

NOT AGAIN!

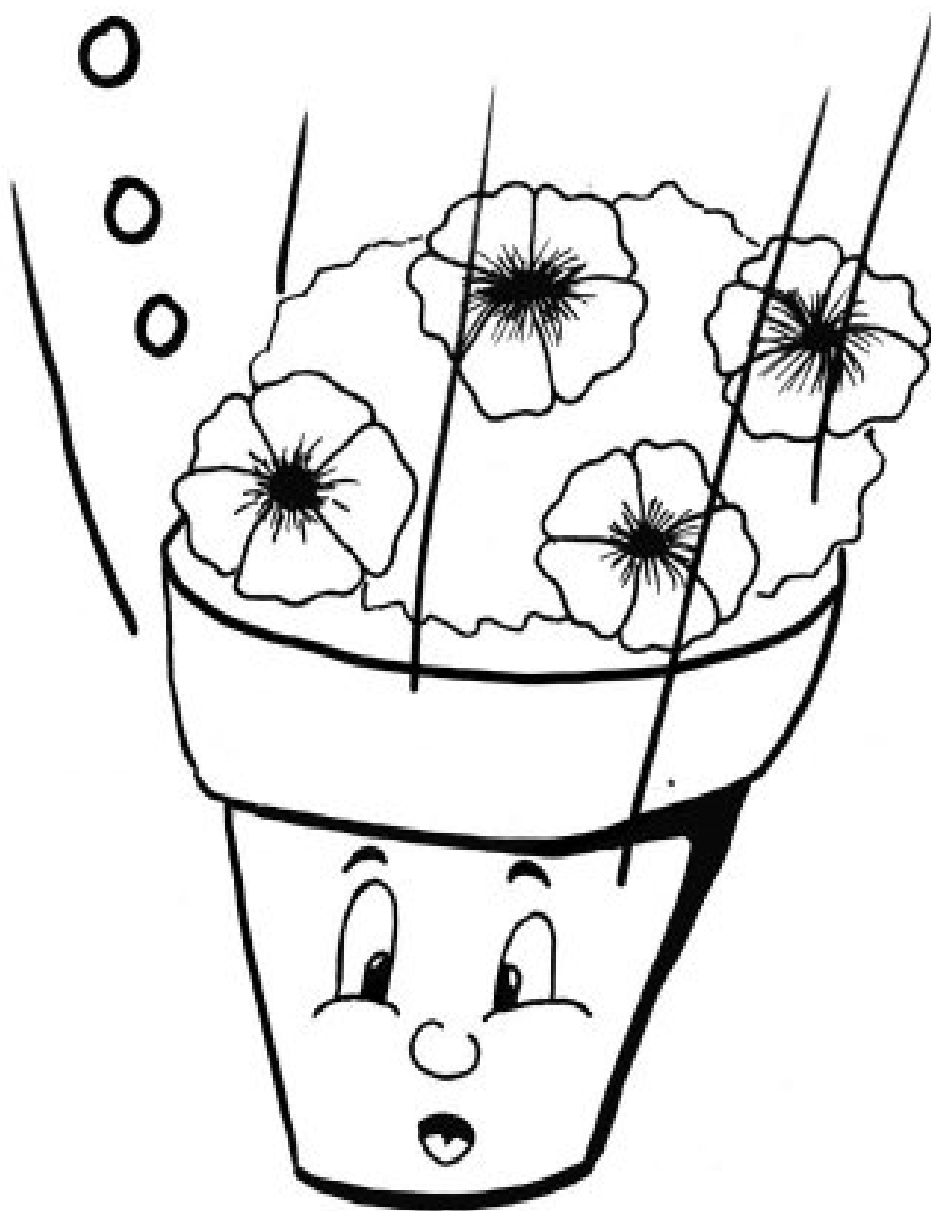


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Welcome

Preface

Dear fresher,

You are now holding the **OWO-Info** in your hands. Loads of people have been writing on it, spellchecking and layouting it and eventually, it became an actual paper.

OWO is short form of **O**rientierungs**W**Oche, which is the week before your first lecture (i.e., 9.-13.10.06). During this week, experienced students (the OWO-tutors) will explain you how the studies work, how you can find everything at university and in Darmstadt. And, last but not least, what you could do at times you are not currently studying – taking part in the evening activities is really worth it. The pub-crawl, the games night and the OWO party are great opportunities to get to know your fellow students.

This OWO-Info is a kind of lecture notes for the OWO. If you are longing for the beginning of your studies, you may shorten the time with reading it. During the OWO, it can remind you of vital information and you might take notes in it. After the OWO, you can look up information that you have forgotten by then or that has not been discussed extensively enough.

The only thing left for me to do now is to welcome you at the TU. So enjoy this OWO-Info, the OWO and especially your whole time at university. I hope to see you on October 9th for the beginning of your studies (and when mine will be continued).

Juha

OWO timetable MCS (german)

MONDAY (09.10.)	TUESDAY (10.10.)	WEDNESDAY (11.10.)	THURSDAY (12.10.)	FRIDAY (13.10.)
8⁰⁰ reception by the vice-dean trial lecture LA (S3 11 0012)				
9⁵⁰ KG 1 getting known; why MCS? ()	9⁰⁰ breakfast	9⁰⁰ breakfast	9⁰⁰ breakfast	from 9⁵⁰ brunch (on 603 qm)
11⁴⁰ language course	9⁵⁰ university tour		9⁵⁰ trial lecture Analysis (Diplom) (S3 11 0008)	11⁴⁰ trial tutorial Linear Algebra ()
lunch break	11⁴⁰ money		11⁴⁰ integration ()	13³⁰ KG 4: feedback ()
13³⁰ CS-block (S3 11 0012)	lunch break	lunch break	lunch break	14²⁵ foot-balls- game meeting point 14 ⁰⁰ at the bus stop Schloss (Hochschulstation)
15²⁰ city tour	13³⁰ getting to know the Mathebau (meeting point S2 15)	14²⁵ KG 2 learning mathematics & money ()	14²⁵ KG 3 timetable and curriculum ()	
	16¹⁵ university politics ()	16¹⁵ field game (S2 15, S1 03, S2 01)	16¹⁵ presentation of proseminars (S2 17 103)	
	17¹⁰ FS-meeting light (S2 15 219 + ε)	19⁰⁰ games evening (S2 15 217 + ε)	18⁰⁰ OWO-theatre + 21⁰⁰ party (on 603 qm)	
	19⁰⁰ pub crawl (meeting point: S2 15)			

OWO timetable MCS (international)

MONDAY (09.10.)	TUESDAY (10.10.)	WEDNESDAY (11.10.)	THURSDAY (12.10.)	FRIDAY (13.10.)
8⁰⁰ reception by the vice-dean trial lecture LA (S3 11 0012)				
9⁵⁰ KG 1 getting known: OWO-overview ()	9⁰⁰ language course	9⁰⁰ language course	9⁰⁰ language course	from 9⁵⁰ brunch (on 603 qm)
11⁴⁰ language course				11⁴⁰ trial tutorial <i>Linear Algebra</i> ()
lunch break	lunch break	lunch break	lunch break	13³⁰ KG 4: feedback ()
13³⁰ CS-block (S3 11 0012)	13³⁰ getting to know the Mathbau (meeting point S2 15)	14²⁵ KG 2 learning mathematics & money ()	14²⁵ KG 3 timetable and curriculum ()	14²⁵ feet-balls- game meeting point 1400 at the bus stop Schloss (Hochschulstadion)
15²⁰ city tour	16¹⁵ university politics ()	16¹⁵ field game (S2 15, S1 03, S2 01)	16¹⁵ presentation of proseminars (S2 17 103)	
	17¹⁰ FS-meeting <i>light</i> (S2 15 219 + €)			
	19⁰⁰ pub crawl (meeting point: S2 15)	19⁰⁰ games evening (S2 15 217 + €)	18⁰⁰ OWO-theatre + 21⁰⁰ party (on 603 qm)	

Commented OWO timetable

Monday

The Monday morning of your OWO begins with your reception by the president of TU and the dean of the math department in Hexagon (S3|11 008). After that you will attend your first trial lecture (the room below for MCS-students). After your lecture your tutors will pick you up and split you into small groups. In your first Kleingruppe (KG) you'll get to know each other with tea and cookies. You will get an overview of the events in this OWO. Then you will attend the language course for the foreign students together. In the afternoon, the MCS-students will get to know more about studying computer science . . . The day is finished with a city tour. After that you can relax, because the next days are going to be long :-).

Tuesday

There will be breakfast at 8:30h in the five open collegiate working rooms (please bring along your own dishes). Afterwards there is the language-course again. Those of you who need not visit this course may learn something about money with the Diplom-students. After lunch you can compete in the Mathebau-rallye, where you will learn a lot about the Mathebau. Then we will tell you everything about university politics. You'll learn how students are involved in university politics. Afterwards the Fachschaftssitzung takes place, everyone interested is welcome.

In the evening you will get to know Darmstadt at night: On the pub-crawl, you will be touring through the pubs of the city in several groups – this might get a long night, but its definitely worth it.

Wednesday

After breakfast you will attend your language-course or get the morning off. After lunch you will learn about teaching, learning and living in the Mathebau. You will then win against the physicists and computer-scientists in the field game :-).

Concerning gaming: The games evening will be in 217 + ϵ . And this as well as the pub crawl might take quite a while.

Thursday

After the tasty breakfast, the MCS-students are going to have their language-course again or attend the second trial lecture of the Diplom-students. At 2:25pm you can finally set up your timetable in KG3 as well as planning your curriculum. Afterwards the proseminars will be presented to the students.

In the evening, there will be a theatre-play (with your tutors as actors), and finally, the OWO-party takes place in 603qm. It's definitely worth it! Go there and have a big night with us!

Friday

As you all have probably been on the party till the very end, you may have a good night's rest. The brunch will also be in 603qm (useful, if somebody wasn't able to get home at all). Your

second exercise will take place at 11:40am, and the last KG will be at 1:30pm, it's about your feedback and your views of studying so far.

The closing is made by the traditional feet-balls-game with a snack, it's a soccer-like game, but with 4 teams, 3 balls, 2 goals and 1 field..

And now your pretty OWO is already over, we hope you enjoyed it.

Rebecca



Some of your OWO tutors

Freshers' Weekend

What, Where, When and Why is Freshers' Weekend?

What: FreWe is a weekend with your fellow students and the *Fachschaft*. We're staying in a very cool seminar house. The trip will be organized together with private cars. During your stay you'll have a lot of time to relax, but also fun and entertainment with your new student friends and the possibility to take part in interesting activities every day.

Where: At the Gerhard-Löffler-Freizeitheim (Stierhöfstetten, near Würzburg). The house is a bit out of the way, and we've rented all of it, so we'll be all alone there. ;-) There's a main house and some cottages for sleeping. In the house you'll find, apart from the lounges, rooms for tabletop football, table tennis, pool, and a room with a fireplace. Outside there's a place for a bonfire, a beach volleyball court, a basketball court, and a football court.

When: Friday, November 10th, till Sunday, November 12th 2006

Why: Because maths at TUD is much more than just lectures and tutorials! You can meet all the other students who show up at the same lectures (or don't, depending). You'll experience that the department of maths is more than studying, like parties, maths musical evenings, the maths choir, university politics, the maths dance, ...

In short, too much to learn about in one short week of OWO. During that OWO, you'll probably be more concerned about your timetable, your lectures, etc. The first weeks at university turn out to be quite stressful, too. New city (perhaps even new country), strange people, weird mathematics.

At the Freshers' Weekend you'll have the opportunity to relax, and to get to know some of those people in a more un-mathematical atmosphere. We've organised lots of fun activities to take part in, but there'll still be lots of time for you to chill out, do sports, play cards or board games, explore the surrounding area, take your favourite book and find a place away from the entire bustle, whatever. If you feel that a weekend without maths is impossible, fine. Grab your lecture notes and come along! It's surely better to discuss your maths exercises with your fellow students, or have some tutor you can ask if you run into problems, than to stay at home by yourself and get frustrated.

You can *sign up* for the weekend during the OWO rallye, wednesday after 10.30 in the Fachschaft's room (219), thursday during the Proseminar presentation and friday while having brunch. The Fachschaft will pay most of the costs of this weekend, but even they do not have endless money, so everyone who wants to come has to get together a little sum of money (we were not sure about it until press deadline) when signing up.

If you have any more questions, ask Juha, Christina or Elli, your tutor or anyone else or send an email to freshers-weekend@mathebau.de!

Elli, Christina and Juha

Studying

Interview with Laurentiu Leustean

Laurentiu Leustean will be the lecturer of your “Analysis I for MCS” lecture.

What do you prefer? Coffee or tea?

Now tea. One month ago coffee.

When did you begin your studies and how did you come to Darmstadt?

I began my studies in 1990 at the University of Bucharest in Romania. In April 2004, I came to Darmstadt as an assistant of Prof. Ulrich Kohlenbach.

Why did you study mathematics in the first place?

I liked it very much, it was my favourite subject in the high school.

Can you explain shortly your main area of research?

My main area of research is proof mining. It is about developing logical tools (more specifically proof theoretic techniques) which systematically transform ineffective proofs of mathematical theorems in such a way that explicit quantitative data, e.g. effective uniform bounds, are extracted, which were not visible beforehand.



Have you ever thought about interrupting your studies and take a position in business or industry?

No. Never.

What do you do in your leisure time?

I spend a lot of time playing with my children. I like also to listen to music, to read literature and to watch a nice movie or a sport event.

What kind of music do you like?

I like classical music, music from the seventies, oldies and folk music.

What is your favourite book?

It is hard to say which is my favourite book, but my favourite author is Dostoievski.

Have you thought of writing a book by yourself?

No. I don't think I have this talent.

How about a mathematical book?

I would really like to write a mathematical book. And I hope to do this in the future.

How many digits of the number π do you know by heart?

Three or four digits, including the three.

Do you know a mathematical joke?

I read many mathematical jokes. I like very much the following: An engineer thinks that his equations are an approximation to reality. A physicist thinks reality is an approximation to his equations. A mathematician doesn't care.

Which question would you like to ask the new students?

The first question would be to ask them why did they choose to study mathematics.

A situation that occurs very often is that a new student is asked, what he can use mathematics for. What should he answer?

I think that for everybody it is clear that mathematics has many applications. But for me, this is not the important thing. I believe mathematics is like art. It is abstract and has a special beauty. Proving a nice theorem is enough for me without thinking if there is an everyday application for it.

What else should we know about you?

I don't know.

What would you change if you were the "chief" of the Mathebau?

This is difficult to say. I don't think I would be good for this.

Thank you very much for the interview.

The interviewer was Juha

Analysis I MCS: Assistant

Dr. Leustean's assistant in the winter semester of 2006 will be Eyvind Briseid. He will mainly be responsible for preparing and organizing the tutorials and exercise groups. Eyvind Briseid comes from Norway, and studied at the University of Oslo. Since October 2005 he has been a doctoral student and "Mitarbeiter" at the TU Darmstadt.

Feel free to contact him if you have questions of a mathematical nature, or questions concerning the tutorials and exercise groups for Analysis I for MCS.



Eyvind Briseid

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Interview with professor Otto

Prof. Dr. Martin Otto will be the lecturer of your “Linear Algebra I for MCS” lecture.

The most canonical question first: Coffee or tea?

Generally both, but not at the same time. Most of the time I drink tea, but I wouldn't reject a good coffee, that's why I got this coffee machine from Italy [pointing at it].

Tell us something about your academic career.

I studied maths and physics in Freiburg, also in Cambridge for a year. After I got my PhD in mathematical logic I went to Aachen and did my habilitation there. I've always been keen on links between subjects, first mathematics and physics, and now mathematical logic und computer science. Afterwards I spent one year in the United States in California, then another year in Aachen. Finally, I became a reader at the computer science department in Swansea, Wales, before I came to Darmstadt and back to a mathematics department.



