Information**

These are some general information about your studies.

Since you will probably encounter some German terms that are difficult to translate into English we will explain them to you here.

Also we will will give you an understanding of how lectures, 'Übungen' and tutorials work together, including exams, 'Scheine' and seminars.

**Lectures** As a master student you are probably familiar with the concept of lectures. A professor stands in front of a blackboard and presents topics. These events are hardly interactive, although you are always welcome to ask questions!

Übungen 'Übung' translates to excercise. 'Übungen' are not mandatory, but are offered additionally. Here exercises to the respective lecture are presented by a 'trainer' ('Übungsleiter': staff in the team of the professor and sometimes the person who corrects your exercise sheets, if there are no tutorials). The difference to lectures is that an 'Übung' is more interactive, so that you can ask even more questions. Be aware that it is possible that things from the 'Übungen' can appear in exams!

(Please note that in the official prospectus, 'Übungen' for English lectures at the maths faculty are called 'tutorial'. This is not to be confused with actual 'Tutorien', which we call 'tutorials' in this handbook.)

**Tutorial** Tutorials are smaller groups usually held by senior students called tutors. They are the perfect place to ask everything that is unclear to you. In tutorials mostly exercise sheets are gone through and a big focus is laid on helping students and making sure they understand the contents. Usually the tutors correct your exercise sheets. For some lectures there are offered tutorials, for some 'Übungen', for some both and for some none.

Scheine There are two types of certificates ('Scheine'): For some lectures, certificates are required to being able to take part in the exam. This mostly holds for basic lectures. Secondly, a certificate is a general confirmation of participation in course, seminar, internship or other. Generally you can get such a certificate for every one of these including lectures and courses not included in your study plan. Certificates of language courses and such have to be given to the students office in the original to enter your SQL credits.

Exercise Sheets (Übungsblätter) For most courses the exercise sheets are voluntarily offered, only the base lectures have mandatory 'Scheine'. These exercise sheets are way more difficult than the exercises in the exam. You can do them and hand them to your tutor or trainer ('Übungsleiter') for correction. Often people don't, so no worries about giving your tutor a little extra work.

Exams (Klausuren) There are oral and written exams; master courses usually have oral ones. For written exams you have to register, sometimes up to a month in advance. For oral exams you go to your lecturer and agree on a date together. The times can vary quite a bit, depending on when the lecturer is free. Sometimes you can also examine two lectures in one oral exam. Written exams take one to two hours, oral ones 20 minutes to an hour.

Written exams are often offered every semester, usually with a main exam and a retake in the next semester. In case there two exams in one semester you do not have to take part in the main exam directly, but can go for the retake exam instead. Some exams require a certificate (see 'Schein') for participation. Mor details are given on the course websites.

Retake Exam (Wiederholungsprüfung) Having failed a written exam you are allowed to take it again once. The grade of the retake exam will then be entered into your transcript. If you fail the retake, too, then there is an oral exam giving you at most a 'pass' (4.0). If you fail

that one, too, then you loose your right to examination.

You can request a hardship case ('Härte-fallantrag', see below), which sometimes gets granted. It implies that you have another try for your exam including a third (and even fourth) written exam and a following second oral exam. If you fail both or if the hardship case does not get granted you generally do not have further chances any more. In any case come to the Fachschaft and let us give you advice. As an informatics student once you have taken an exam and failed you have to retake it; as a maths student you don't need to.

Seminar A seminar is a series of presentations that are held by students and sometimes include a written documentation. At a preliminary meeting before the semester (often at the end of the last) every participant gets a topic that he or she has to work on and present at a given date. There are 'Proseminars' (easier seminars), too, they are however for bachelor students only.

Seminars are not offered regularly and their topics differ from semester to semester. You can check on the offer in the prospectus ('Vorlesungsverzeichnis'), on postings in the maths buildings and on the faculty's website. Sometimes seminars are graded, depending on the subject area and supervisor. In contrast to lectures there is compulsory attendance and the number of participants is limited. If you are interested even though the course is already full do

go to the first meeting, often places become available afterwards. Registration differs (email, entering your name on a list, registration on the faculty's homepage, attendance of preliminary meeting). Important is that you apply before the start of the semester! Often application happens at the end of the last semester, which is why it is important to check the information on the respective postings and homepages.

Work Internship (Berufspraktikum) In the master of mathematics in technology you have to complete a work placement ('Berufspraktikum'), an internship in a company. The company as well as a supervisor from university have to be found by yourself. The internship itself has to take at least eight weeks.

