

Yet another good year...

WS 2003/2004

# OWO-INFO



# ENGLISH

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# Welcome

## Preface

There is a lot going on underneath.

I have been participating in different kinds of published media for a couple of years now and the first words coming up in my mind, whenever one mentions collecting and printing materials, are “hard”, “time-consuming” and “lack of motivation”.

From the reader’s point of view, you just grab your copy (absolutely free, in our case), read the stuff you are interested in and then leave it on the shelf for the next decade or so. The ones that would compare an issue to a previous one are rare. Those that would think over the whole process of gathering, editing, designing and publishing all that are even less.

So I, for one, would like to say “Thank you” to everyone who participated in the present OWO-Info. There were some who lost their motivation. Heck, for me myself it proved to be quite a problem concentrating on drawing childish cartoons while Beyonce was shakin’ her sweet chocolate boo in her latest video flick. Others did what they promised to do. Some even took extra burden on their shoulders and outdid themselves. And most of us certainly would like to walk the way again.

But all of us, who stayed focused on our task and made it through, deserve this “Thank you”. Still frustrated, you may just not fully realize the value of this whole issue the first time you read it. Then, one day, in an year or so, you would pick it up and slap your forehead. Yep, it will happen, trust me.

We had two aims in front of us when we started the whole thing. Firstly, we wanted this OWO-Info to be the best one done so far. Hell yeah it is! Second, we wanted that the materials published are here to stay and be reused as much as possible in the future issues. A typical example is Ute’s long-lived “anti-frustration” article, which has probably been reprinted as much as my underwear changed colour in Karlshof’s washing machines. We all wanted that our creations come up to that. Not the underwear, the article, I mean. Oh, damn, enough with the humble tra-la-la already, we wanted them even *better!*

But you, dear Reader, are the one to judge on that. I, myself, am awfully grateful that I got the chance to write those lines. In this very issue, this year, just for you. Thank you with being so patient with my jabbering and have fun while reading. You deserve it. All of it.

Yours,



## Professors and assistants

### Analysis I

Dear Student of Mathematics with Computer Science!

My name is Reinhard Farwig, and I will teach the Analysis I and Analysis II classes for MCS and for CE in the forthcoming winter and summer term. On behalf of my co-workers Katrin Krohne and Helmut Abels I would like to welcome you to your first semester in Mathematics at Darmstadt University of Technology.

More than 20 years ago I studied Mathematics (major) and Physics at the University of Münster. After my diploma I worked in different fields of mathematics at three different places, namely in Bonn, Paderborn and Aachen before coming to Darmstadt. Nowadays my field of research concerns problems of real world problems which are described by so-called partial differential equations. In particular, together with several members of the Research Group 6 *Partial Differential Equations and Applications* (AG 6), we are working on the analysis of equations of fluid dynamics. It is interesting to note that there exists a famous problem in this field, open since 1934. A price of \$ 1,000,000 has been awarded for the solution of this problem. But, as I guess, this problem is still beyond the scope of these classes...

Although a university course on mathematics starts from the very beginning, namely with the introduction of natural, rational and real numbers, studying mathematics is not easy. Therefore I strongly recommend to work steadily, repeat the material of the lectures regularly, solve the weekly problems and discuss mathematics with your fellow students. For further problems, for proposals and – if necessary – for criticism, be so free and contact my co-workers, the students running the tutorials or problem sessions, and myself during office hours or directly after class. To tell the truth, we depend on your feedback as a help to improve our teaching.

I wish you good success in Analysis as well as in Linear Algebra and in Computer Science.