But you are also giving the lecture “Formale Grundlagen der Informatik” (Mathematical Foundations of CS) ?

The “Formale Grundlagen I” are very basic, but they are another example for the connectedness of computer science and maths. The second part of the lecture consists mainly of logic which relates more closely to my research area.

If you had to explain your area of research briefly what would you say?

I work in mathematical logic which classically involves foundational issues, but with an emphasis on connections with theoretical computer science, involving for instance logical definability in relation to computability and complexity.

Did you always want to become a professor?

In fact I didn't really anticipate that. Originally I did my “Staatsexamen” in physics and maths, but I didn't start teaching at a school because I wanted to stay at the university.

Are you satisfied with your current position here in Darmstadt?

Yes, of course. I enjoy to be in a maths department and between maths and computer science here teaching the students of both courses. I usually try to make the students think about the topics from different sides, that's also what I enjoy very much.

What do you think about the MCS-programe?

It is a very good installation, not only because foreign students can study MCS without learning German in advance. The fact that MCS students automatically have computer science as minor subject makes it possible to teach them in a slightly different way, namely regarding the applications of maths in computer science. Studying MCS is like studying abroad for foreigners, and I would strongly encourage German students to spend a year abroad, too, if possible.

What advice would you like to give your freshers concerning their studies?

It may be difficult at first. You don't really know what is waiting for you. Usually people don't have a clear idea of what studying maths is like. What you know from school mostly isn't fully

representative of the whole of the subject, in particular of its conceptual breadth. The main thing is to be academically curious, to enjoy and explore new concepts in one's own subject and beyond. One also needs to be committed and try not to lag behind too much, because this is going to be most problematic.

Much support is being offered besides the lectures, through exercises, tutorials and more. I'm thinking of orientation events like the OWO, the Orientation Colloquium. So one should make the most of this; studying is, after all, a full time job.

What would you like to change as the Dean of the maths department? Is there anything coming to your mind spontaneously?

I would opt for a departmental common room (with blackboards and tea/coffee), to improve informal communication.

Which are your favorite non-mathematical books?

I read many things. Some of my favourite authors are Thomas Mann, Wolfgang Hildesheimer, Thomas Bernhard (for the absurd). I also enjoy English literature a lot, e.g., John Fowles' *Magus* is a favourite.

And what about music?

Well, I do like classical as well as contemporary music and – even more importantly for me – the visual arts.

What do you do in the time you don't spend in a lecture hall or the maths department?

Often, even when not 'working' one still doesn't leave mathematics behind. But I spend most of my spare time with my family: my wife and two daughters. I also like some outdoor activity, e.g., on my bike.

How many digits of π do you know?

I know two.

Including the one before the digital point?

No, that counts separately.

So you don't come across numbers very often?

This is probably a point where many people have a completely wrong idea of what doing maths can be like. No, most of the time, you don't see any numbers at all.

The interview was conducted by Sonja and Andi.

Linear Algebra I: Assistants

Sven Herrmann got his Diplom at the TU Darmstadt one year ago. Since then he is assistant at the AG 7.



Sven Herrmann

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You are not alone! - The mentoring system at the department

The department wants to support the beginning of university with the help of its mentoring system, to encourage the students according to their individual, personal prerequisites and skills in studying and behaviour; and to empower them to reflect their behaviour in studying and learning as well as enabling their self-assessment. The learning-process should be supported by the mentors such that the students develop by planning practical steps and compiling possibilities to expand their personal goals. The mentor offers the students a help in self-help. In addition, the department gains feedback about general strengths and weaknesses in the course offers and the different programs of study through conversation between mentors and students.

Procedures of assigning the students

1. **Beginners in the program of studying 'Mathematics with Computer Science' – Bachelor**
The lecturers of the proseminar 1 will also be the mentors. The assignment will proceed after the presentation of the proseminars during the orientation week.
2. **Beginners in the program of studying 'Mathematics with Computer Science' – diploma**
The students are divided into groups of about 10 people by displayed on lists during their orientation week. This way groups of students who just got to know each other are able to enlist as a whole. The date for the next meeting is already noted on the lists, but not the name of the mentor. The allocation of mentors will be after the end of enlisting. A change of mentoring-groups will be possible in justified individual cases at a later date.
3. **Mentoring system for beginners in the program of studying 'Mathematics with Computer Science' – Bachelor of Science** The allocation of their mentors happens during their allocation to the proseminars in the orientation week.

It is important for all groups of students that no teaching staff of the first year of studies is also used as mentors to prevent conflict situations.

Structure of the mentoring-system

Approximately, there will be the following meetings with mentors for students in the first year of studies:

- meeting at the beginning of studies (study-entrance meeting)
- meeting in the middle (december) of the first semester (christmas meeting)
- meeting at the end of the first year (closure meeting)

In the study-entrance meeting during orientation week or the first study week, the students should get to know their mentor and clarify the aims of the mentoring system. The group should also arrange how to stay in contact and when/how to meet the next time.

The christmas meeting offers a first opportunity to exchange experience and analyse and, if necessary, change the behaviour towards learning and studying.

The closure meeting offers the option of feedback to the students and should help the students with planning and backing their future studies.

The department expects participation in the meetings with their mentors from all students.

Plan of the Grundstudium for MCS (Diplom)

Unlike the *Hauptstudium*, the courses in the *Grundstudium* – i.e. the first four semesters – are relatively fixed. The only courses where you have a choice which one to pick are the two proseminars and your *Wahlpflichtfach* (compulsory optional course) in the fourth semester.

1st semester

Maths courses: During your 1st semester you will attend Analysis I (Ana I) und Linear Algebra I (LA I). Both are 4+2+2 courses, which means you'll have 4 hours of lectures a week (SWS = *Semester Wochen Stunden*, i.e. *hours per week during semester*), 2 SWS of exercise classes and 2 SWS of tutorials. **Computer Science courses:** Computer Science I (CS I), which is a 4+2+2 course, (4 hours of lectures, 2 hours of exercise classes, 2 hours of programming labs).

exams: In Ana I you have to pass the *Semestralklausur* (end of semester exam).

project: During the semester break you will (have to) attend a programming project to get the CS I-Schein (programming language is Java), which is needed for your Vordiplom.

2nd semester

During the 2nd semester you will continue the courses from the first semester (LA II, Ana II, CS II), whereas LA has now changed into a 2+2 course. Additionally you will choose a proseminar II (PS) with 2 SWS.

exams: Again you have to pass the *Semestralklausur* for Ana II, and to get the *Leistungsschein* in the PS.

Vordiplom:

After your 2nd semester you will write an examination about CS I and CS II.

3rd semester

Starting in your 3rd semester, your courses are in German.

The Analysis course in the 3rd semester splits into two subjects, Ordinary Differential Equations (ODEs) (i.e. *Theorie der gewöhnlichen Differentialgleichungen (DGLn)*) and Theory of Complex Functions (i.e. *komplexe Funktionentheorie*) (each 2+2).

Additionally you will attend the course Introduction to Algebra (i.e. *Einführung in die Algebra*) (also 2+2) and Introduction to Numerics (i.e. *Einführung in die Numerische Mathematik (NuMa I)*) (3+2+1 programming labs).

exams: In NuMa you need a *Schein*, which may be acquired in different ways.

Vordiplom:

After your 3rd semester you take part in the Geometry and Algebra *Vordiplom*-exam, consisting of a written and an oral examination about LA I, LA II and Algebra.

4th semester

Ana IV (2+2) consists of Measure Theory and Extended Multiple Integration (i.e. *Maßtheorie und erweiterten Mehrfachintegration (MIT / MFI)*).

The Introduction to Statistics (*Einführung in die mathematische Statistik*), a 3+3 course, completes your dose of applied mathematics during *Grundstudium*.

In addition you need to choose a mathematical *Wahlpflichtfach* (Topology, NuMa II, Algebra ...). If you're lucky, some of the options you can choose from are in English.

exams: none

Vordiplom:

- written/oral in Analysis consisting of Ana III + Ana IV
- Applied Mathematics (Statistics written, NuMa oral)

Frauke & Andi

Plan of the Grundstudium for MCS (BSc.)

Semester	Subject (Basic Modules)			
1st	Analysis I (4+2+2)	Linear Algebra I (4+2+2)	Computer Science I (4+2+2*)	Proseminar I (2+0)
After 1st	Written trial exam	Written trial exam	Written trial exam; Programming project	
2nd	Analysis II (4+2+2)	Linear Algebra II(4+2+2)	Computer Science II (4+2+2)	Proseminar II (2+0)
After 2nd	Written basic module exam	Written basic module exam	Written basic module exam	

Programing Project

It takes places during the first two weeks after the winter semester. You will be given a bigger programing problem which you are asked to solve in groups. On the last day you will have to present and defend your program in front of the lecturer and his teaching assistant. In order to take your CS Basic Module Exam after the 2nd semester you need to pass this project.

Proseminar I + II

The aim of these courses is to develop your ability to speak about mathematics. The topics of the courses offered in the semester may vary. That depends on the lecturer and his field of research. You are free to chose one Proseminar you like.

Written Basic Module Exam

At the end of the second semester you have to take three Basic Module Exams. They each last four hours and all Basic Module Exams cover the material of **both** semesters.

Semester	Subject (Advanced Modules)			
3rd	Differential Equations (2+2) Free Choice in pure maths (2+2)	Introduction to Algebra (2+2)	Introduction to Numeric + preparatory course (3+3)	
After 3rd	Oral exam(s) (20 or 40 min.)	Oral exam (ca. 20 min.)	Oral exam (ca. 30 min.)	
4th	Multidim. Integration (2+2)	Free Choice in applied maths (at least 2+2)	Statistics (3+3)	Free Choice in Computer Science (2+2)
After 4th	Oral exam (at least 20 min.)	Oral exam (at least 20 min.)	Written Aufbau-modul-exam	Written or oral exam

Analysis III

Differential Equations and Multidim. Integration used to be a combined subject. Until WS 04/05 they were studied under the name Analysis III. Now Multidim. Integration is being studied during the summer semester, that is why you should make your choice in pure mahts earlier, i.e. in the 3rd semester by taking the Theory of Complex Functions lecture.

You can go to the Functional Theory lecture, for example but you are not obliged to. It is nevertheless advisable that you take a lecture in pure maths in the 3rd semester, otherwise you will be quite overloaded during the 4th and 5th semester.

Introduction to Numeric and Software

Each 2 weeks you have to solve a programming problem and present them in a group. In order to take the oral exam you need to pass the programming exercises during the semester.

Oral Exams

The duration depends on the lecture's size.

Free Choice You need to take both one course from pure maths and one from applied maths. It is nevertheless advisable that you take a lecture in pure maths in the 3rd semester and a lecture in applied maths in the 4th semester, otherwise you will be quite overloaded later on. Offered courses are listed in the "semester catalogue".

Semester	Subject (Qualification Modules)			
5th & 6th	Free choice in pure maths* (≤ 12 ECTS)	Free choice in applied maths* (≤ 12 ECTS)	Free choice in computer science* (≥ 12 ECTS)	Intermediate Seminar (2+0)
After 5th or 6th	Oral exam (at least 45 minutes)	Oral exam (at least 45 min.)	Written exam	Project (2+0)
In or after 6th	Bachelor Thesis			

***Free Choice** The total sum in these fields of study has to be 48 ECTS including the Intermediate Seminar and the Project and additionally at least 12 ECTS in each field not including the seminar or project.

Intermediate Seminar This seminar can lead you to a topic for your bachelor thesis.

Project A project is almost the same as a seminar, but its actual task includes some more applied work (e.g. programming, solving a given problem in given time).

You can make (do) your project either at the university or somewhere "outside". If you decide to do it at the university, you can take a look at the topics, which are offered in the "Vorlesungsverzeichnis" or go straight to Prof. Kiehl, who will find you one.

The project can be substituted by an internship, where you are dealing with a task is related to mathematics or informatics. It should last **at least 3** weeks. It is a good opportunity to get to know a company from "inside". If you decide to make an internship, you have to talk to Prof. Kiehl **first**. He is responsible for the authorization of the internships outside the university.

Bachelor Thesis Near the end of your studies you will have to write a bachelor thesis. The task of a bachelor thesis is not supposed to be that voluminous as of a master or diploma thesis. The usual task includes the summary of mathematical texts or you will have to express a text in a better way (for example, to reconstruct proofs that the author omitted). You can write your thesis either on an informatics or a mathematical topic. Formally there is no firm page number that you have to fulfill but around 20 to 30 pages are usually quite enough.

As it is more or less your first big mathematical text you have to write, it is usually not expected to do much of a research work or find new things out, but rather that you can express scientific results structured and comprehensible, using the knowledge you've gathered during the three years. So there is really nothing to be scared of.

The bachelor thesis is usually something like a continuation of your seminar (or project) topic. That means you will have to write down the results of your earlier work in details. That makes it quite

easier for you, as you will be already familiar with the topic.

It usually takes about two months to write it. Don't forget that after you register you have to hand it in within two months' time (otherwise you will feel the strong hand of bureaucracy). If your supervisor doesn't mind, you can commence with the thesis before you register. Most of the students use the programme \LaTeX , which is kind of expected, but not compulsory. This programme is very useful for texts containing lots of formulas and produces a nicer output than WORD (take a look at the OWO-Info you have in hands). I would advise you to learn it earlier. That will take off some of the pressure at the beginning of your thesis. It is not difficult and there are many people who can help you.

Katia & Sebastian

Your courses during 1st term

Analysis (Ana)

Analysis is the art of evading infinity.

Analysis is the stuff you did in your maths courses in high school most of the time. You will look at functions, sequences, limits, etc.

You will learn to deal with very small numbers, and to master infinity.

There will be four hours of lectures and two hours of exercise classes a week. In the exercise classes you will learn to apply the knowledge you gained in the lectures to mathematical problems. This is achieved by working in small groups, with an exercise tutor to help you with any mayor difficulties. Two additional hours of tutorials will give you a deeper insight into what you have learned. They are structured similar to the exercise classes, and you will be glad that you don't need to solve these (often harder) problems all by yourself at home.

Linear Algebra (LA)

Some people believe linear algebra happens when there are small arrows above the letters. In a way, this is true, that is you are on the right track if you are thinking of vectors, matrices and directions. But arrows in the plane are just a way of depicting two-dimensional vectors. Linear algebra might just as well be concerned with washing machines or sausages. You will learn to deal with (and solve) linear systems of equations, to define and invert maps. You will learn how to rotate and reflect a plane, and how to bend teaspoonsⁱ. You will get to know invisible spaces and fields without grass.

At the beginning LA seems easier than Analysis to most students. It is certainly a bit more applied, and there is more "calculating".

As in Ana, you will have four hours of lectures per week, two hours of exercise classes and two hours of tutorials.

Computer Science (CS)

In Computer Science you will learn a lot about the (rather abstract) basics of the subject, and then find out how useful they turn out to be for programming.

Concepts of programming languages and elementary algorithms will show up, as well as types of abstract data, simple data structures (stacks, lists, trees), recursion, verification and algorithm efficiency analysis. You will also learn a bit about compiler construction.

You will find out about object-oriented programming in general, and the programming language "Java" in particular.

The course consists of four hours of lectures a week and two hours of exercise classes. The exercise classes are held in a normal seminar room, just like in Ana and LA. Same concept of small groups + exercise tutor. No computers. In addition you will receive programming exercises, which also amount to about two hours per week, to solve in the computer rooms.

Matthias & Frauke

ⁱ There is no spoon. The editors

Colloquia and talks

Different kinds of colloquia and talks are held at the department. They differ in the kind of lecturer who holds them as well as in their intended audience. Their common feature is the fact that they are all interesting and worth attending.