Modules One module contains several classes, most oftenly lectures, 'Übungen' or internships. Some are mandatory, others voluntary. All modules are listed in the module handbook ('Modulhandbuch') including a short description, workload estimation (credits), educational objective and type of success monitoring (e.g. exam).

SQL In most programmes you have to do a few credits of key qualifications ('Schlüsselqualifikationsleistungen', SQL): In the master of mathematics 6, in the technology master 2 and in the master with focus on economy none. You can gain them through language courses at the language centre ('Sprachenzentrum', SPZ), seminars at the centre of cultural and general stud-

ies ('Zentrum für Angewandte Kulturwissenschaften', ZAK) and workshops at the house of competence (HoC). Joining an orchestra also counts as a key qualification. All of these courses give usually 2, sometimes 3 or 4 credit points. You have to give the certificate to the students office to enter the points into your transcript. Application is in the week before the semester via the respective homepages.

Maximal Study Duration The maximal duration of the master programmes is 7 semesters. If you still need longer you can apply for a hardship case. If this request is not approved you lose your right of examination. In any case come to the Fachschaft early enough so that we can give you advice!

ECTS Points (Leistungspunkte, LP) ECTS points (translated to 'European Credit Transfer and Accumulation System') give you a rough estimate of how much work should be put into the module or lecture in general. One credit point stands for 30 hours of work (6 credits amount to 180 hours); included is the attendance of lectures, exercise sessions ('Übung'), tutorials, working on exercise sheets, pre and post preparation of lectures and learning for the exam.

ECTS points also serve as a mean of comparison for the recognition of courses that you attend at other universities or abroad. For a stay abroad it is still important to fill out a learning agreement which lists and approves all courses you intend to visit.

**Re-Registration** (Rückmeldung) Towards the end of each semester you have to re-register via transferring the current amount of €153.69 to the KIT bank account - more details on that are given in the campus system (campus.studium.kit.edu, 'Rückmeldung'). The amount splits into €77.70 for the student services ('Studierendenwerk'), €70 are administrative costs and €5.99 go to the representative student bodies ('Verfasste Studierendenschaft', says 'AStA' and all 'Fachschaften'). The deadline is on February 15th and August 15th each year.

Examination Right and Hardship Case Through your enrolment you gain the right to examination, by failing exams repeatedly you can loose it again (see 'Exams' above). The right to examination only holds for those exams that are necessary for your studies (including supplementary subjects ('Ergänzungsfach')).

If you have lost your examination right of a subject you are not allowed to study this subject at any other German university any more. If you request a hardship case you do not have the right that it gets granted. In any case come to us, the Fachschaft, or go to your study counsellor in advance.

**Study Plans** In the following chapter you will be given some information about your programme plan. As a maths master student you do not have too many restraints (constraints?) on your course choice, not to speak of a real

study plan<sup>1</sup>

CAS System The CAS system is the new campus management system that covers all administrative processes and can be accessed by students via the student portal. It includes certificates of all kind, transcripts, exam registration, reregistration and much more.

<sup>&</sup>lt;sup>1</sup>There is an official study plan ('Studienplan') which basically outlines the structure of your studies and lists the introductory courses for each of the four mathematical fields. Since only a limited number of courses are offered in English each semester, the official study plan might not be of much use to you. Furthermore, it is only available in German.

# **Master Programme at KIT**

There are three master programmes: Master of Mathematics, Mathematics in Economics and Mathematics in Technology.

A master programme involves 120 credits (LP), usually taking a total of 4 semesters ('Regelstudienzeit'); the maximal study duration is 7 semesters.

The programme culminates in a master's thesis that encompasses 30 LP and takes about 6 month. You can apply as soon as you have a total of 70 credits.

There are no mandatory modules, however there are some rules that you should keep in mind when planning your schedule.

For more detailed information look at the slides of the FBI (study programme information) at our homepage. • Stochastics/statistics/financial mathematics

that you can choose your two main subjects ('Mathematische Methoden 1' and 'Mathematische Methoden 2') from. In one of your main subjects, you have to gain at least 24 credit points, in the other one, you have to gain at least 16 credit points. One of the two main subjects shall either be 'Algebra/Geometry' or 'Analysis and differential equations'. Neither of the main subjects can include a seminar. All the introductory courses are offered in English every two years.