Reinhard Farwig

*Reinhard Farwig*

## Analysis I – Assistants

Dear Students,

I also like to welcome you and wish you a good start in your new study. Katrin Krohne and I, Helmut Abels, are the assistants of Mr. Farwig in the course Analysis I for MCS. Katrin has studied Math at the University of Mainz and is finishing her Diploma now (or has already finished – depending on the time you read this). She will start working in our working group on partial differential equations in the middle of October. I have studied in Darmstadt since 1996 with a short break for a visit of the University of Copenhagen during my PhD-studies. Recently, I finished my PhD. You can find us in our offices 404 and 405. Moreover, you can also contact us via E-Mail ([abels@mathematik.tu-darmstadt.de](mailto:abels@mathematik.tu-darmstadt.de) and (expected) [krohne@mathematik.tu-darmstadt.de](mailto:krohne@mathematik.tu-darmstadt.de)).



Helmut Abels



Katrin Krohne

We assistants organize the lab and tutorial classes and are responsible for the exercise sheets. – Therefore, if you suffer too much (or too little) because of the difficulty of the exercise, please tell us! – As Mr. Farwig already told you, we are depending on your feedback to run a good course.

But it also depends on yourselves to use all the offers here at the department. Besides the classes and the tutorial and lab sessions, you can come to our offices whenever you have questions. You can meet with other students in the working rooms to discuss Math (and other topics). And there are many other opportunities you will learn more about during the OWO.

So, we are looking forward to see you in the autumn term!

*Helmut Abels*

## Brief Self-Introduction – New in Darmstadt: Martin Otto

After studying Mathematics and Physics in Freiburg and Cambridge, I obtained degrees in Physics and Mathematics. (My thesis was in mathematical physics, involving differential geometry and mechanics on manifolds.) Continuing at Freiburg I studied Mathematical Logic with H.-D. Ebbinghaus, receiving a PhD in Mathematics from Freiburg University in 1990.

Following an appointment as assistant at Freiburg I moved to RWTH Aachen Technical University to join the group on Mathematical Foundations of Computer Science of E. Grädel. Habilitation in Mathematics at RWTH in 1996.

Since 1999 I have been teaching in the Computer Science Department at the University of Wales Swansea (as lecturer, then reader).

Together with my family we are about to move to Darmstadt in time for the start of the new academic year. My wife who studied Mathematics in Freiburg and Warwick, is a secondary school teacher. Our two children currently speak English and German and a tiny bit of Welsh.

I am looking forward to teaching the first-year course in Linear Algebra this coming academic year in English. (I could also do it in German, but not Welsh.)

*Times abroad.* Cambridge (Part III of the Mathematical Tripos, 1982/83); UC Santa Cruz and Stanford (1997/98); University of Wales Swansea (since 1999).

Speaking of my own experience, I can only recommend to anyone to use any opportunity to experience another country and another way of life close-up; we feel we have profited greatly from our longer periods in the US and the UK, starting with our years abroad when we were students.

*Subject area.* Mathematical logic, foundational and in applications; in particular the mathematical foundations of Computer Science; Logic, model theory and computation, links between logic and complexity, algorithmic issues in logic and model theory.

Generally speaking, I have always been fascinated by the connections between Mathematics and cognate disciplines, ranging from the conceptual and methodological to concrete technical applications. For my own current subject area these are primarily the links between logic and computation. I will further pursue these interests in Darmstadt where I will join the group on Logic and Mathematical Foundations of Computer Science.

Within the field of Mathematical Logic, I have focused on questions of model theory and more specifically on the model theory of finite structures. Model