The **Orientation Colloquium** is intended mainly for third and fourth semester students, although first and second semester students are also welcome, of course. The idea behind the Orientation Colloquium is, as the name suggests, to offer some orientation because, starting from the fourth respectively fifth semester, you yourselves will have to decide which areas of mathematics you want to put the emphasis on during the rest of your studies. To do that, you must of course know what the different research groups do. Thus, every semester several research groups present themselves and try to convince you to attend their courses and to write your degree dissertation in their research group. The Orientation Colloquium takes place at irregular dates during the semester, but always on a Monday at 16:15. It is announced on the mailing lists and through posters. After the one-hour talk there is a relaxed get-together in the student's union room where you can talk to the lecturer and get to know his or her work better.

The *Kolloquium* is intended for students from fifth semester onwards and professors. The topics are no longer orientational but *real* maths and can thus be arbitrarily difficult. But even if you do not understand everything, the talks are still interesting. They are often held by professors from other universities and thence are a good opportunity to get to know the research areas of other universities. *Promotions-* und *Habilitationsvorträge* as well as new professor's inaugural lectures and talks as part of the *Offene Seminare* of the different research groups are also very interesting. All of these fantastic events are announced at the pin boards next to the small elevators in the maths building.

Finally, there is the *Studentische Vortragsreihe*, talks by students for students. Of course, those talks only happen if you yourselves get involved and give a talk about your favorite, maths-related topic. Just contact the organisers at stuvo@mathebau.de.

Thilo L.

My first semester

There are of course those certain, well-known clichés people normally have in mind when thinking about mathematicians. Some of them being that mathematicians are boring, singled-minded, and somehow strange people who are not capable of any proper conversation except about strange subjects involving some strange formulae for instance. (You might have noticed a slight accumulation of “strange” in this sentence.) Having met mathematicians who – when running across each other again after several months – began their conversation not by as subtle, commonly usual phrases as “Hello!” or “How are you?” but by naturally much more important issues such as “Do you think one can construct the sine of 19° ?”, I honestly was a little bit scared of studying this subject. But anyway for many people (including me) studying mathematics seemed the most obvious (and the only conceivable?) thing for me to do after school. So I enrolled for MCS despite the sometimes annoying comments like “Math at university is very different from math at school, you know ...”.

As October approached and my excitement grew with every day, I had actually just been looking forward to another last week of loafing around. But then there arrived a postcard inviting us for a welcome of the president of TU Darmstadt the following Monday at 8 o'clock in the morning. This welcome was at the same time the beginning of the so called OWO, which I had not heard that much about beforehand. I can only encourage all beginning students to attend the activities the OWO offers because it turned out to be a great week with lots of fun and a good opportunity to get to know other students and the university.

The first semester finally started in the week following the OWO. (And mathematics at university is indeed very different from mathematics at school. But who would not have guessed ... ;-)) The first lectures in analysis and linear algebra were quite an unknown experience because of a whole bunch of new words and methods and the enormous number of proofs. (The usual pattern of a mathematics lecture is something like definition, lemma, proof, theorem, proof, proposition, proof, ... and then – once in a while – an example.) All this seemed a little bit confusing at the beginning, but once we had the first exercises and tutorials it became clear that everyone else felt the same about that and had similar problems. During the lecture our professors encouraged us not to give up and pointed out that we had to work and try to understand things very hard (“Work hardily in your exercises!”). Not to become frustrated, however, was not always that easy considering tutorial problems for example which seemed impossible to be solved without hints. There even were tutorial sessions – especially in analysis – where we could only solve one out of three problems within the given time. But this probably is quite normal and one should not be particularly discouraged by things like that.

As time went by, we all became more and more used to all this – to the concept of lectures and exercises at TU Darmstadt and to the very abstract and formal way one has to think and argue in mathematics. (Well, we were told that there also exist some formalisms whose origin is as follows: “People had that in mind and would never mix it up. . . But then came computer scientists. . .”) Moreover, we learned that in order to solve the exercise problems we really had to work together, that studying mathematics is indeed fun, and that “This is obvious!” usually will not be accepted as an explanation (After all we are neither physicists nor computer scientists but mathematicians!).

So now, after one year of studying mathematics, I can say that studying mathematics for sure is not easy and cannot be managed without effort, but nevertheless mathematics is really great and a lot of fun! Moreover, most prejudices about mathematicians are not at all true. Actually students of mathematics (at least at TU Darmstadt) are in general very nice, open-minded, and helpful people. And, honestly, sometimes it is actually fun to talk to other mathematicians using strange expressions “normal” people do not understand ;-).

Silke

Studying abroad - don't I do that already?

It is true that you as a foreign students are in a foreign country already, so we don't have to convince you that studying abroad is a good idea. But even if you want to study in Germany for quite a while, you might want to go to a third country to another university later on during your studies.

In general one can say that it is more difficult for foreign students to spend a year abroad, e.g. most of the financial support like the Erasmus program is available for inhabitants of the EU only. But still it is possible, so if you are interested don't hesitate and ask a lecturer or go to some of the information sessions on studying abroad that will be held in the Maths building during the year.

More information can be found on this page, but since its mainly for German students it is written in German: <http://www.mathematik.tu-darmstadt.de/Math-Net/Aussen/ausland.html>

For the german MCS-students, who like to spend one year abroad: Please have a look at the german part of this OWO-Info, where you can find some useful advices.

Ute

Some experiences: Trinity College, Dublin

It's been a little more than one month now since I came back to Germany after spending my year abroad in Dublin, Ireland. Did anything change during this time and why did I decide to study abroad? I hope this small article gives an answer...

The decision to go abroad was made pretty early. Even before beginning my studies in Darmstadt I already was determined to spend some time in a different country, but I didn't really know where to go until short before I left Germany. Firstly, the Imperial College in London was my first choice. But some others also applied for this specific university, and finally I went to Dublin. Looking back, all I can say is that whoever has the chance to go abroad should seize it.

Of course, in the beginning, everything is not only different but also hard. Living in an unknown city is tough in the first few weeks. One doesn't know where the next supermarket, butcher and so on are located. Probably every foreign student has those problems in the first place, but after two or three weeks they are gone and one begins to enjoy the stay.

After some time (believe it or not) the term and the lectures began. It became clear rather rapidly that sometimes it is easier to learn at home with the notes you are given than sitting in the lecture hall and listening to a lecturer using the overhead instead of the blackboard when talking about algebra, for example.

Another advantage with lectures that last only one hour is that we had enough time to travel and visit nearly every major tourist attraction Ireland has to offer. The landscape also offers sights from beautiful to spectacular, so I can understand everyone who misses the country and the people.

Finally and inevitable, there were some exams. They are somewhat all alike: You have to answer six out of nine questions. Usually, you have to state and prove some theorem that is given in the notes and/or in the lectures. There is not much time for thinking, so one is better off learning the notes by heart than trying to understand those things ;-). However, this probably only takes the last couple of weeks before the exams. But sometimes even students have to study :-).

The year abroad probably was one of the most valuable experiences in my life. I can only recommend to really accept any help the department has to offer and to go to a different university for a year. Maybe you consider going to Ireland now? Feel free to ask me about it ;-).

Andi

Study-advisor mathematics

Where to go with questions like

- “I did not pass the exam – what should I do?”
- “I would like to change from MCS Bachelor to Diplom or to Lehramt – is that possible?”

Of course, you can ask older students or students from the Fachschaft. And the professors and assistants will always try to help you when you ask them. Often they are available also outside the office hours.

But you can also come with your questions to the Studienberatung (study-advisor): to Reiner Liese or to me. Normally one can find at least one of us in our fixed office-hours tuesday and thursday 10:30 to 12:00. Reiner Liese in room 413 and me in room 424 (in the maths building S2|15). If you want to come at another time, you can contact us via eMail (studienberatung@mathematik.tu-darmstadt.de) and we can make an appointment. If your questions are connected with MCS, you can also see Ms. Cosulich (room 325, mcs@mathematik.tu-darmstadt.de).

And what are the other activities of the Studienberatung? Together with other members of the department Mathematics we organize information-days for secondary and high school students, we hold a special training for tutors, we create information material and we work active in the committees of the department. We want to support the department with the teaching and the learning by planning and organizing activities and propose new ideas. You want to know more? Then come and visit us.

Markus Helmerich (translated by Rafael)

Dr. Reiner Liese und Markus Helmerich
 Fachstudienberatung im Fachbereich Mathematik
 Schlossgartenstr. 7
 64289 Darmstadt
 Tel. 06151-163787 oder -162087
studienberatung@mathematik.tu-darmstadt.de

Important addresses

Maybe by now you know everything about maths at TUD, what you always wanted to know. Hopefully not ...

... because there are even more information booklets. Short ones and longer ones, with many, many details about the different possibilities of studying, some with less details – but colored. Furthermore there is a booklet about MCS in German and English, which you can take from the *Studienberatung* or the *Fachschaft*.

And there are of course lots of different websites:

- *Fachschaft Mathematik*: <http://www.mathebau.de>
- *Fachbereich Mathematik* (department):
<http://www.mathematik.tu-darmstadt.de>
- *Technische Universität Darmstadt*: <http://www.tu-darmstadt.de/index.en.html>
- *Akademisches Auslandsamt* (foreign students' office):
http://www.tu-darmstadt.de/aaa/index_en.tud

And here are the most important **addresses**:

Studienberatung Mathematik:

Schlossgartenstraße 7 (Mathebau, building S2-15)

Dr. Reiner Liese – room S2|15 413, Tel. 06151-162087

Markus Helmerich – room S2|15 424, Tel. 06151-163787

Dr. Werner Nickel – room S2|15 212, Tel. 06151-163487, *for MCS*

office hours: Tue & Thu, 10:30-12:00 and by arrangement

studienberatung@mathematik.tu-darmstadt.de

Fachschaft Mathe:

Schlossgartenstraße 7 (Mathebau, building S2-15)

Fachschaftsroom – S2|15 219, Tel. 06151-163701

fachschaft@mathematik.tu-darmstadt.de

<http://www.mathebau.de>

Zentrale Studienberatung (ZSB), study advice:

Hochschulstr. 1 (old main building, S1|03)

rooms 153, 154, 156, 158, 159 – Fax. 06151-162055

office hours: Tue, Wed, Thu 10:00-12:00, Wed 14:00-16:00, Thu 17:00-18:00 and by arrangement

zsb@zsb.tu-darmstadt.de

<http://www.zsb.tu-darmstadt.de>

Studentenwerk Darmstadt, housing:

Alexanderstraße 4 (Mensa)

Room 131, 1. floor – Tel. 06151-162710 (13:00-16:00), Fax. 06151-162110

office hours: Mon, Tue, Thu, Fri 9:00-12:00, Thu additionally 13:00-15:00

<http://www.studentenwerkdarmstadt.de/wohnen/>

Allgemeiner Studierendenausschuß (AStA, student union):

Hochschulstr. 1 (old main building, S1-03)

city office, around room 56 – Tel. 06151-162117

office hours: Mon-Fri 9:30-14:00

asta@asta.tu-darmstadt.de

<http://www.asta.tu-darmstadt.de>

Fachbereichsfrauenbeauftragte (women's representative of the department):

Schlossgartenstraße 7 (Mathebau, building S2|15)

Laura Cosulich – room S2|15 325, Tel. 06151-163740

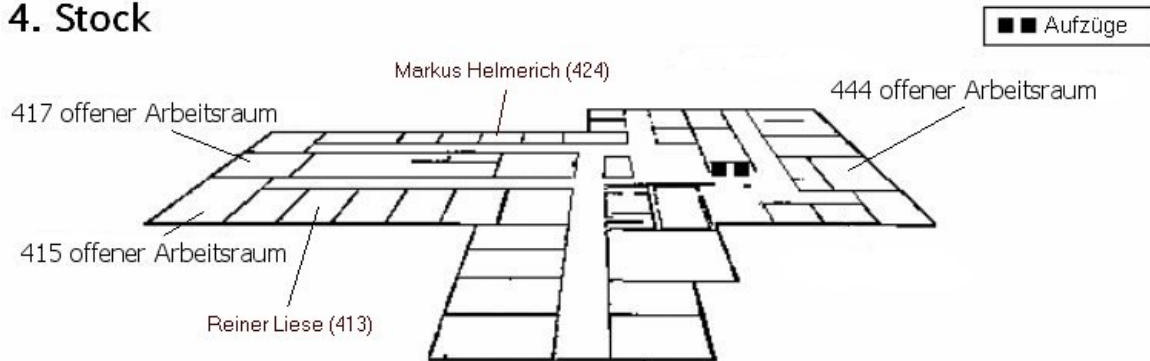
cosulich@mathematik.tu-darmstadt.de

<http://www.mathematik.tu-darmstadt.de/Math-Net/Frauen/Welcome.html>

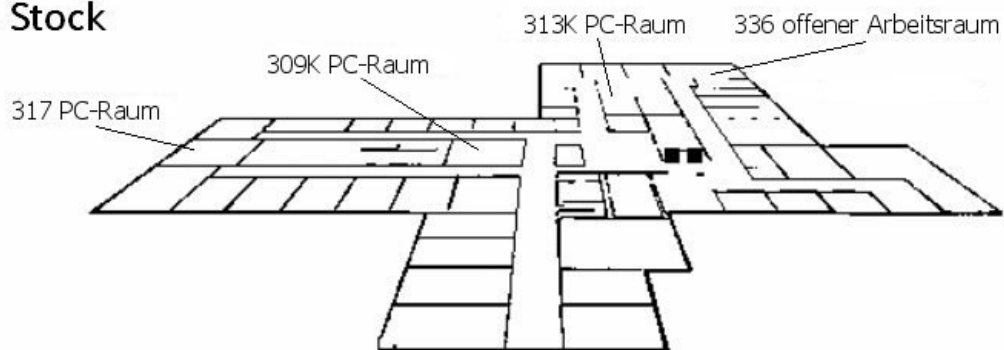
Survival

Floor plan of the maths building

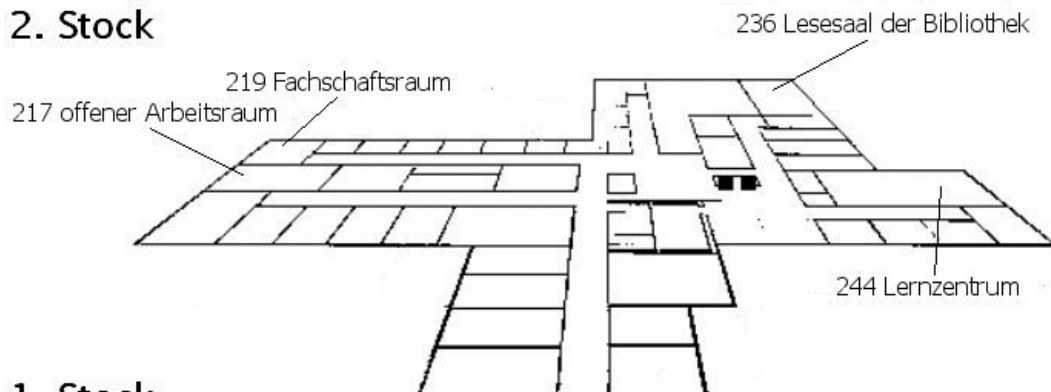
4. Stock



3. Stock



2. Stock



1. Stock

103 - 108 AG Fachdidaktik

Public traffic plan

...or: How to find the way from Station to University?

I'm sure this year (as every year) some of you are not living in Darmstadt (yet). Here are some hints for all those who arrive at Darmstadt main station (Hbf) and want to go to the campus of TU Darmstadt.