You have to take 14-22 credits in further math courses ('Mathematische Vertiefung') including at most one ungraded seminar. Here, you can freely combine courses from all four mathematical fields.

# **Master of Mathematics**

# Main Subject

There are the four mathematical areas

- Analysis and differential equations
- Algebra/Geometry
- Numerical analysis/scientific computing

# Supplementary Subject

Furthermore, courses encompassing between 16 and 24 LP should be taken in the 'supplementary subject' ('Ergänzungsfach'). This subject can either be one of the mathematical areas above that you have not chosen yet, or one of the following subjects offered by other faculties

- Computer Science
- Physics
- Economics
- Mechanical Engineering
- Electrical Enginieering

Please consider that not all of these subjects provide programmes in English. Courses that are not offered by the maths faculty have to be approved individually by your study counsellor.

Your supplementary subject and the additional math courses have to add up to 38 credits.

## **Further requirements**

Two mathematical seminars (each of 3 LP) have to be completed as well as 6 credit points of key qualifications (SQL, s. 'Study information'). Courses, seminars and SQLs have to add up to a total of 90 credit points.

# Internship

It is possible to do an internship that counts 8 credit points given the student writes a report and holds a short presentation at the end. The internship counts as additional qualification which means the 8 points go on an extra account ('Zusatzkonto') and do not count into the 120 credits that you need for your master's degree!

**Sum**: 120 LP = 54-62 (main subject) + 16-24 (secondary subject) + 6 (2 seminars) + 6 (SQLs) + 30 (master's thesis) (+ 8 (voluntary internship)).

# **Master of Technology Master**

#### Mathematical subjects

43 credits should be obtained composed of 24 credit points in 'Applied Mathematics' and 19 credit points in a 'Mathematical in-depth subject'. In 'Applied Mathematics' the module 'Finite Element Methods' needs to be included and 8 credits should be Analysis courses. The remaining modules can be chosen freely among all mathematical modules. In the 'in-depth subject' one mathematical seminar should be included; the remaining 16 points are of free choice.

# **Technical Subject/ Computer Science**

A total of 35 credits should be chosen from a technical subject (18 LP) and computer science (9 LP). The technical subject has to be one of the following:

- Constructional Engineering
- Chemistry
- Chemical and process engineering
- Electrical engineering/ Information technology
- Experimental physics
- Mechanical engineering
- Mechatronics and information technology
- Materials sciences

All courses in non mathematical subjects have to be approved individually by your study counsellor.

#### **Technomathematical Seminar**

In addition to the mathematical seminar (contained in the in-depth subject) an additional seminar is required. It can be mathematical, belong to the technological subject or the computer sciences.

## Internship

During the master programme an internship of at least 8 weeks is required, inculding a report of about 10 to 20 pages. The internship accounts for 10 credit points and should be accomplished in an area that 'gives the student insight in the connections between mathematics and technology'. You have to find your internship and a supervisor independently. Since most companies need some time to hand out internships we recommend looking for one as early as possible. The respective coordinator is Mr Grensing.

# **Key Qualifications**

There are 2 credits of key qualifications (SQLs) that should be obtained (see 'Study information').

**Sum**: 120 LP = 24 (main subject) + 18-27 (secondary subject) + 8-17 (informatics) + 19 (elective subject) + 10 (internship) + 2 (SQLs) + 30 (master's thesis).

#### Mathematics in Economics

### **Mathematical Subject**

Your maths courses have to amount to 36 credit points in total with 8 LP in Stochastics and 8 in Analysis or Applied and Numerical Mathematics/ Optimisation. The remaining 20 are of free choice.

## **Economical subjects**

18 credit points each are required from:

- Finance/ Risk Management/ Managerial Economics
- Operations Management/ Data Analysis/ Informatics

Modules out of both areas have to be approved by your study counsellor.

#### **Seminars**

One seminar in mathematics and one in economics is required (each giving 3 LP).

#### **Elective Courses**

You can fill 12 credits with courses from both the mathematical and economical area, including at most one economical seminar. (Of course you can do more seminars, however they are not going to be added to your credits.) **Sum**: 120 LP = 36 (maths) + 36 (economics) + 12 (elective courses) + 6 (2 seminars) + 30 (master's thesis)

# **English Courses**

There is a designated section for courses of the international programme in the prospectus ('Vorlesungsverzeichnis') of the KIT (see 'KIT-Fakultät für Mathematik/Veranstaltungen im Rahmen des Internationalen Programms'):

campus.studium.kit.edu/events/
catalog.php#!campus/all/fields.
asp?group=Vorlesungsverzeichnis

The international maths homepage offers a list of courses with short descriptions: www.math.kit.edu/lehre/ page/classes/en

For English courses of other faculties you can also look in the prospectus or ask the Fachschaften for help. There are a few other international master programmes at the KIT that might have an list of their English courses. For Informatics courses see http://www.informatik.kit.edu/6911.php.