Martin Otto

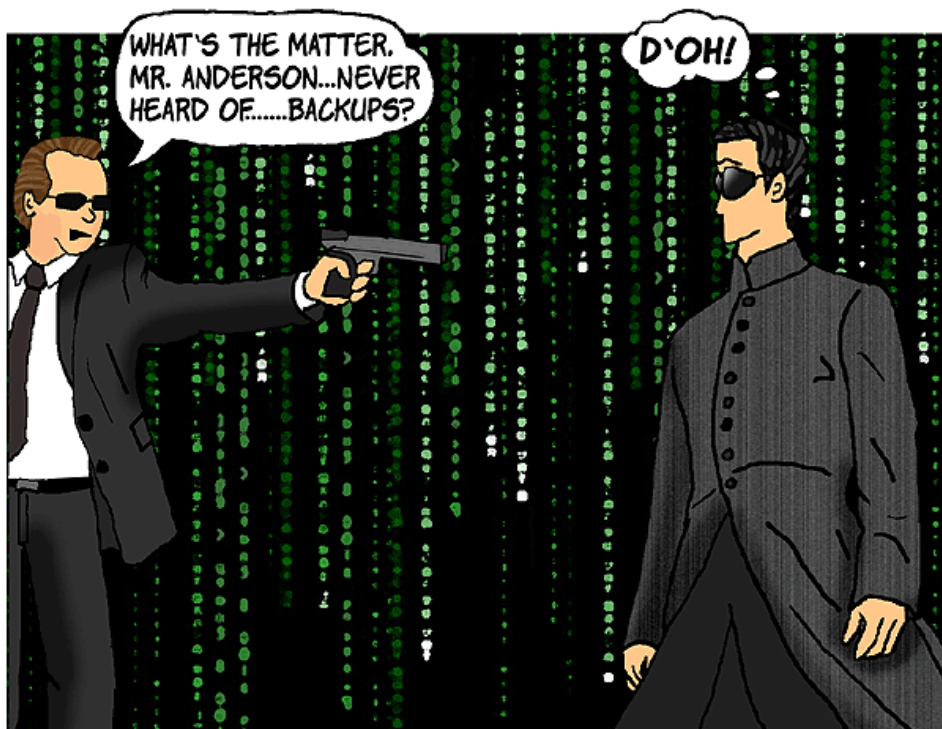


theory in general is about the relationship between syntax and semantics of formal logical systems; with finite model theory the emphasis is on the restriction to just finite (rather than finite or infinite) structures. This restriction can be of crucial importance in some application domains, notably for instance in a computational context. Maybe rather surprisingly, the restriction to just finite models leads to a methodologically very different approach, creating many genuinely new interesting questions. Amongst the most important model theoretic techniques that can be used are combinatorial games for the investigation of the expressive power of logical formalisms. Obviously finite combinatorics plays an important role in the construction and analysis of finite structures.

*Other interests.* Visual arts (especially contemporary; actively I do a bit of graphics and photography), literature, cooking (of an experimental nature), nature and outdoor activities (I guess we are going to miss the sea; Darmstadt would be described as “land-locked” by our Swansea friends).

*Martin Otto*

**A LINE BEGGING TO BE SAID IN "THE MATRIX RELOADED"**



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## Introduction to Computer Science (MCS&CE): Dr. Thomas Kühne

I was born in Frankfurt am Main in 1965, i.e. right in the middle of a decade that brought mankind such revolutionary and elegant inventions such as the Concorde airplane<sup>i</sup>, the Citroën DS motorcar<sup>ii</sup>, Simula 67<sup>iii</sup>, and many more inventions and events, not to forget man's first landing on the moon.

Whether I was able to take some of the spirit of these revolutionary times with me, remains doubtful but certainly I'm not as politically outspoken as you may expect from a child of the sixties. I guess this is largely due to the fact that the majority of today's politicians are happy to even defy the laws of logic in order to make a point about the political opponent.

Logic, however, here in the sense of having rational thoughts and making sound conclusions has always been one of the few things I believed in and felt attracted to. That was probably why I started to develop an interest in computers at a time most people thought about them as overgrown calculators with no real practical use. I myself asked my friend, who told me about his plans to buy a computer: "Why don't you use the money for a motorbike instead?". After spending many hours with him, typing in games, developing our own games, and writing little helping programs for family members, I knew the answer: No other *toy* allowed the use of creativity and rational planning to such an extent as this *instrument whose music is ideas*—a phrase coined by Alan Kay, one of the fathers of Smalltalk, the most elegant object-oriented language to date.