You can reach the **city-campus ("Innenstadt")** with the following lines: Tram #2 (direction Böllenfalltor), #3 (dir. Lichtenbergschule) and #5 (dir. Kranichstein), bus line "K" (dir. TU-Lichtwiese) and "H" (dir. Kesselhutweg). It's also possible to go there by a regional bus-lines, you can notice them by their four-digit numbers, but they don't drive so regular and have their own bus-stops. At the West-Side of the mainstation there is also the busline "F", but it's the only one from this side of the station to the city. If you have caught a seat inside a bus or a tram or you get a standing room (specially at morning they are very crowded), you have to go to the stops **Willy-Brand-Platz** (lines 3, 5, K) or **Schloss** (lines 2, 3, H, K). Now you have to go on by foot.

>>From Willy-Brand-Platz you have to go direction "Herrengarten" (the large green park), thereto you have to follow the only street with no rail. Crossing this park you can directly reach the campus. >>From the stop "Schloss" (castle) the way is just as simple: After walking through the castle (you have reached your goal if you want to visit courses there or the library inside the castle) you have to pass the pedestrian lights. Now you can see the administration-building of TU, thats the building with the Athene-sign on top. From this point the map of TUD has to help you, finally I don't now where you want to go.

Most of the busses and trams in Darmstadt are free of fare for you, all you need is your semester-ticket (your study-card, it includes the public-traffic-ticket) and a passport with a photo. As far as I know the bus "AIR" to the Frankfurt airport is the only exception, it costs an extra fee.

Indeed you have to know that the described situation is the "normal" one. In Darmstadt there are many road works at the moment, among other things with the tram-rail. Therefore it's possible that in october (nearly) everything is different (the article was written in july). In case of doubt you can still ask the driver or anyone else who is also waiting for a tram or a bus.

You can find Actual modifications on timetables and linemaps on <http://www.rmv.de>.

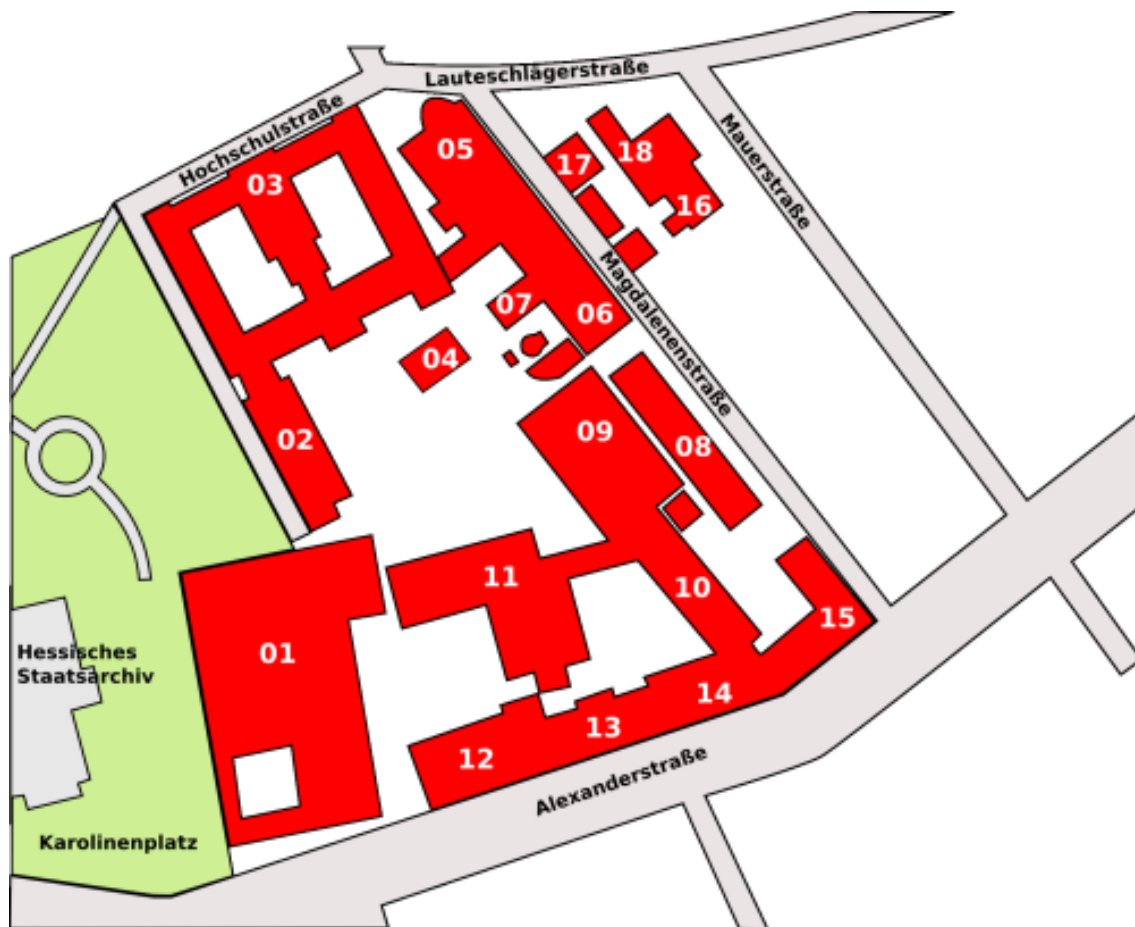
Rebecca

TUD maps

City (“Stadtmitte”) - section S2



City (“Stadtmitte”) - section S1



City (“Stadtmitte”) - section S3



Virtual Realities

Well, looks quite real, the math building, doesn't it? That much concrete just has to have a firm foundation in reality, right? But there's more to it: namely a homepage and a bunch of mailinglists one should know about.

So let's start our descent into the virtual realities hidden beneath the grey surface of the math building. First, there is the *Fachschaft's* **homepage** at <http://www.mathebau.de>. There you can find a list with important dates, an archive with old OWO-Infos & Mathe-Infos and much more. Just come and take a look.

Of course, the department of Mathematics does have a homepage, too, which you can find at <http://www.mathematik.tu-darmstadt.de>. It contains course materials for your lectures as well as pages with the email addresses of your professors and assistants.

Mailinglists

Next majordomo@mathematik.tu-darmstadt.de serves various **mailinglists** which are worth looking at. If you don't know how to use its services: Just send a mail to this very address with a single line in the message's body: "help". It will reply with a detailed english instruction set. But note that it won't work when you put it in the Subject line. Additional help can be found at <http://www.mathebau.de/files/majordomo.pdf>, if it still doesn't work.

Among the lists you can find there are the lists mcs2006@mathematik.tu-darmstadt.de and m2006@mathematik.tu-darmstadt.de – which, as the number 2006 suggests, are meant for you!

There are mailinglists for all semesters at the department, at least for the last couple of years. While mcs200?@mathematik.tu-darmstadt.de lists are for the MCS-students, the m200?@mathematik.tu-darmstadt.de and ms200?@mathematik.tu-darmstadt.de lists serve for the regular math students. One should write only in English on the mcs200?@mathematik.tu-darmstadt.de lists, so that everybody is able to understand them, because not all of us have sufficient knowledge in German, Bulgarian, Chinese, etc. (you get the idea, we hope).

If you would like to be notified in a quick and simple fashion about upcoming events like games evenings, music evenings, parties, and other important announcements by students for students, then you should subscribe to the wasgeht@mathematik.tu-darmstadt.de listⁱⁱ.

By the way: Please make sure that you only write to the lists if you actually want to reach everybody on the list. Private mails better remain private. So please check – for your own sake – the recipient list (in particular, the "To:" header) when replying to a mail sent via one of the lists.

E-Mail-addresses

Of course you can reach the *Fachschaft* by mail: fachschaft@mathebau.de.

But there are still 2 more mailing-lists; namely the owo@mathematik.tu-darmstadt.de and the eih@mathematik.tu-darmstadt.de ones, which, although mainly concerned with the organisation of the OWO and the EiHⁱⁱⁱ, are also the right place to ask questions about these specific events. Finally there are the addresses of the various AGs of the *Fachschaft* (see [page 53](#)):

ⁱⁱ In case you are wondering: "Was geht?" is German and roughly means: "What's going on?"

ⁱⁱⁱ Einführung ins Hauptstudium; OWO for grown-ups

- ball-ag@mathebau.de – for the maths ball
- fun-ag@mathebau.de – for the games evening
- musikabend@mathebau.de – for the music night
- zapf-ag@mathebau.de – for the Zapf-AG

Computer access in the math building

In the math building there are three public computer-pools – namely 309K, 313K and 317. But to be able to use them, you need to have a special user account. Unfortunately you get this account only after your Vordiplom. An exception is the account for the *Introduction to Numeric* lecture, which you can use for one semester only and which you have to share with other students.

So, if you want to read your mails or visit websites in the math building, you'll have to wait until your Hauptstudium, ask an elder student ... or you bring your own laptop and use the WLAN (more about this in the next section).

And if all this fails, then just walk a few steps and make use of the services of the ...

HRZ

The HRZ (*Hochschulrechenzentrum*, <http://www.tu-darmstadt.de/hrz/>) provides public computer-pools, which every student can use. In the city you can find them here: S1|02/030, S1|02/030a, S1|03/016. And there are two more at the Lichtwiese: L1|01/055 und L1|01/074.

To use these computers, every student gets a "user account", which has to be activated once. For this you receive a password (on the semester-sheet that you got sent along with your student ID etc.) allowing you to activate your HRZ-account. More information about this is available here: <http://www.tu-darmstadt.de/hrz/stud/>.

Besides being able to use the public HRZ-pools, you'll also get a special e-mail-address (SOMETHING@stud.tu-darmstadt.de) as well as the ability to use the HRZ-WLAN. And this is luckily available in the maths building. If you have a laptop with WLAN, then you can download the required VPN-client at <http://www.vpn.hrz.tu-darmstadt.de/> (for Windows, Linux and Mac OS X) and start surfing in the maths building.

Max

Study-fees

(general-)Study-fees & semester-contribution: Where is the difference?

Well, the semester-contribution has nothing to do with the study-fees. The semester-contribution is something you pay every semester as a student in order to be inscribed at a university. For the last summer-semester, the semester-contribution amounts to 189,10€. This amount consists of 57€ for the Studentenwerk (these are the people who run most of the student dorms and the Mensa for example), 81,87€ for the AStA (this contains the semester ticket for the trains and busses), 0,23 € funds and 50€ administrative costs. This amount of money had to be paid last semester, and one cannot be sure that it won't change for the next one (it might be raised).

And now what about these study-fees?

About one and a half year ago, a student, who would have been asked about study-fees, would have answered something like: "Study-fees? There are no Study-fees in Germany – you are talking about the semester-contribution, aren't you?" But no, today we are not talking about that. Today the answer to that same question would be very detailed.

Why?

Since January 1st 2004 there exists a new law in Hessen with the beautiful name Studienguthabengesetz (might be translated with something like: law of study-balance). Now let's take a look at the content of this rather new law:

- From now on the semester contribution contains the 50€ for administrative costs. But these 50€ do not enter the university budget, no, they enter the budget of the state Hessen.
- Students, who need a long time to finish their studies, will now have to pay between 500 and 900€ per semester.
- Second studies cost from now on between 500 and 1500€. Second studies are all studies that one starts after getting a degree in the first studies.

This law of the Koch & Co. administration in Hessen serves to fill holes in the state budget, which were caused by the state minister Koch and his predecessors. The universities do not gain a thing through this law, actually it is quite the contrary. The budgets for universities were cut down by 30 million euros.

What are the effects of the law, the Studienguthabengesetz?

For every student there exists from now on a study-balance, kind of a budget of semesters you are allowed to study before being considered a student, who takes too long studying. This balance is calculated like this: In case the number of semesters planned to finish your studies (*Regelstudienzeit*) is smaller than 8, you are given 3 more semesters to finish for free. For example if you are doing a bachelor studies, then the *Regelstudienzeit* is 6 semesters, therefore you are allowed to study $6+3=9$ semesters to study for free. If the *Regelstudienzeit*

is or equals 8 semesters, then to these will be added 4 semesters for your balance. A student in MCS Diplom therefore has a balance $9+4=13$ semesters. One is considered a student, who takes too long, when one has used up the semesters on one's balance. A maths student in the 16th semester, therefore would pay: The first 13 semesters just the semester-contribution., in the 14th semester 500€ of study-fees would be added, in the 15th already 700€ and in the 16th semester 900€. But not only students, who are considered taking too long to finish, will have to pay these very high fees, students who want to start a second study will pay as well. If for example you start after finishing with a bachelor in physics and want to study a different subject, then you have to pay for these second studies. This amounts to between 500€ and 1500€ per semester. But for that not being enough...

General Study-fees

In April the Hessen government introduced a general study-fee draft. This means every student has to pay an amount of 500€(1500 €for students from non-EU countrys) in addition to the semester contribution. According to the government this money is to be used for increasing the quality of teaching at universities and decrease the social injustice, because the nurse is paying the studies of the doctor's son with her tax. To secure the social compatibility one can take a credit (only for EU students), which you pay back when you get a job after studying. As this draft was introduced many protests came up, which still hold on (in contrast to the long-time study-fees in 2003). Hessen's constitution prohibits study-fees, but the CDU added the expert opinion of a high school professor from Berlin, who saw it legal because of the "social compatibility". Our AStA already sued against that law but wasn't successful, because you cannot sue against laws which are not passed yet. But the SPD and the Grüne will sue against this law again as soon as it passes. The first reading in the parliament was in July, the next will be in September. As long as we don't fight, this can become true very soon. You can get information about meetings of planning groups or upcoming demonstrations on the AStA Homepage: www.asta.tu-darmstadt.de. Also the webpage hessen.uebergebuhr.de offers you a lot of information about this topic (all in German). Worth mentioning is the www.corts-fanclub.de , a satirical fanclub of Hessen's minister for science and arts which was invented in Darmstadt. There are also many information (in German and French). And last but not least you can ask everybody in the Fachschaftsraum in the Mathebau (S2/15-219)

Patrick F., MarKus (translated by Nicole)

Money, money, money - how to finance your studies

If you decide to go to university, you will necessarily have to spend some thoughts on how to finance everything. In general there are certain **fixed expenses** which should be taken into consideration. First of all there is the semester contribution you have to pay, which amounts to 186.04 € for the winter semester 2005/2006. It is composed of 57 € going to the *Studentenwerk* – so they can i.e. maintain the mensa – 79.04 € for the AStA – student-body representatives elected by the students' parliament – including the *Semesterticket* and 50 € so called "administrative costs" for the Land Hessen. For more information on that topic read the article about study-fees and semester-contribution on [page 34](#).

The Semesterticket mentioned above is a nice thing, as it allows you to use any public transportation in the RMV^{iv} area. For more information on the ticket check out the web site of the AStA's *Verkehrsreferat* – <http://www.asta.tu-darmstadt.de/Referate/Verkehr/>.

Finding affordable **housing** in Darmstadt is close to impossible. Therefore it is imperative that you begin searching as soon as possible. Beside the student boarding houses you will barely find comparably cheap accommodation. There the prices range from 140 through 270 € including extra-costs – heating, water, etc. There is, however, a tiny little annoyance. In theory for most student homes there is a waiting list. Depending on demand expected waiting times range from a half a year up to two years. But in practice most rooms are given away by the will of the remaining flat-mates who have a right to select a person to share the apartment with them. For rooms in the Karlshof and the students' home in the Nieder-Ramstädter-Straße this is actually the official procedure. More information about the housing complexes can be found on the *Studentenwerk*'s web site – <http://www.tu-darmstadt.de/studentenwerk/> and in the booklet *Wegweiser für Studierende, i-Punkt*, which is distributed on the enrolment days.