# **Study counsellors**

#### **Mathematics**

Prof. Enrico Leuzinger building 20.30, room 1.013 enrico.leuzinger@kit.edu telephone: (0721) 608-42058

## Mathematics in Technology

Prof. Tobias Jahnke building 20.30, room 3.042 tobias.jahnke@kit.edu telephone: (0721) 608-47982

#### **Mathematics in Economics**

Dr. Bernhard Klar building 20.30, room 2.052 bernhard.klar@kit.edu telephone: (0721) 608-42047

All of these people can help you with questions about the module handbook, requests such as hardship cases, credit recognition (Erasmus), etc.

# **Coordinator Internship**

Dr. Sebastian Grensing building 20.30, room 1.004 grensing@kit.edu telephone: (0721) 608-41938

# Students office (Studierendenservice)

To the students office you can go with any question. May it be about enrolment or de-registration, about supplementary subjects, applications for exams of other factulties, leave of absence, or other.

# Further information at

www.math.kit.edu/lehre/page/
 studinternational/

	Mathematics	Mathematics	Mathematics
		in Technology	in Economics
Maths	1. subject: 24 LP	40 LP, of which	36 LP, of which
	2. subject: 16 LP	8 out of Analysis	8 out of Stochastik
	+ 14-22 further LP	8 LP Fin. Element	8 out of Applied /
		Methods	Numerical Mathematics
			or Analysis
Supplementary	16-24 LP (Maths or	32 LP of which	18 LP Finance
Subject	Supplementary	15 Technological	18 LP Operations
	Subject, see above)	Subject	Management
		8 Informatics	
Seminars	2 Mathematical	2 Seminars of which	1 Mathematical
	Seminars	at least 1 Maths	Seminar (3 LP)
	(each 3 LP)	(each 3 LP)	1 Economical Seminar
			(3 LP)
Other	Internship	10 LP Internship	12 LP of which at most
	(voluntary)		1 Economical Seminar
TÕS	6 LP	2 LP	$0\mathrm{LP}$
Master's Thesis	30 LP	30 LP	30 LP
Sum		120 LP	

Overview Master of Mathematics

# Going Abroad

There are several options to go abroad during your studies, including internships and theses. Most programmes require a preparation time of one year or more, so be quick if you plan to go abroad in your master.

Besides early application deadlines there are requirements such as language skills and a certain grade point average. Thinking about what courses you want to take and whether they can be recognised by your faculty in advance is beneficial and can be done via a learning agreement. You should also think about financing, for which there is support by some programmes.

The International Students Office (IStO) can give you further information and advice about all options. They regularly offer information events to single programmes as well and are generally happy to help.

#### Erasmus+

The most common programme to spend a semester abroad is Erasmus. The KIT has cooperations in the whole of Europe, giving you a grand range of universities to choose from. The programme includes a scholarship (that is bound to a fixed amount of mandatory credits) and relieves you of the study fees of the university abroad. Erasmus also supports internships abroad. Through already existing cooperations preparation is of little effort. Application deadline is usually around January for the next academic year, depending on your study programme. You apply directly at your faculty via the Erasmus coordinator.

#### Freemover

As a freemover you can go to the university of your choice, not being bound to the KIT's Erasmus cooperations. Here you have to arrange everything yourself and mostly have to pay the study fees of the respective university abroad as well. It is a nice option if you aim for countries that do not have study fees.

# Direct Cooperations and Overseas Programmes

Besides partner universities in Europe the KIT has bilateral cooperations with universities all over the world, called direct cooperations. It takes part in several exchange programmes, one of which is the 'Baden-Württemberg-Programm', that also support stays overseas. Application deadlines for these programmes are often 1.5 years in advance.

#### Master's Thesis

Writing your thesis abroad is a small exception since you do not have to be enrolled at the other university and do not have to pay study fees. The only requirement is that you find supervisors at both universities.

Through the InterACT programme, informatics students are supported in writing their thesis at an international partner university.