It was only natural for me to study computer science—although I was heavily tempted by Physics as well, which I could luckily choose as a secondary subject—and subsequently stay in the academic world as a researcher in the group of Prof. Henhagl at the TUD. My work during this time (1992-1997) led to my doctoral thesis *A Functional Pattern System for Object-Oriented Programming*, which showed how to reap the advantages of the quite mathematically inspired world of functional programming using existing imperative object-oriented programming languages. I then moved to Stafford, England in 1997, partially since I wanted to work as a Lecturer, but also because I wanted to experience a different country, culture, and type of people. I'll always fondly remember the friendliness and sense of humour of the English people and only reluctantly left England in 1999 to do exciting research with Colin Atkinson at the University of Kaiserslautern.



Dr. Thomas Kühne

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<sup>i</sup> The first and only passenger plane to fly faster than the speed of sound.

<sup>ii</sup> Ahead of its time by innovations like hydraulic suspension, aerodynamic body, frameless windows, etc.

<sup>iii</sup> The first object-oriented programming language.



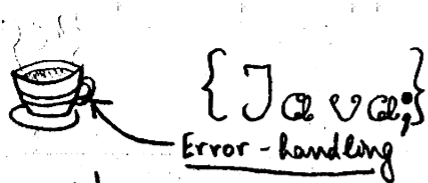
Colin Atkinson and I have been working in the area of metamodeling, a subject that branches into philosophy and mathematics, just as well as being of practical relevance in the field of computer science. Broadly speaking the subject is about hierarchies of description levels but cannot be done justice in just a few lines of text. Please visit my homepage if you want to learn more about it.

After several acting professorships at TUD (2001/2002) and the University of Mannheim (2002) I'm now a so called *Juniorprofessor* at the TUD. I hope you will enjoy my MCS I lectures and I will certainly strive to make the material as accessible as possible to you. On the other hand, I'll expect a willingness on your behalf to accept—perhaps—unfamiliar ways of thinking and be proactive when it comes to catching up on material. From school we unfortunately usually take away the idea that learning consists of sitting back, passively listening to the teacher, and blaming the latter if the grades are not as we wished them to be. This could not be further from the truth. In particular studying is about actively incorporating new material into your existing thinking structures, using the lectures just as one of many available resources, such as exercises, books, etc. All I can do is to support you in that process, but I certainly cannot relieve you from the burden of doing it yourself. Even the fruitful sixties did not create the *Nürnberg funnel*, but even though I sometimes wished I could take in knowledge in such an effortless manner, I would not want to be without the joy one has when a new hard-earned insight is born in the universe of one's thoughts.

Thomas Kühne



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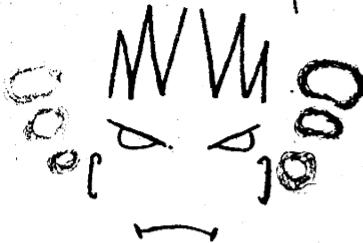


Null Pointer Exception



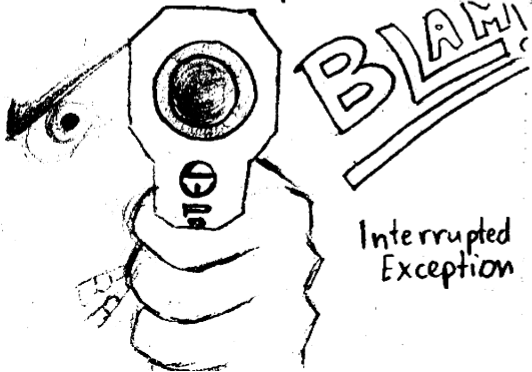
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> java MyProg\_