If you would prefer renting a room from a private source, you will have to be prepared for prices ranging from 150 € for a sublet room up to 350 € for a single room apartment. If you get lucky you can find a room in a private apartment-sharing community. Everywhere in the Uni and also in the mensas there are wide billboards where people post room-offerings and -petitions. You are more likely to find something here than in the real estate columns of the local newspapers.

If you are free around noon you may want to go to the mensa for **lunch**. It is open on weekdays from 11 am to 2:30 pm (bistro from 8 am to 4 pm). The selection of meals you can choose from is manifold – let's not argue about quality. After all, it saves time when one does not need to cook oneself. A complete meal is about 2 €. So here one spends 40 to 50 € per month.

The **maths classes themselves** do not cost much. All you need is a pen, some paper, a ruler and occasionally a calculator. Sure enough, you will also need some books. But there are not many you really have to buy and there is also the university's library if you are looking for resources.

Besides all that you will also want some money to feed your refrigerator, maybe go to the movies every now and then, have fun, the usual. Summing it up, you are probably looking at total expenses of 500 to 600 €. If you want to get your degree within a reasonable period of time, you will not be able to earn such an amount of money beside your studies. That is why you have to clarify in advance, where the money is going to come from.

^{iv} RMV is a business venture of public transport providers

Unfortunately, the situation is pretty bad for foreigners, as they do not have many of the options German students have. So if you already know that you will not be able to come up with enough money, you should first of all check if there are any **scholarships** you can apply for in your own country. There may be more than you actually think. It is not always necessary to be a super-mind, in order to obtain one. In the era of globalisation, more and more governments, companies and other institutions support students who wish to go abroad.

For German students, whose parents have a low income, there is the possibility to get an interest free loan, called **BAföG**. Sadly, if you are not German, you will most likely not be eligible for BAföG. There are, however, exceptions to the rule. For example, if you are from a state within the European Union or if one of your parents has been working in Germany, there may be a possibility. If you think, that this might apply to you, then you should consult the Office for Educational Furtherance at the *Studentenwerk*. I dearly hope they speak English there. Their websites are unfortunately in German – <http://www.tu-darmstadt.de/studentenwerk/geld/>.

By the way, if you have difficulties getting things done because of language barriers, i.e. people refuse to speak English with you, then you should come to the AStA's office in the old main building. There is a group of foreign students – the *AusländerInnen-Ausschuss* who are there to help you out – <http://www.asta.tu-darmstadt.de/referate/auslaender/>.

The last resort is of course to find a **job** that does not consume too much of your time. If you are from a foreign country which is not a member in the European Union, you will only be allowed to work a certain number of days a year, but you should be told about that when you obtain your visa. If you come from a EU-state, this does not apply to you. Good jobs are of course jobs that are related to the study branch you are in, so in your particular case hopefully some flavour of maths. There are usually many jobs offered at the university departments. As a higher-level student there is the possibility of becoming a tutor for exercise classes. As a starter you will only get more or less boring office jobs – copying, typing, making coffee, whatever. For more information about jobs offered by the TU Darmstadt read the article about HiWi-Jobs on [page 62](#).

Particularly interesting for maths-students are jobs at the Fraunhofer Institute for Graphical Data Processing – <http://www.igd.fraunhofer.de>. They often look for students who are familiar with computers and programming.

What remains? Get enrolled! We will meet in the *Mathebau*.

Tobias

Medical help in Darmstadt

You are sick? You do not know where to go?

Here are a few addresses I have got as a recommendation:

Emergency doctor:

Darmstadt (06151) 89 66 69

Resident doctor:

Dr. med. Jutta Wellmann

Dieburgerstr.34

Phone: 7 60 60

Dr. Silvia Hoppe &
Osterod Muschiol E.
Schloßgartenstr. 67
Phone: 7 96 56

Dentist:

Dr. Karel Sedláček

Rheinstr. 7

Phone: 2 55 40

Hans-Georg Enger

Wittmannstr. 4

Phone: 6 24 88

Eye specialist:

Dr. med. Marina Hesse

Rheinstr. 5

Phone: 2 59 26

Dr. med. Frank-Dieter Engelbrecht

Frankfurterstr. 42

Phone: 2 36 47

Skin specialist:

Dr. Hans-Ludwig Zienau

Frankfurterstr.3

Phone: 29 34 43

Dr. med. C. G. Schirren

Wilhelminenstr. 13

Phone: 99 58 10

Ear, nose and throat specialist:

Dr. T. Pogodsky

Frankfurterstr. 3

Tel. 2 05 06

Gynaecologist:

Dr. Hildegard Gerlach-Schmidt

Heidelbergerstr. 13

Phone: 31 15 83

Dr. Gerhard Neuser

Dieburgerstr. 54

Phone: 7 60 98

Dr. med. Christine Hartmann

Saalbastr. 22

Phone: 99 70 72

Britta

Learning

Teaching and learning forms ...

...or “How do I learn mathematics here?”

In case you have never been to university before, the *Vorlesungsverzeichnis* can be quite confusing. It would be a lot easier to understand if you knew what is meant by *Vorlesung*, *Übung* or *Tutorium*. This article should give you an idea about what these things are ... There's one thing they all have in common: They are designed to help you learn mathematics. Somebody prepared the material to make it more accessible, and as it will always be a bit hard to get, everything is presented in lots of different forms, so that you can make the most of it. The most important difference to school as you know it is that nobody is forcing you to learn. You have to come and choose your way of getting your head round the stuff, and it's completely up to you *how* you do that. This also means nobody is coming after you if you don't, so it's your very own responsibility. Attendance is normally not obligatory. Maybe you are very smart and understand everything on first read, but more likely you will be just a normal student like most of your classmates and hence need all the help you can possibly get. Because maths really *is* hard.

The lecture (Vorlesung) ...

... is a monologue of the professor. Students try to follow, but as mortals like me and you seldomly understand everything. You are encouraged to ask questions, but sometimes you can be so lost it is not even possible to ask anything. Obviously, this is not a good thing, so once it happens, try to catch up as hard as you can! The lecture is what determines the speed of the course, so it's easiest to get lost here, and most important not to. Even if it might seem very tempting to stay in bed on a cold and dark monday morning, particularly if there are good lecture notes, you should be very disciplined if you do so. The course goes on, which means you easily get into the vicious circle of “I don't know what we did last time, so I can't possibly understand anything today anyway, so why should I go there?”, and before you can say knife the semester is over. Hence only bunk lectures if you actually do work for them instead, not if you might just manage to understand it but never do.

The exercise class (Übung) ...

... is the point where “understanding” happens for most people. Here you can try what you learned in the lectures with examples and different topics. Professors and assistants have prepared an exercise sheet, and a tutor, normally a senior student, helps you as little as possible, just that you don't get stuck. He doesn't do the exercises for you, but he is there to answer most of your questions or bring you to the right way ... You work in little teams, and it pays to be in a group which is roughly working at the same speed as you do, because everybody in the team has to understand the solution. Teamwork does *not* mean one does the work and explains it to the rest. This sort of teamwork has to be trained hard, but once

you get it, it is way more efficient than fighting all alone. Forget what bad experiences you might have had with teamwork in school, for you have different people round you here.

The homework (Hausaufgaben) ...

... is also given with the exercise sheet. Normally you have one week to work on the questions alone or in a group. It's important that you write down the solutions yourself, because this is where you are supposed to learn to write mathematically, explain your solution to a reader and express yourself precisely. Your tutor corrects the homework to show you where you could do better or what was good. So copying homework is just a waste of time, only good to annoy your tutor. There are even little credits which count for your exams to make the job go easier. But who does his homework regularly passes the exam anyway, and who only copies them fails even with the bonus points he might have. That's why many courses don't give any points for homework in the first place.

The office hour (Sprechstunde) ...

... is another opportunity to meet your tutor, ideally after you had a longer look at your homework. In case you get stuck, don't know where to start or have any questions about the lectures, don't hesitate to visit the office hour, it is not something like a surgery hour for badly wounded people (as the German name suggests) but meant for every normal student who needs a little hint.

The Orientierungskolloquium ...

... is designed to show you which fields of mathematics are worked on in the department. If you regularly visit the O-Kolloqs during your first two years, you should have a rough overview over the department, which enables you to choose subjects that suit you. The talks are mostly held in German, though.

The mentoring system ...

... should support you in your first year of studying. During OWO you'll be divided into classes of about 10 people, then a mentor (a professor or assistant) is assigned to you. The basic concept is: you will meet with your mentor a couple of times in the first two semesters to clarify your situation in studying and locate problems. The mentor shouldn't control you, he will support you by offering solutions and helping in your planning of studies.

The proseminar ...

... comes in different flavours. Most of the time you read small mathematical texts or questions in groups or alone and present them. Focus in the Proseminar is on unusual or interesting approaches to questions, and it is normally not associated with any course you already attend. The best here is to listen carefully when the different professors present what they plan to do in the proseminar they are offering.

Ha-Jü

Learning in the Mathebau

Rumors say that there are students who sometimes have to learn something for their studies. Let it be the postprocessing of lectures, the preparation of tests, homework or learning for the exams.

Not everyone can or wants to do this at home. The reasons can be loud neighbours having barbecue the third day in a row, not enough space on the table or simply “too much distraction”. You could barbecue with your neighbours. Besides, you’re on your own with maths at home. So why not consider the Mathebau?

It surely is not the aim of every math student to spend every day in the S2|15 building, which (we admit it) does not appear on the list of worldwide important architectural buildings. But the advantages are clear:

The five open collegiate work rooms (217, 336, 415, 417, 444) are ideal for learning; you can go there in small groups (or alone if you prefer) and do your work. Quiet and objective discussing is allowed, even desired, as long as it does not bother others.

A second reason is the LZM, the Lernzentrum Mathematik (room 244). Not only can you work here, you can also look at file folders with exercises and solutions (as long as the professor offers them). And there is the unbeaten opportunity to consult a tutor, he’s there for you daily in the semester. You can access the files when he is there.

Last but not least there is the library (room 240). So if you’re looking for a really quiet place to concentrate and learn, this could be a possibility. You have to list your name and cannot carry any bags inside, though. In exchange you have extensive literature.

Furthermore there are some natural benefits of the Mathebau: you meet many like-minded people, and can ask a professor or assistant (if they have got time). Besides, you can definitely find someone who is working on the same problem, so you can encourage each other if necessary.

So, take the Mathebau into your consideration.

Heho (translated by Stephan)

Aims of studying

The studies in one of the Diploma courses or “Mathematics with Computer Science” in the Department of Mathematics are supposed to prepare a student for the work as a mathematician in economic, industrial, administrative or scientific fields at an international level. Students shall be enabled to understand, to analyse independently and responsibly and to treat problems both mathematical and nonmathematical with mathematical methods.

With regard to content the following aims of studies are aspired:

- basic knowledge in analysis, geometry, algebra and stochastics, deeper knowledge in some special fields of mathematics
- skills in important mathematical methods and the knowledge that they have grown historically
- understanding how mathematics develops, changes its aims and what initiates mathematical work and makes it necessary
- the ability to use the language and methods of mathematics correctly and appropriately
- the ability to link mathematical contents and methods to nonmathematical circumstances and use them in mathematical models or for building models
- the ability to communicate and work with scientists of other disciplines and users of mathematics
- the ability to critically examine contents and methods of mathematics and their social consequences

In the course of studies students shall recognise mathematics as a rich cultural heritage and experience the fascination of mathematics.

In general the following properties are to be promoted:

- self-confidence and independence in scientific work
- patience, persistency and an willingness to perform in solving mathematical problems
- to be open for the contention with and the aim for new insights
- the willingness to cooperate and communicate as well as the pursuit of responsible actions

These objectives do not only aim at providing in-depth technical knowledge, but also at developing insights and skills which can give students the flexibility to cope with the requirements in their professional life.

In the course Mathematics with computer science the following aims are particularly emphasized:

- the ability to express oneself in a foreign language both orally and written and to communicate
- the ability and the language-specific skills to communicate and work with scientists from different cultural backgrounds
- knowledge of political, economical, social and historical circumstances in a different country
- getting to know different systems of education and science and being able to compare them

Ha-Jü

(Anti-)frustration article

If you read this article, it will have been almost exactly 2 years since I read my own OWO-Info. When I began my studies of maths, I assumed it to be pretty simple. I liked the subject, there couldn't be a better one at all! It could not be difficult, I had been one of the best in my Mathe-LK. So what could go wrong? Well, I was disabused ...

For there were many situations in those two semesters, when I wondered: Is this really the right thing to do? Will you be able to do this?

The first doubts came in my first trial lecture, Introduction to linear algebra by Prof. Herrmann. He came into the lecture theatre, saw, and confused ...

Full of energy and a bit scattered (may he forgive me this description), I could see him faintly – I was sitting in the back – wilding some geometric models. It was impossible for me to follow the speed of his sketch, left alone to follow his performance. I tried desperately, it could be important (I later on learned that it would be repeated again ...).

I resigned and had a look around, where I either saw people taking notes hectically, or I looked into faces as shocked as I was. I finally took heart and asked my neighbour if he understood anything. "No, not a word. You?" "No ..."

Of course, the "real" lectures did not always take place like that. But being always able to follow a lecture from the beginning to the end without problems is quite rare. You could be happy if you weren't taken down by the professor in the first quarter. He liked to skip some proofs because of their 'triviality', and you sat there not understanding anything. There were some exercises where you couldn't even figure out the task, which is "very" frustrating.

Probably it won't be very different for you in your first semester, but you will see: you'll get used to it, shocked faces turn into amused ones, in some lectures only half of the students take notes any more – it makes sense sometimes. And most important: You are not alone! I claim that 90% of your fellow sufferers, eh, fellow students, face the same problems. There are some people who find studies to be very simple, but they are few (and they still have to do something. There is a benefit of being "normal": the collective perplexity binds together, learning groups are made, you get to know many new people very fast. If you are not be able to do an exercise, or have a question about the script or something like that: go to the Mathebau! There is always someone who can help you, tutors, students from higher semesters, assistants or professors, most of them are willing to help. And I promise you, you will have questions!

Another important topic are tests. It is just wrong that they are designed to maximize the number of students failing. On the contrary: With the proper preparation, they can always be passed, sometimes surprisingly easily. What I mean: Even if you are fully convinced that you didn't learn enough and cannot do anything, take part in it regardlessly – perhaps you will be gladly surprised!

A last thing I want to hand over to you on your way: Don't be devastated if you don't always understand everything, nobody does. You will learn that you understand some proofs and sentences months after, when you know all interrelations. So don't give up too early, you will make it!

Recapitulating, I can say that studying maths is not easy, but it can be done ever, with fun. I hope you will come to the same conclusion in a year, perhaps you will write this article. Till then, enjoy it!

Daniel

Living

Sports offers

That the university provides some sports offers is a well known fact, but that does not hit the main point. One should know about the extensive, free-of-charge sports offers. First one should get the (free) programme that is available at the Hochschulsportzentrum (HSZ) in Alexanderstraße 25. Finding the HSZ is not that easy, but you can find a map online. Alternatively you can identify it by the red uni-sign at the front of the building. Generally one can bank on: If the door is open, so is the HSZ. You can also find the programme and much more information at <http://www.hsz-tud.de>.

First about the scenes of action:

One can do sport in many different places, the largest and best known being the Hochschulstadion. Here you can find soccer and tennis courts, a swimming pool and a running track as well as gyms. You get there with tram #9, getting off at stops Jahnstraße or Steinberg. While the student-id is usually checked at the entrance of the stadium (at least during the summer), it is seldomly the case in the sports centre.