# **Double Degree Programmes**

The faculty of informatics offers double degree programmes with two partner universities in France. It includes spending one year at the KIT and the second year at the other university, giving you a German and a French degree in the end. You can apply at the beginning of your master's programme.

# Internships

Going abroad for an internship can be arranged freely by yourself and is not necessarily bound to one of the exchange programmes above. You can apply for an Erasmus scholarship or go to a student association such as IAESTE or AIESEC.

#### **Financing**

Studying abroad you are entitled to apply for 'Auslands-BAföG'. Since rates are higher than in Germany it is more likely to get than normal BAföG. You can apply as a foreign student as well in case you fulfil the requirements.

Generally all programmes relieve you of paying study fees. Erasmus includes a scholarship for the length of your stay, as well as the double degree programmes.

Other scholarship programmes are available, too. Further information is available at the International Students Office.

# Contact people

International Students Office Kinderklinik (Geb. 50.20), room 106 www.intl.kit.edu/ostudent/

Erasmus Mathematik:
Dr. Daniel Weiß
Mathematics building (Mathebau)
(Geb. 20.30), room 3.043
telephone: (0721) 608-43800 www.math.
kit.edu/lehre/seite/erasmus

Informatics study service
Informatics bulding (Infobau) (Geb. 50.34), room 001.2/001.3

erasmus@informatik.kit.edu
telephone: (0721) 608-44204

Interact Programme
Margit Rödder
telephone: (0721) 608-48676
margit.roedder@kit.edu
interact.anthropomatik.kit.edu

AK Erasmus (Counselling, not only for Erasmus+) www.ak-erasmus.de

# Links and Campus Plan

In this link collection you find most links from the previous chapters as well as some additional ones that have not been mentioned.

#### **Fachschaft**

- FSMI Homepage: wwww.fsmi.uni-karlsruhe.de
- FSMI Mailing lists: www.fsmi.uni-karlsruhe.de/ Kontakt/Mailinglisten
- FSMI Consulting Hours: www.fsmi.uni-karlsruhe.de/ Sprechstunden
- FSMI Facebook: facebook.com/fsmi.kit
- FSMI Twitter:
  twitter.com/fsmikit
- O-Phase: www.o-phase.com
- FSMI Odie (Exams and Protocols):
   www.fsmi.uni-karlsruhe.de/
   odie/web

#### KIT

KIT homepage: www.kit.edu

- Wifi: www.scc.kit.edu/dienste/wlan. php
- Cafeteria: www.sw-ka.de/de/essen
- Library: bibliothek.kit.edu
- Library Seatfinder: www.bibliothek.kit.edu/cms/ freie-lernplaetze.php
- KIT Webcast (Lectures):
   www.youtube.com/channel/ UC6AqaL6fH91U5YhyUCI0ZOQ
- KIT Opencast (Lectures): opencast.informatik.kit.edu/ engage/ui/index.html?s=1&p=1
- Sports Courses: www.sport.kit.edu/ hochschulsport/1389.php
- Language Courses: www.spz.kit.edu/253.php
- ZAK (Seminars): www.zak.kit.edu/english
- HoC (Seminars):hoc.kit.edu
- Student Groups: www.asta-kit.de/de/engagierdich/hochschulgruppen

- Extracurricular Qualifications: www.sle.kit.edu/imstudium/ studienergaenzende\_angebote. php
- Campus Plan: www.kit.edu/downloads/Campus-Sued.pdf
- Campus Plan (interactive):
   www.kit.edu/campusplan
- KIT NdW (Night of Sciences): www.ndw-ka.de
- KIT Career-Service: www.irm.kit.edu/careerservice. php
- KIT-Karrieremesse (Career Fair): www.karrieremesse.kit.edu/
- Bonding: karlsruhe.bonding.de/
- Studierendenwerk (Student Services):
   www.sw-ka.de/de/

#### **ASTA**

- AStA: www.asta-kit.de/en
- AStA Druckerei (Print Shop):
   www.asta-kit.de/de/druckerei
- AStA Car Rental: www.usta.de/service/fahrzeuge
- AStA Legal Advice: www.asta-kit.de/de/angebote/ beratung/rechtsberatung AStA German Courses:

www.asta-kit.de/de/angebote/
deutschkurs

#### SCC

- SCC (Computing Centre): my.scc.kit.edu
- SCC COPS (Printing):
   www.scc.kit.edu/dienste/cops.
   php
- SCC Mailbox: www.scc.kit.edu/dienste/7397. php
- SCC Certificates: www.scc.kit.edu/dienste/ zertifizierung.php
- SCC VPN: www.scc.kit.edu/dienste/vpn. php
- SCC Software Shop: www.scc.kit.edu/dienste/4786. php
- Baden-Württemberg Sync&Share (Online Data Storage):
   bwsyncandshare.kit.edu/login