Array Out Of Bound Exception



> java MyProg

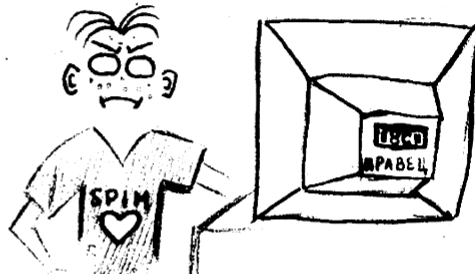
Internal Error Exception



idea, plot, character design,  
script, music, visual FX  
sound track, digital remasters  
& other stuff: LWP @ 2k3

The Most Famous Outputs in CS I & II and their effect on normal people

Kick me in THE @\$-emblem  
#60,000,00 BC



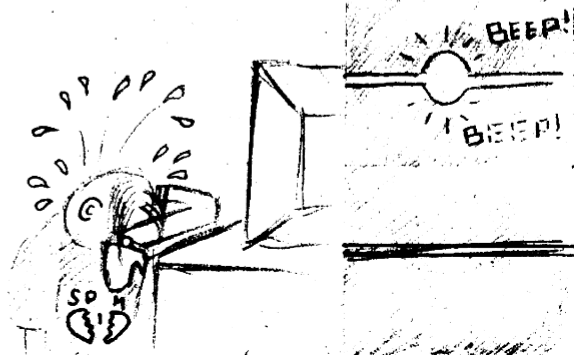
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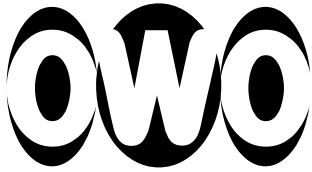


My nipples went to France  
and I do the cha-cha!!!



Congratulations! You have just erased all  
the data on your hard disks! Have a nice day!!





## OWO – What the heck is OWO?

Well, OWO is the shortcut related to *OrientierungsWoche* which means simply a week of getting tips getting the studies started.

In the OWO the *Fachschaft* Mathematics (roughly translated: students who help other students of mathematics) shows hints to the newcomers and things you have to know, little tricks solving serious problems and so on.

We tell you how your schedule is in the first semester and we try to tell you how you can create your own schedule for the next semesters. But don't panic, there are students in higher semesters who can not create a schedule on their own.

You will hear Analysis I and Linear Algebra I in the OWO. It's the real lecture with the real professors cause OWO will also bring lectures to students. Because if you have had a question related to lectures, you would have to look for us... but if it is in the OWO you can ask us directly.

If you study Mathematics Dipl. you have to choose another subject. What subjects you can choose and what you can expect from which subject we will explain to you at the *Nebenfachbörse*.

Don't expect mathematics are without of fun ... well show ya

Ok. For all of those readers who want facts, facts, facts. Here the results of the brainstorming "What's da aim of OWO?": Now *that* are some of our aims what OWO should bring to you.

- Tips for the everyday life of a student
- Why do you study mathematics?
- Show you, studying mathematics doesn't lack any fun
- You don't have to be frightened by professors, assistants or older students
- You even won't have to be frightened anyway
- Get to know to the building of Mathematics (*Mathebau*) (it's the ugly cube across the street)

- Showing you where you find things you need and where you can ask questions (and get the right answers)
- schedule
- Diplom + MCS + CE + HLM + Erasmus (exchange students and so on)
- Subjects you have to choose except mathematics
- Exams ... when, what and who to tell
- OWO is good, OWO must be, will you join the OWO-Team?
- Get to know the university and Darmstadt
- Uni-Organisation (Mathebau and Uni-administration)
- Information about the mathschoir, musicevening, maths ball
- Take a look into the future
- Knowing things which have to be planned early (a semester in a foreign country, Vordiplom ...)

So I hope, you will enjoy the OWO and I hope it *does* help you. Have a nice stay in Darmstadt and a successful life as mathematics student.

So long.