But now the actual offers:

Actually every sports one can or cannot imagine is offered. From aerobic and "Schwitz Fit" over badminton and soccer to "exotics" like unicycle-hockey, canoe-polo or Ultimate Frisbee everything appears in the programme. Often there are special courses for beginners and advancers. In addition to these regular offers there are workshops like scuba diving or tap-dance. Most sports are free and do not require registration; for some a small fee of 10 to 20 € has to be paid at the HSZ. You can get further information about your sport from the Obleuten (contact-persons) who are listed in the programme. For some sports there are even international contests (IHM). Information about those can be obtained online at <http://www.adh.de> or from the Obleuten.

The most important possibilities are:

The best and highly used offer is the unheated outdoor swimming pool at the uni-stadium. In summerterm it is open between 15th of May and 31st of August and it is free. You just have to bring your student-ID and a swimming suit. Possibly a one Euro coin to use the lockers and a bottle of water as the prices at the shop are extreme (like at any outdoor pool). Here you can also find the gym (exercise room; you can do strength training here, e.g. weight lifting). Using it is not free but 25 € for a full year is very(!) cheap compared to a professional gyms. To get in you just have to knock at the door (that is not obvious...) or, if there is nobody in there, you have to go to the stadium keeper (around the left hand corner and 10m straight forward starting with your face to the door of the Kraftraum) and get the key. Everybody who is interested not in training strength but condition or who just likes jogging may try the Laufftreff. It offers several groups, starting points, speed possibilities etc. (details

in the programme). Of course it is also possible to do sports that need more than a swimming suit or a ball: You can get a tennis card or go to the driving range (located at the mechanical engineering building at the Lichtwiese). The range is newly built and belongs to the university. So with 2 € for 20 balls its prices are very reasonable. On the Sportgesundheitsamt's ground is a climbing tower which costs 10 € to use, but it is only allowed for experienced climbers.

Finally a remark about the TU-in-Bewegung-Tag: Each summerterm on the TU-moving-day several tournaments and fun-tournaments take place. For example the Ultramarathon (up to 12 runners share the distance of a real marathon), the beachvolleyball contest or the streetball tournament. The highlight is certainly the Fischerstechen, a kind of standing-on-surfboard-&-beating-each-other-with-cotton-bud.

Sebastian P., Susanne

The Bar-Guide

A small guide of pubs and bars in Darmstadt – we listed some locations and compared them, so you'll have something to do after your lectures. Have fun exploring!

Cocktail bars:

- **Bar Brasil** (Kopernikusplatz 1) Happy Hour: 7pm till 9pm
- **Havana Bar** (Lauteschlägerstr. 42) Caipi 6,30 €, Cola (0,2) 1,80 €, daily 5pm - 8pm, Mo. Pizza 3 €, Caipi 4 €
- **Pueblo** (Erbacher Str. 5)
- **Coyote Bar** (Waldspirale 8) Caipi 7 €, Coke 3 €, daily 5pm - 8pm, thursday from 17h, in the Hundertwasserhaus
- **Enchilada** (Kasinostr. 5) Magharitas for half the price from 11pm onwards
- **Che** (Kranichsteiner Str. 8) Caipi 6,80 €, daily 6pm - 8pm
- **AussieBar Corroboree** (Kasinostr. 4-6) Happy Hour: 6pm - 7pm, Cocktail Hour: 7pm - 8pm
- **Asia de Cuba** (Ludwigsplatz) comfortable Lounge
- **Cubana** (Donnersberggring 20)
- **Hemingway's Terraza** (Sandstr. 30) Very Hemingway-related

Cafes

- **603qm** (Alexanderstr. 2) Latte Macchiato 1,60 €, events almost every evening. By students for students.
- **Café Chaos** (Mühlstr. 36) Cake for free after midnight
- **Carpe Diem** (Schuhknechtstr. 1)
- **Linie 3** (Ludwigshöhstr. 1a) good milkcoffee (Milchkaffee)
- **Café Blue** (Lauteschläger Str. 28a) Latte Macchiato 2,60 €, Coke (0,2) 1,60 €
- **NT (Nachrichtentreff)** (Elisabethenstr. 20) Milkshake 2,30 €, best milkshake in town, 11.45am - 11.30pm hot meals
- **Café Godot** (Bessunger Str. 2)
- **KuK** (Carrée) very expensive breakfast, 12.30pm - 11.30pm hot meals
- **Bormuth-Café** (Marktplatz) good cake
- **Salve!** (Corner Elisabethen-Wilhelminenstr.) some other cafe
- **Kaminzimmer** (Elisabethenstr. 45) Chimneyroom, and it looks like that

- **Scaramouche** (Wilhelminenstr. 15) Beer (0,3) 2,30€
- **Marktcfé** (Marktplatz) Sometimes cheap bargain

Booze and beer gardens:

- **Biergarten Dieburger Strae** (Dieburger Str. 97) litre 5 €, Coke 2,50 €, Cozy and easy to attain (F-bus)
- **Bayrischer Biergarten** (Kastanienallee 4) H-bus or line 5, WLAN Hotspot
- **Biergarten Lichtwiese** (Mensa Lichtwiese) student-friendly
- **Rossdorfer Biergarten** (Industriestr. 18, Rossdorf) a little distance outside, line 5502
- **Brauerei Grohe** (Nieder-Ramstädter-Str. 3)
- **Braustübl** (Goebelstr. 7)
- **Ratskeller** (Marktplatz)
- **Kessel Darmstadt** (Kopernikusplatz)
- **Exil** (Karlshof) Karlshof's boozier

Dance halls:

- **Disco A5** (Gräfenhäuserstr. 75) line 5515 large capacity - disco, thursday lady's night (free entrance ladys, Tequila, Sombreros 1 €), 3 Floors
- **Catwalk (former Natrix)** (Landwehrstr. 89) large capacity - disco, line 3 towards main station; Black, Hip-Hop, RnB
- **Nachtcafé** (Carrée) House good clothing desired
- **Room 106** (Mainzer Str. 106) from House to Chill-out, quite expensive but cool
- **Odéon** (Frankfurt, Seilerstraße 34) large capacity - disco, thursdays students - day (5 €, for students 3 €, incl. midnightbuffet)
- **Centralstation** (Carrée) many events and well-known bands
- **Schlosskeller** (Schloss) groovy music, student-friendly www.schlosskeller.de
- **Goldene Krone** (Schustergasse 18) often local bands
- **Steinbruch Theater** (Odenwaldstr. 26) a little distance outside, Rock & Trash
- **Linie 9** (Griesheim) line 9 till "Markthalle", >from chilly to groovy, often an alternative
- **Stella** (Neckarstr.) small dance hall with a chilly roof terrace
- **Extasis** (Friedensplatz) Underground Hiphop-Club
- **Orange Club** (Ludwigsplatz) House Music

Döner:

- **Mak Döner** (Landgraf-Georg-Str., next to the Kuckucksnest) student-döner 3,00 €, sauce-bread 1,00 €, open till 4 h; best Döner in Darmstadt
- **XS-Döner** (Lauteschlägerstr.), student-döner 3,00 €, next to the Uni
- **Döner Cleopatra** (Schulstraße) Hähnchendöner 2,50 €, seat inside
- **Ye Babam Ye** (Marktplatz) Student's döner 2,50 € til 6pm, seat inside

Shisha Bars:

- **Arabesque** (Julius-Reiber-Str. 32) Shisha 4,00 €, Coke 2,00 €, Cocktails 5,10 - 7,50 €, long opening-times, huge range of tabac
- **Vacaciones** (City, above Burger King) Shisha 5,00 €, cozy chillout-lounge with mawkish tabacsmell
- **El Shisha** (Karlstr. -Tram 3)

Irish Pubs:

- **An Sibin** (Landgraf-Georg-Str. 25) Coke (0,2) 1,60 €, Guinness (0,5) 3,60 €, typical smoke-filled pub, tuesdays quiz, wednesdays open stage, thursdays karaoke
- **Ireland Pub** (Mauerstr. 22) Coke (0,2) 1,40 €, Guinness (0,5) 3,50 €, much guinness and good mood, Sa. - Th. 0,50 € discount on all drinks
- **Celtic Pub** (Mauerstr. 20) Coke (0,2) 1,50 €, beer (0,5) 2,60 €, 6pm - 8pm, Pizza 3 €; take along too

Taverns for students:

- **Hobbit** (Lauteschlägerstr. 3) Coke (0,2) 1,50 €, beer (0,3) 1,90 €, next to the uni and very cheap (eat a pizza ork)
- **Latino Apetito** (Soderstr. 21) very cheap, yummy mexican buritos
- **Osttangente** (Liebfrauenstr. 38) small wine tavern
- **Hotzenplotz** (Mauerstr.) pizza and escalope, very popular among some students
- **Café Hans** (Dieburger Str. 19) friendly and gay
- **Weststadtbar** (Mainzer Straße 106) cool flair in an old car hall, cocktails and more
- **Clusters** (Wilhelm-Leuchner-Str. 48) sunny couch tavern
- **Bambus** (Heinheimer Str.18) Coke (0,2) 1,30 €, cheap!

- **Planet Diner** (in front of Helia Kinos) American style bar, good burgers
- **Lokales** (Dieburger Str. 50) More than 100 different kinds of pizza

What's also happening:

- **Cinemaxx** (Goebelstr. 11) directly at the main station, brand-new blockbusters, Sneak Preview
- **Citydome** (Wilhelminenpassage) the downtown cinemas (Helia, Rex & Pali)
- **Studentenkino Audimax** (Audimax, Uni) 2,00 € per film, once 2,50 € for registration, blockbuster-cinema, extremely cheap with students-athmosphere
- **Staatstheater** (Marienplatz 2) huge theater with several houses
- **Halb-Neun-Theater** (Sandstraße 32) comedy & variété
- **Kikeriki Theater** (Bessunger Str. 88) variété
- **Comedy Hall** (Heidelberger Str. 131) comedy, often sold out for months
- **Bessunger Knabenschule** (Ludwigshöhstraße) different events and concerts
- **Centralstation** (Carrée) concerts, exhibitions, readings (www.centralstation-darmtadt.de)
- **Ticketshop** (Luisenplatz) tickets for concerts and events, infos for tourists & maps of the city
- **Oettinger Villa** (Karlshof) concerts, exhibitions, several (alternative) events

Marcus, Susanne, Markus

FreWe 2005 - How it all began

Just about three weeks of university and the Fachschaft makes our time more pleasant.

No doubt we're talking about the Fachschaft Mathematik and their wonderfully organized Freshers Weekend – a kind of get-to-know-each-other trip for meeting new friends within the freshers and beyond.

So on Friday we set forth for the metropolis of Stierhöfstetten, where all telephone numbers have, believe it or not, exactly three digits.

Just a few hours and some wrong turns later we met in the Freizeitzentrum Stierhöfstetten, where the merry task of writing our character sheets began. That works like this: a mostly highly inphotogenic picture of yourself is put on a sheet of paper with some pseudo-creative comments so that really everybody gets to know you.

After this taxing task it was time for some food and drink in order to be fit for the evening's activities. Those differed rather strongly from hut to hut and room to room, ranging from chilling with a beer to soft guitar sounds over sports like table football, table tennis or ballroom dancing to brilliant performances of the mind which were, quite typically for mathematicians, expressed in the form of some matches of Go or a group playing Therapy.

After a long night and a short period of deep sleep we awoke on saturday and (surely just due to lack of sleep!) swayed to the common room. There we found out that a lot of very nice people had gotten up even earlier in order to prepare breakfast or even to go jogging.

After breakfast everybody chose one of the morning's activities in order to do something useful with his or her time. Thus the first ideas and implementations for the mathematical Advent calender as well as the cookies for the assis-

tents & secretaries were created. It was also possible to get information about university politics or to help prepare lunch.



After the fancy, very delicious lunch we had some more activities like "natural studies with the Studienberatung", "a true mathematician must know Go", "merry chorusing" or "basketball with Sebastian".

As you might have noticed, the FreWe is completely made up of having fun and eating. You might know what came next. No, not dinner! A small afternoon snack of baked apples. The rest of the afternoon was spent with nice matches of pool, exciting games of Werewolf or some essential sleeping.

Afterwards we got a sample of the choir's abilities and a spontaneous theatre play in which a lot of fellow students downright outperformed themselves.

Later in the evening we gathered around the campfire where we were driven mad by some classical mathematician's problems ("he likes god, but he dislikes the devil!").

Also worth remembering is the brilliant feat of the guardian of the fire – also known as the Studienberatung: he really managed to put 10 whole marshmallow in his mouth (for a picture see page 14).



The next morning began with a solid brunch so that we were all invigorated in preparation for the final cleaning of the place. The tasks were distributed with mathematical precision and the house was cleaned in record time, as the owner acknowledged.

All that's left to say in the end is that it'll be hard to beat such a fantastic FreWe on an organisational level, and also on all other levels. I think I speak for everyone if I say: Orga, you were the best!

Of course praise and thanks go not only to the Orga but also to the guardian of the fire, the people who prepared breakfast, the helpers, the people who offered the different activities, the vocalists and guitarists, the Go- and Werewolf-players, the actors and grillmeisters, the drivers and people responsible for the luggage, the weather, hut number 4, the cooks and bakers, the sportsmen and thinkers and to all those I missed with this long list.

Nico, translated by Thilo

Organizing

The “Fachschaft”

The Fachschaft actually means all the students in one department. But practically *Fachschaft Mathematik* means a group of maths students who actively care for the interests of the maths students. Since this year there are three different lists on university elections, the *active Fachschaft*, the *radical Fachschaft* and *Bürokratie Weg!*. Sometimes they do have quite different views on things (if you want to know more about the difference, ask their members).

The Fachschaft is open for everybody and organizes its work democratically. Every tuesday at 6.17 pm we meet at the session of the Fachschaft (so called “Fachschaftssitzung”) at the Fachschaftsraum S2|15 219. Here, various topics concerning maths students and the department are discussed and organized. The Fachschaft people form their opinion, based on which the student representatives in the Fachbereichsrat (the most important committee of the department) and its sub-committees argue.

At the Fachschaftssitzung, there are topics which appear regularly like the organisation of the university information days (HiT, HoBIT), the orientation week OWO, the introduction into main studies (EiH), the preparation of the various committee sessions, the planning of the evaluation and much more. For the elections, the Fachschaft always presents candidates for the Fachbereichsrat. Of course, not all work can be done at the session itself. The session is more about not forgetting important topics and finding people who care about them and regularly present their results at the Fachschaftssitzung.

Central topics during the last semester were for example the room situation at the department, the employment of several new professors and junior professors, the evaluation of the department, the employment of new assistants, study-fees and the introduction of the new bachelor- and master-program.

Apart from the political work, recreational events are organized by the Fachschaft. These are for example parties, games evenings, the maths music events, the annual maths dance and excursions with and without Fachschafts work.

The current notes of the sessions can be found in the glass box near the Fachschaftsraum, and at the pin board in the ground floor. There you can also find information on dates of the various working groups (editors of the Mathe-Info, preparation of HIT/HoBIT, OWO, EiH, parties, maths music evening, maths dance, excursions, ...).

The Fachschaftsraum (S2|15 219) with cozy and fluffy sofas, a good old radio, a water boiler and a coffee machine, a small library, the weekly newspaper “Die Zeit”, the satirical magazine “Titanic” and much more is open 24/7 and invites all maths students to have a break for a cup of tea or coffee.