# Studying

- Student Portal: campus.studium.kit.edu
- Maths Faculty: www.math.kit.edu/
- Informatics Faculty: www.informatik.kit.edu/
- ILIAS (Lecture Material): ilias.studium.kit.edu

# Links and Campus Plan

- Email: owa.kit.edu
- Email Forwarding: my.scc.kit.edu/shib/e-mailweiterleitung.php
- Study Office: www.sle.kit.edu/english/ wirueberuns/695.php
- Prospectus: campus.studium.kit.edu/ events/catalog.php#!campus/ all/fields.asp?group= Vorlesungsverzeichnis
- KITHub (Prospectus): www.kithub.de
- Module Handbook Maths: www.math.kit.edu/lehre/seite/ modulhandb/de
- Module Handbook Informatics: www.informatik.kit.edu/ formulare.php#block1933
- International Master Homepage: www.math.kit.edu/lehre/page/ classes/en
- Examination Rules: www.fsmi.uni-karlsruhe.de/ Studium/Pruefungsordnung.html
- Wiwi-Portal: portal.wiwi.kit.edu/

#### Karlsruhe

 KA Starter Present: www.karlsruhe.de/ b1/stadtmarketing/

- wissenschaftsbuero/projekte\_
  wb/erstwohnsitz.de
- Karlsruhe Homepage: www.karlsruhe.de/int.en
- KA Lightshow: www.schlosslichtspiele.info
- KA Sightseeing: www.karlsruhe-tourismus.de/en/ discover/sights
- KA City Offices: www.karlsruhe.de/b4/ buergerdienste/persoenlicher\_ service
- KA Ausländerbehörde (Aliens Department):
   otv.karlsruhe.de/terminmodul/live/index/index/dienststelle/
   38

## **Transportation**

- KVV (Transport): www.kvv.de
- Nightliners (Busses):
   www.kvv.de/fahrt-planen/
   sonderfahrten/nightliner.html
- Stadtmobil (Car Rental): karlsruhe.stadtmobil.de/ privatkunden

# Internationals and Going abroad

INTL: www.intl.kit.edu/ostudent

- Erasmus Mathematics:
  www.math.kit.edu/lehre/seite/
  erasmus/en
- Erasmus Informatics:

  www.informatik.kit.edu/
  erasmus.php Double Degree Programmes Informatics:

  www.informatik.kit.edu/6543.

  php Direct Cooperations:

  www.intl.kit.edu/ostudent/
- Badem-Württemberg Programme (Overseas):
   The late of the l

www.intl.kit.edu/ostudent/3606.php

DAAD: www.daad.de/en

6608.php

#### Flat search

 Studierendenwerk (Student Services: Residence, Flat Search and further Links):

www.sw-ka.de/de/wohnen/

• Town Wiki:

ka.stadtwiki.net/
Studentenwohnung

#### Other

- Deutschlandstipendium (Scholarship):
   www.deutschlandstipendium.de/ de/english-1700.html
- Z10 (Students Pub): z10.info/

- zib (Counselling Centre):
   www.sle.kit.edu/english/
   vorstudium/119.php
- SZS (Centre for Visual Impairment) www.szs.kit.edu/
- Centre for Disability and Chronic Diseases:

 $\begin{tabular}{ll} www.studiumundbehinderung.kit.\\ edu/ \end{tabular}$ 

- Family Portal: www.familienportal.kit.edu/ english/179.php
- Pregnant and Studying:
   www.sle.kit.edu/imstudium/schwanger-im-studium.php
- Nightline (Telephone Counselling Service):
   nightline-karlsruhe.de/
- PBS:

www.sw-ka.de/de/
beratung/psychologisch/
psychotherapeutische\_
beratungsstelle\_karlsruhe

PBS Booklist:
 www.sw-ka.de/de/
 beratung/psychologisch/
 psychotherapeutische\_
 beratungsstelle\_karlsruhe/
 buchtipps

For further information have a look at the Erasmus+ Student Handbook (IStO):

www.intl.kit.edu/download/ ERASMUS%20student%20handbook. pdf