Everyone who’d like to take part in any of these activities is most cardially invited to drop by at a Fachschafts session! During the orientation week there will be a light-version of the “Fachschafts session” on tuesday at 6.00 pm. There the experienced Fachschaft people will happily welcome you and answer all your questions about the Fachschaft.

several authors

AGs of the Fachschaft

The AGs of the Fachschaft provide a platform for all those who are interested in spending their spare time together with other maths students and are moreover ready to play an active role there. There are no fixed memberships, whoever wants to participate is welcome to do so. Despite in each case a close group, possibly alternating in time, of mainly active people is likely to arise on its own. Intersections with the *usual Fachschaft* work are less common than e.g. with the organization of the OWO, but in certain areas existent. Traditionally there are the following two-and-a-half *Fachschaft*-AGs:

Fun-AG

The $f \cup \mathbb{N} - \forall g$ was re-founded in autumn 2002, after existing only apparently for some time. The main point is organizing games nights several times within term and even in the holidays. A games night takes place on a Tuesday most of the time and starts at about 7 pm. As the best place room 217 in maths building comes into view, that's a room open for students with tables and chairs, located right next to the *Fachschaft's* room. To that room one can withdraw in order to play more *comfortable* games. Next to it is the *Fachschaft's* bureau, where you can get beverages. Theoretically a games night would be possible even without the Fun-AG, but the Fun-AG takes the organizational part. On the one hand a new date is announced to the mailing lists and by flyers. On the other hand several games belong to the Fun-AG which are enjoyed to be played on games nights. Furthermore sweets are provided on the basis of donations. And a games rental is planned. New members are explicitly desired! There will be a games night during the OWO, it'll be on wednesday, 7 pm. The Fun-AG will be happy to welcome you.

Ball-AG

Once a year, more precisely in June, there is a maths ball, where one can dance in dinky dress to the music of a live band and admire the show parts. To make potential visitors fit in advance, in summer term dance courses are held in addition, and the tickets have to be sold as well. The amount of work at that very day such as preparation and cleaning as well as the frame program are just a small part of the whole organization. Of course all of that demands a good schedule and enough time. To this end the Ball-AG is re-founded every year. Some *old-timers* sit on that, however often times new faces can be seen, and more people are wanted to participate, in order to make the next maths ball a great success again.

Go

The players of Go meet every Monday at 7 pm in the *Fachschaft's* room and next door for laying patterns and conquering areas. Actually they do not form a proper AG as there is almost no intersection with the rest of *Fachschaft* both concerning organization and the people. Despite they are mentioned here because their weekly meetings are a special type of games night.

Josua (revised by Stephan)

University Policy

The Board of Students (Fachschaftsrat (FSR))

Student body (of the faculty), those are all students of the Faculty (of Mathematics) according to University Law. In reality “student body” speaks of those students who engage themselves in University Policy, who organize the OWOs (Orientation Weeks) or something else and/or who sometimes come to the meeting of the student body every Tuesday at 6:17 pm. The University Law considers five students to be elected into the Board of Students. At the Faculty of Mathematics it’s a little bit different to reality because many students undertake tasks without being elected into the FSR. The students who have been elected into the FSR are more likely contact persons who will help you with your questions.

The Faculty Council (Fachbereichsrat (FBR))

The Faculty Council as the mightiest committee of the faculty discusses important things, such as there are affairs of study (i.e. the planning of the courses in the coming semesters and the spreading of assistants to the lectures), occupation of councils (i.e. appointment commissions), affair of personnel (i.e. job posting, suggestions about occupation of professorships, adjustment of academic colleagues at the faculty), distribution of the faculty’s funds (Do we buy new computers, do we complete our library or do we use the money for anything different?), election of the dean [Dekan] who represents the faculty and leads the current business, election of the vice-dean [Prodekan] and the provost [Studiendekan] who build the deanery (with the dean - of course), distribution of the rooms, and so on... The Faculty Council is a sort of a parliament of the faculty.

Besides five students there are eleven professors, three academic and two administrative–technical assistants, that means the professors theoretically build the majority.

Parliament of Students (StuPa) and General Studying Committee (AStA)

The Parliament of Students is the legislative organ of the general student body. Its tasks are the election and supervision of the AStA and the budget’s passing of the student body. Besides it decides on the students’ affairs of principle (i.e. the statute or the term ticket). The Parliament of Student is elected by list election. It is worth while to visit the open sessions (they are always open). The representatives will be highly motivated if there are more interested students. Here also a high election turnout is important. More information to the General Studying Committee (AStA) can be found in the article on [page 56](#).

University Congregation and Senate (Universitätsversammlung und Senat)

The University Congregation (before it was called Highschool Congregation) is a sort of a university's parliament. It issues and changes the basic order and elects the president and vice-president of the university. Here the professors also have the absolute majority: Out of 61 they have 31 seats while the rest distributes on 15 students, 10 academic colleagues and five administrative-technical assistants. Another quite important issue of the University Congregation is the election of the Senate which consists of 11 professors (one of them is the president of the university), 4 students, 3 academic colleagues and 3 administrative-technical assistants. The Senate is a substantially smaller committee with more might. It decides on affairs of science and study (i.e. agreement on all faculties' conditions of study), affairs of research and the academic junior staff, affairs of budget and the university's development planning, university elections, information management (library and computers), affairs of jobs, goal agreement between Land Hesse [Land Hessen] and the university and between the university and the faculties. In the Senate the before mentioned 4 students represent the interests of nearly 17000 students. So you see, it's important to demonstrate interest with a high election turnout and to elect the four best students into this position. Because the four students are elected by the students of the University Congregation it is important which list you elect into it. The lists' way of acting and their estimation you can find on the traditional hustings (election campaign). Additional information, e.g. about the various lists, can be found on the internet, <http://www.asta.tu-darmstadt.de/cms/hopo/stupa/>.

Thilo Klinger, revised by Rafael & Stephan

AStA

Damn it, another abbreviation you don't know? But AStA is really way too long to write it unabreviated all the time: "Allgemeiner Studierenden-Ausschuss" (general student committee). The AStA is the representation of students on the university level and a public corporation.

The AStA not only does politics, but offers a lot of service. For example, one can buy an international student card (**ISIC**) at the AStA-office, cheaply rent a **bus** to move, as well as buy **stationery** at the *Lichtwiese*. Besides the deliberation of **BAFöG** and help with other social problems, the AStA furthermore freely offers a **legal advice** (lately a special office hour offering legal advice for foreigners has been added), a **job advice** office hour (how much am I allowed to earn, what are my rights, etc.) and advice for disabled people. But the AStA is also the centre of the student protests, they plan demonstrations, organize operating groups, print flyers and much more, where everybody is invited to help.

But the funny things in life are not forgotten – therefore the AStA has the **Schlosskeller** and **603qm** (the party hall where the OWO-party will be as well).

Politically, the AStA is involved in the committees on university level, such as senate, *Hochschulversammlung* (university assembly), etc. and represents there (together with other elected students) the interests of the students. And very often this is needed, because one can wait long for the day when the professors represent the interests of the students.

Well, that sounds like work for at least 20 people. It probably is, but the main work is at the moment done by five people, who are supported by a secretary and an executive board.

The structure of the AStA is appointed by the structure of the **Studentenparlament (StuPa)** (student parliament) because it is built of the biggest list. This year the list "FACHWERK" sends representatives to the AStA. Fortunately there are people who accept this arrogation, what's not sure at all.

That's a pity, because you can see: The AStA is one of the most important institutions on which most things are dependent on (for example: the **Fachschaft** gets the money from the AStA). So, if you're interested in assisting them, they would be glad about it.

If that is too much for you, you can indirectly support the AStA: with your vote! This is the minimum of support you can give the people who stand up for and represent your interests. That is also a confirmation for them whether you enjoyed their work or not.

The topic "election" is a very important these times for the TU because the work of the AStA needs much money. The AStA gets his funds from "Land Hessen", but this is a little bit tricky: If there is less than 25% electoral participation the funds will be drastically reduced. This means that projects like 603qm, bus-leasing, legal advice, ... and especially the "Semesterticket" run risk to be cancelled because the AStA cannot finance them anymore.

This year the result of the vote is: We've done it, we got 30,9% electoral participation and that's a little more than enough to retain our funds. But at the election last year there was an electoral participation of more than 40% throughout all students in Darmstadt, so it is kind of disappointing, especially when looking at the approaching study fees. We hope the interest in voting the student's representatives will raise again the next years, so read the next sentence carefully: Whenever there's a vote of the general student parliament, the AStA or something else, go to the election. Every vote is important and earns ready money.

So, enough recruiting you for elections and enough whining, it is not supposed to look like one cannot enjoy all that (actually one can).

Alech (revised by Patrick S.)

Committees within the department

You, who is reading this booklet, enrolled at the maths department as a new student. But what the hell does such a department do, how does it do that and who takes the decisions? Believe it or not, all of these questions will be answered in this article!

Everything that happens, happens in the committees.

The most important and most powerful committee at the department is the *Fachbereichsrat* (FBR). This is somehow the parliament of the department. All other committees of the department (see below) are appointed by the FBR and create proposals, whose basis on the FBR decides.

The FBR normally meets monthly during the semester. The members of the FBR are elected during the university elections. Every group elects their respective representatives, i.e. the students elect the student representatives, and so do the professors and assistants.

The FBR consists of 11 professors, 5 students, 3 scientific employees and 2 administrative-technical employees. The student representatives currently are Alexander "Alx" Kartzow, Andreas "Andi" Mars, Juha Ojansivu, Elisabeth "Elli" Jacobi and Krum Syarov.

The *Studienausschuss* (Study committee) has nine members: three professors, three assistants and three students. The *Studienausschuss* works for the dean's office and the FBR in creating proposals for them. These proposals concern the distribution of the lecturers to the courses as well as the planning and execution of the different courses. Furthermore it creates study plans as well as the teaching report of the department, cares about the course guidance and creates submissions for conditions of study and exams. The student representatives currently are Rebecca Kiesel, Silke Möser und Markus Schupp, but we will elect new representatives in the first Fachschaftssitzung in the new semester.

Main task of the *Forschungsausschuss* (research committee) is to propose the FBR the employment of new assistants. These are mostly accepted by the FBR. Besides, other things concerning research within the department are discussed here. Currently the student representative is Thilo Lutz.

The *Haushalts- und Rechnerausschuss* (finance and computer committee) cares about the finances of the department as well as about the computer situation. Within this committee, it is discussed how the money of the department is distributed to the different domains, such as tutors, teaching and research, the dean's office, the library, ... The committee cares about the computer situation of the department and the rules concerning computer use as well. Currently the student representative is Patrick Franz.

The *Diplomprüfungskommission* (Diplom exam committee) completes the diplom exams officially within the department. Furthermore it decides about proposals for distinction. It also arranges the approval of new minor subjects as well as examination subjects, prolongation of terms, etc. The rules of approval of exams taken abroad are discussed here as well. Currently the student representative is Andrea Peter.

The *Promotionsausschuss* (doctorate committee) is mainly concerned with the opening of doctorate proceedings as well as the acceptance of doctorate degrees. An application for doctorate grade is discussed in this committee. It also sets up the examination committee. In addition it deals with questions concerning the doctorate in general. Currently the student representative is Patrick Franz.

The *Perspektivkommission* (perspective committee) discusses topics that are concerned with the long-term plans of the department, i.e. creating new positions in the different working

groups or the weight of the different research groups in the committee. The student representatives currently are Nicole Nowak and Dieter Schuster.

Furthermore, there is a *Frauenförderkommission* (women sponsoring committee), which is mainly concerned with discussing and approving proposals of women on financial support or continuing education. The student representatives currently are Christian Burgmann and Rebecca Kiesel.

By law, 5 persons are elected into the *Fachschaftsrat (FSR)*, who are to be the active *Fachschaft*, i.e. they organize introductory and other cultural events. In reality, there are far more active *Fachschafter*, who are not elected. Thus, the election of the FSR was often not attached much importance to. This year, Wiebke Klement, Alexander "Alx" Kartzow, Stephan Petsch, Christian "Burgi" Burgmann and Elisabeth "Elli" Jacobi are the elected members of the *Fachschaftsrat*.

So all in all there are nine positions, where students can engage themselves besides the *Fachbereichsrat*. And we can only fill these positions either via a) plurality of offices or b) you. So if you are even only vaguely interested in engaging yourself to support the students in the committees within this department, come to the *Fachschaftssitzung* and let us tell you more about it.

Alech & Ben (revised by Cedric)

Life, university and all the rest

You social life may not be centered around university, but the TUD does provide you with a variety of interesting activities – not just lectures, exercise classes and exams. You'll also find lots of societies, offering a wide spectrum of activities, from artistic to academic, from religious to commercial, from sports to politics.

Let's have a look at the **artistic groups** first, and as there are many kinds of art, so there are many of creative groups, dealing with different artistic activities:

- **Schauspielstudio:** plays ranging from Shakespeare to Dürrenmatt (www.tud-schauspielstudio.de)
- **Filmkreis:** movies from Hollywood to Cannes (<http://www.filmkreis.de>)
- **Audiomax:** radio with topics covering everything from S1/01 to the cafeteria (<http://www.audiomax-campusradio.de>)
- **University orchestra:** music by our orchestra ... (<http://www.tu-darmstadt.de/hg/orchester/>)
- **University choir:** ... and the choir (<http://www.tu-darmstadt.de/hg/chor/>)

For **academic activities** you might want to look at the following societies:

- **AKASOL:** vehicles using solar energy ... (<http://www.akasol.de>)
- **AKAKRAFT:** ... or an Otto-Motor (<http://www.akakraft.hg.tu-darmstadt.de>)
- **AKAFLIEG:** gliders — from drawing board to runway (<http://www.akaflieg.tu-darmstadt.de>)

Then there are **religious groups** such as:

- **Evangelische Studierenden-Gemeinde:** Protestants ... (<http://www.esg-darmstadt.de>)
- **Katholische Hochschulgemeinde:** ... Catholics ... (<http://www.khg-darmstadt.de>)
- **Studentenmission in Deutschland:** and Christians in general (<http://www.smd-darmstadt.de>)

If you want to establish contacts to companies or do a traineeships in a foreign country:

- **Konaktiva:** fair where students meet companies (<http://www.konaktiva.tu-darmstadt.de/web/>)
- **AIESEC:** traineeships abroad (<http://www.aiesec.de/da>)

Information about **sports** and **politics** you'll find in other articles in this OWO-Info. And last but not least at <http://www.tu-darmstadt.de/hg/> there's a list of all university societies.

Andreas

Working

Mathematics and working life

Discover the Options

I studied Mathematics at TU Darmstadt from 1995 to 2003. At first sight this seems to be a very long period but the following article will show the reason. I just want to give an example of ways to gain practical experience and furthermore I want to describe how to get a job.

My second topic was Computer Science. In my third semester I got a Hiwi-Job at the "Fraunhofer Institut für Graphische Datenverarbeitung" (institute for graphical data processing). There is no direct connection between my side topic and that job, but I really could use some of the contents of computer science lectures (Java). At least I learned HTML at the age of Netscape 3 (!) and I experienced a first introduction into the work in front of a computer monitor although the job was quite near to university life.

In my first part of university education it became obvious to me that I wanted to take a look at other subjects. So I went to lectures of other subjects (e.g. Physics). On the other hand I planned to go to a foreign country after my "Vordiplom". I was not very happy with the way Computer Science developed so I changed my second subject to Philosophy. That's why my "Vordiplom" took a much longer time than I had wanted, I had no chance to go abroad.

Luckily there are other means to get experience. One of my first lectures after the Vordiplom was "Einführung in die graphische Datenverarbeitung" (Introduction into graphical data processing) by Prof. Hoschek. In that course we went to companies using Mathematics. There we were able to look at projects, and at the end we could even talk to some employees. Most of the times there was someone from the department of human resources who told us that the most important qualification is to gather experience in a job in the course of university education. Their image of someone starting to work after having several years of job experience is nearly impossible but you can get quite near to that.

If you study Mathematics at a "Fachhochschule" you have to spend two semesters in a company – so why not at our university? So I definitely wanted to take a practical training in a company. When I thought about when to take it, there were two possibilities. On the one hand I could spend three months of my semester holidays, on the other hand I could take a sabbatical and work for six months. There were several reasons why I chose the second one. The main reason was surely that it is easier to find a trainee job for the longer period. This sounds a bit paradox but it is easier to get into the content of the job. So I wrote five informal letters to companies I visited or which I searched online.

I received two phone calls. One of them sounded very interesting, so I started in Darmstadt at PROSTEP. Their main topic is the data transfer of three dimensional geometry. There are several subtopics which are very interesting for Mathematicians. I even quit my Hiwi job so that I could start working before my real training began. That secured my trainee job. What was left was to establish the prerequisites at university. Luckily the study advisor helped me. Officially a holiday semester can't be used for a training. That's why it was called "Preparation

of diploma exam". Finally I was able to work six months full time for PROSTEP and gather a lot of experience.

When I talked to other students or to colleagues in the company I was ensured how important it is to gather job experience in the course of university education. On the other hand, by working in the course of lectures (which was at least 15 hours – two complete days) and the holiday semester my education needed quite a long time. But the experience I gathered was to my point of view worth it. I saw that people who have a diploma with best marks after eight semester have sometimes fewer chances to get a job than someone who took twelve or thirteen semesters with a lot of job experience.

Nevertheless after my training I returned to "normal" study life and worked partly in a company. In the course of time the question came up which subject my thesis would have. Since I liked 3D-Geometry and I was in Prof. Reif's lecture cycle about spline-approximation, it was clear for me to choose a topic in that theme. Furthermore I worked on that in the company. In the end I found a theme for my thesis in the company which was monitored by Prof. Reif.

There are positive and negative effects when you write your thesis together with a company. On the one hand you get a subject which is down to earth. The company has an interest that the thesis will be finished successfully. On the other hand there are some dangers in that which should not be forgotten. It may happen quite easily that you are doing other work for the company. Furthermore if the company's project takes more time the thesis takes more time as well. That happened to me as well so that the deadline of my thesis was postponed.

Although there were these problems I am satisfied with my decision to take a thesis in the company. The training and that thesis gave me a job I work on for two years. Since I moved to Munich for private reasons, my field of work changed and I seldom work with Mathematics anymore. But my knowledge about geometry from my university education often helps me.

Of course you don't want to spend your whole life as a university student at a company but my suggestion is to take a look at things that differ from university. There are many companies in or near Darmstadt using interesting Mathematics. And when you finally search for a job it is a real help to know what this is all about.

In this spirit, happy studying

Jochen =8-) (ich@jochen-boy.de)

HiWis – student jobs at the university

What is the job of a HiWi?

The so-called “HiWis” are students, who work in different departments of the university. Their work is intellectual and demanding – most of them are involved into important research process, practical or theoretical development or various social or educational engagements, and, in this way, gaining precious professional experience in those areas. The range is truly vast – from aero-navigation to product development and applied software solutions, from technical text translation to being a tutor.

The concept of introducing the HiWi job is to stimulate further development of one’s skills by financing. The benefit is mutual, since the employers could share the burden of a certain project with the HiWi and still supervise its work – in this sense, inciting the feeling of moral responsibility in it. That’s why Germans call it “Unterstützung der Forschung und Lehre” – “Promotion of Research and Study”.

Why a HiWi at TUD?

The Technical University of Darmstadt holds one of the leading places in the engagement of professors, assistants and students into research and development not only in Germany, but worldwide as well. Therefore it is not too surprising that the idea of the HiWi is well implemented and commonly embraced in the university’s politics. Hundreds of students have jobs as HiWis, most of them even working at more than one place.

Why would I be interested in the HiWi job as such?

After you receive your visa from the Town Hall, you are allowed to work (only) 90 days per year, in case your home land is a non-member of the European Union. One of the many advantages of a HiWi’s job is the fact that its working days are not taken into account when considering these 90 days – that is, this somewhat heavy restriction does not apply to the HiWis. However, according to the university’s regulations, a HiWi cannot be engaged for more than 82 hours/month in working for the TUD, regardless of the number of places it works at. Why hours/month? Since one only has to cover those on his/her own judgment – i.e. one may distribute the working hours as one likes. Assume you have signed a contract for 30 hours/month. Then you may work three days ten hours each, or ten days three hours each, or 15 days two hours each or however you want – giving you considerable freedom and flexibility.

Even if the above does not apply to you, that is, you are German or you come from a land, which is a member of the European Union (then you do not have the 90-days work limit), the already mentioned advantages are definitely something to take into account.

The standard payment is 8.02 €/hour – certainly more that the average student’s payment in other areas. Whether one pays taxes along with his/her contract or not depends on one’s salary – if one earns more that 400 €/month (in the HiWi’s case – working 50 or more hours/month), one pays about 10% so-called “Rentenversicherung” (retirement insurance). Otherwise one receives the whole sum, denoted in the contract.

One further point to consider in the HiWi’s job is the opportunity to work at home and then present the result to your employer – if this is at all possible and if the employer approves of this, of course.

How to find a HiWi job?

As a starting point you should prepare your “Lebenslauf” (curriculum vitae, or the more popular term, “cv”). We recommend that, if you are uncertain about whether you are well-acquainted with the standards for writing it, look for a German friend of yours to help you with it. Beware that there are differences between the English and the German standards.

Next, try looking for a HiWi job offer in the Internet site of TUD (<http://www.tu-darmstadt.de>). Click on “Fachbereiche” following further links to the “Fachgebiete”. Most offers are only in German and, unfortunately, outdated. Therefore, be careful about the offers and try finding a date attached to it, the page, or the main page of the Fachbereich/Fachgebiet, at least. Once you have a list of all the offers you are interested in, write e-mails to the contact people for them. We recommend this option rather than calling on the phone directly – in the case with outdated offers this could cause quite a confusion to both sides. With mails, the worst thing that could happen is to have an e-mail unanswered.

Many people prefer going directly to the university’s buildings and look at the HiWi job offers hanged on the boards inside (those boards are already somewhat traditional to be seen around). Most of those offers are actual and ongoing; moreover, a sheet with a HiWi job offer often gives more information you would like to know than a plain internet page.

Assuming you already got an interview for the position – congratulations, you are not so far from getting the job itself! Be patient on the interviews, show interest in your to-be future task and be frank – do not lie about your capabilities just in order to receive the position desired and the dreamt-for-so-long contract. Lying would get you nowhere, say the wise.

Your initial contract could be for a short period of time (say, one to three months) and for not so many hours monthly. This is an usual test period, so that both you and your employer see whether you are suitable for this job or not. Showing effort and successful results leads to prolonging the contract and sometimes increasing your working hours, if the job becomes more demanding in its nature.

What documents do I need to complete my contract?

Let’s face it, Germany is about paperwork. So before even starting to think of *any* job, you should know what steps you should have completed first. We shall only outline these steps, more thorough information would be given to you by other articles in this issue or by people who are in charge of helping you with them.

Initially, you should register at the Einwohnermeldeamt. Then you should prolong your visa, so that you receive the permission to work 90 days/year (with the temporary visa you receive in your home country you cannot work at all here), if your land is in the European Union. Even if the latter does not apply to you, you still need your visa to be hired. You should already have a bank account, health insurance and the semester ticket.

The compulsory documents are:

- Vertrag – the contract itself, as well as the
- Fragebogen – a personal questionnaire you fill along with your contract. Do not be ashamed to ask your employers for help in filling these both – even Germans could get lost in some terms and formalities there.
- Passport – the employer needs to photocopy some of its pages
- Studienbescheinigung – you get those together with your semester ticket. Your employer could photocopy it or hold it for him/herself. Anyway, you should have enough of them.

- Lohnsteuerkarte – this one you get from the Einwohnermeldeamt. We *strongly* recommend taking Lohnsteuerkarte EINS and giving it to your employer. We would not like to go to details with the different Lohnsteuerkarten, but we would like to explain what happens to your card as soon as you have submitted it. The card, together with your other documents, is sent to Kassel, where, at the end of the year, your total income is calculated and displayed on it. Then you get it back at the end of the year (unless you demand to have it back earlier). In that way, you may find another HiWi job in the University and still have your Lohnsteuerkarte in Kassel, which is only for your comfort. From the beginning of 2005 the whole tax notation should become digital and the Lohnsteuerkarten would not be needed at all any more. Please contact the Einwohnermeldeamt for further information on that topic. And, one last point to mention – even if you have more than one HiWi job at a time, you still have to submit only one Lohnsteuerkarte. This is so, since your real employer is actually the state of Hessen, not your employer personally (in the sense we called him/her in this article). Though it *could* happen that, signing a second HiWi Vertrag, you receive a letter in your postbox, demanding that you submit your Lohnsteuerkarte in order to complete the contract. In this case just go to the contact person, mentioned in the letter, and tell him/her you already work as a HiWi and give him/her the number of the Fachbereich you already work in – this should settle the problem.
- Krankenkasse Mitgliedsbescheinigung – this is just a sheet you request from your health insurance company. As an alternative, your employer may just copy your insurance card that you should always carry with you.
- Sozialversicherung – if you have worked anywhere in Germany before you took on a HiWi job, you should have received your Sozialversicherungskarte, sent by post. You should fill the number on it in the Fragebogen. If the HiWi job is your first job at all here, in Germany, then you would be subscribed automatically by the authorities in Kassel to a default social insurance company. In that case, certainly, you do not have to submit any card at all. What you should do is fill out a so-called Sozialversicherungsfragebogen, which goes together with the contract.

Even if you happen to forget a document or two when going to sign the contract, this is not at all fatal – but you should submit them to your employer as soon as possible.

How do I get my salary?

The initial submission of the bunch of documents described above is a rather slow procedure and it may happen that you do not receive your first salary on time. But once the formalities are over, you would get the delayed salary together with the new one in your bank account.

You submit your bank account details (your Kontonummer and the Bankleitzahl, so make sure you know these by heart or at least carry a small sheet of paper with these number on it with you) when you sign the contract. Once all the already described formalities are overcome, you would start receiving your monthly salary in your bank account on the end of the month.

Finally, I, the author of this article would encourage you strongly to become a HiWi and I await your further questions about or comments on this article. Feel free to contact me at: lucho_a_d@abv.bg.

Lachezar Dimitrov

Miscellaneous

Glossar

11er-Bau old synonym for the old main building (S1|03)

2d old synonym for the Mathebau (S2|15)

AAA academic bureau for everything abroad (Akademisches Auslandsamt)

AG working group, where mathematicians with the same research interest work together

AllgAlg (or Alga) General algebra (Allgemeine Algebra)

ALZ Allgemeines Lernzentrum, building between the old main building and the mensa. The christmas party is mostly there (S1|04).

Ana Analysis, a part of mathematics, where everything is about limiting values (consistency, differentiation, integration etc.)

ASTa Allgemeiner Studierenden Ausschuss (<http://www.asta.tu-darmstadt.de>)

Audimax Auditorium Maximum, biggest lecture room in an university (S1|01 50). The building S101 is often called Audimax, too.

BaFöG Bundesausbildungsförderungsgesetz, the law under which german students can get money from the state to finance their studies

BK appointment committee (Berufungskommission)

BuM (also BaMa) Bachelor and Master, the new study programs that will replace the old diploma soon

CE Computational Engineering, a study program that does not belong to any department (but math and engineering take care of it), nobody knows what it really is

CMPE Computational Mechanical and Process Engineering, a study program from the department of engineering, nobody really knows what the difference to CE is

CS Computer Science, see also GdI (not to be confused with a popular ego-shooter)

DAAD Deutscher Akademischer Austausch Dienst

DGLn differential equation (a part of analysis)

DPK diploma examination committee

ella see LA

FA functional analysis

FaSeR Fachschaftsseminar

FB department

FBA formal concept analysis (formale Begriffsanalyse)

FBR Fachbereichsrat

FreWe Freshers' Weekend

FS Fachschaft

FSK Fachschaften conference: a meeting of all Fachschaften of TUD

FSR Fachschaftsrat

GdI basics of computer science (Grundlagen der Informatik)

Glossar What you're reading right now

HDA Hochschuldidaktische Arbeitsstelle

HIS Hochschul-Informations-Systeme GmbH

HiT university information days (HochschulInformationsTage)

HiWi Hilfswissenschaftler, students who earn some money as tutors in exercises. See the HiWi-article in this OWO-Info!

HLM Höheres Lehramt Mathematik (doesn't exist anymore, it's LAG now)

HoBIT university and job-information days (Hochschul- und BerufsInformationsTage)

HoPo university politics

HRG Hochschulrahmengesetz

HRZ The Hochschulrechenzentrum maintains the PC-Pools with computers which every student can access (see <http://www.hrz.tu-darmstadt.de>)

HSZ Hochschulsportzentrum

ImThA improvisation theatre evening

Inf informatics

KGB Karsten Große-Brauckmann (professor from AG 3)

Kolloq Kolloquium = a lecture of a professor (often from another university) that is mainly for professors and assistants

Köhlrsaal room where the Mathemusikabend takes place (S1|03 283)

KoMa conference of the german-speaking math-Fachschaften

LA linear algebra, another part of math

LAB lectureship for vocational schools

LAG lectureship for high schools

LHB old notation for the ULB

LiWi Lichtwiese

LZM Lernzentrum Mathematik

MaschBau engineering (Maschinenbau)

MCS Mathematics with Computer Science

MFI multiple integration (a part of analysis)

MMA Mathemusikabend

NF minor subject (Nebenfach)

Numa Numerik, numerical mathematics, math with numbers :-)

Omega always the last topic in a FS-Sitzung: pub crawl

O-Kolloq orientation colloquium = presentation of the AGs, so that all students gain an overview of math in their Grundstudium

OMO orientation month (for students from abroad)

OWO orientation week

PPK perspective committee

Pool a room filled with computers

PraMa practical mathematics (statistics und numerik)

PS Proseminar

RBG Rechnerbetriebsgruppe (belongs to the department of informatics, <http://www.informatik.tu-darmstadt.de/RBG/>)

Senat the highest elected committee, takes position to most changes in university

SnOWO seminar after the OWO

SoFA seminar without work for the Fachschaft

SPZ language center, offers language courses at no charge (<http://www.spz.tu-darmstadt.de>)

SS summer semester

StuGuG StudienGuthabenGesetz

StuPa parliament of students

StuWe Studentenwerk

sup Supremum (see inf)

SÜV seminar of the usual suspects

SWS Semesterwochenstunden, i.e. weekly hours

T_EX a system to set fonts, used by many mathematicians, they even make OWO-Infos with it

TH doesn't exist any more, we are a TU now!

TMA Technomathematik

TOP TagesOrdnungsPunkt (topic)

TUD Technische Universität Darmstadt

ULB Universitäts- und Landesbibliothek (the library in the castle)

WiMi scientific assistant (Wiss. Mitarbeiter)

WMA economical mathematics

WS winter semester

Zintl the new home of the FB Informatik (S2|02); in fact its called Piloty, but nobody knows

ZSB central students consultancy

Imprint

OWO-Info – The *Mathe-Info* for the orientation week 2006/2007, published by the *Fachschaft Mathematik* at TU Darmstadt

- **ISSN** 1612-6025
- **Printing:** Druckwerkstatt Kollektiv Darmstadt-Arheiligen
- **Print run:** 450
- **Closing date:** 01.08.2005
- **Editor:** Juha Ojansivu
- **Typesetting & Layout:** Thilo Schang
- **Cover:** Wiebke Klement
- **Contact:** owo-info@mathebau.de

Typeset using T_EX and ConT_EXt in:

- Zurich BT
- Boister

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- **Fachschafts meetings:** Every tuesday at 6.15 pm in the *Fachschafts*room. The transcript of the most recent meeting and other information are in the glassbox to the right of the *Fachschafts*office and near the entrance of the *Mathebau*. All transcripts can also be found on the internet at <http://forum.mathebau.de/>.