*Time*



# Commented OWO timetable

## OWO-timetable (20 Oct – 24 Oct 2003)

	Monday	Tuesday	Wednesday	Thursday	Friday
from 08:00 to 09:40	reception by the president of TUD, trial lecture S101/053	(from 08:30 on) breakfast	(from 08:30 to 10:10) trial exercise	(from 08:30 on) breakfast	
from 09:50 to 11:30	KG 1: getting known, OWO-timetable, "Why maths?"	KG 2: "How do I learn maths?"; ways of teaching and learning	(from 10:20 on) KG 3: getting to know Mathebau	trial tutorial	KG 5: small 'reading night', OWO-feedback
from 11:40 to 13:20	<i>lunchtime</i>	<i>lunchtime</i>	<i>lunchtime</i>	(from 11:30 to 12:00) KG 4: trial exercise	<i>brunch</i>
from 13:30 to 15:10	time table, plan of exams	infos on subsids (Dipl./LA)	(from circa 14:00 on) guided tour through the buildings of the subsids	getting to know the university	(from circa 14:00 on) feet-balls-match
from 15:20 to 17:00		short films in Filmkreis		presentation of the proseminars, having tea with the mentors	
from 17:00 on	Fachschaft meeting	(from circa 19:00 on) pub-crawl	(from 18:00 on) playing games in Mathebau	(from 19:00 on) OWO-theatre, OWO-party	



## Monday

Monday starts with a **reception** by the president of the TU, the dean of the department as well as your OWO-tutors. Thereafter, you can enjoy your first lecture. Then, there is the first OWO small group (KG – *Kleingruppe*), where you can **get to know each other** and us, of course. Additionally, it deals with the **OWO timetable** and the topic “**Why the hell do you (and we) study maths?**”. After **lunch**, which we’ll have together at the Mensa, we’ll create your first **timetable** together with you and talk about the **plan of exams** – which to take when and so on. After a small **hole** in the timetable – which like all bigger holes will be filled with content like small workshops – there is the **Fachschafts meeting**. This is a Fachschafts meeting especially for you which deals with topics interesting for you. Afterwards (like after regular Fachschafts meetings as well), there is **Omega** – i.e. we’ll go to one of the nearby pubs together.

## Tuesday

Tuesday starts at 8:30 (OWO-tutors and first semesters don’t need any sleep :-) with a delicious **breakfast** in the small groups, in which we’ll do the second small group block as well – titled “**How do I learn maths?**”. We can’t present any miraculous strategies there, but we’ll show you the different ways of studying maths which are offered here. After **lunch** (at the mensa again), there’ll be an information block about **Bachelor and Master**. **Short movies** will be shown by the *Filmkreis* – which is always a nice evening in the semester as well (often with english movies as well). Entry is (as opposed to in the semester) free. Those who are still alive and kicking then can join us in the **pub crawl**, where we visit the pubs of Darmstadt and meet at the Café Chaos in the end.

## Wednesday

Hopefully fresh and awake, Wednesday starts with the **trial exercise** – there you can see how the most important way to learn maths looks like. Thereafter, you can get to know the **Mathebau**, its open doors and the people who live behind them. After **lunch** (guess where?) there’ll be a **guided tour** through the different areas for the different subsid (or maybe something else, because this might be boring as you all got the same subsid). After a **hole** (cf. above), the **games evening** in the Mathebau starts – it would be great if you could bring (board) games, cookies and jelly babys will be provided.

## Thursday

Those who didn’t eat too many cookies on Wednesday, can get **breakfst** in the small groups on Thursday again. Afterwards, there’ll be a **trial tutorial** and a **small group** where we can talk about the newly experienced things. After **lunch**

(by now you should be able to find the way to the Mensa blindfolded), there is a block where you can get to know the rest of the **university buildings** and important places. Then there is the **presentation of the proseminars** (and the enrollment for them) and you can get to know your **mentors** while drinking a cup of tea with them. The evening features the absolute highlight of the OWO: the traditional **OWO theatre play** (played by the tutors) and the wild **party** at 231qm (a part of 603qm, *the* student event hall at TUD).

## Friday

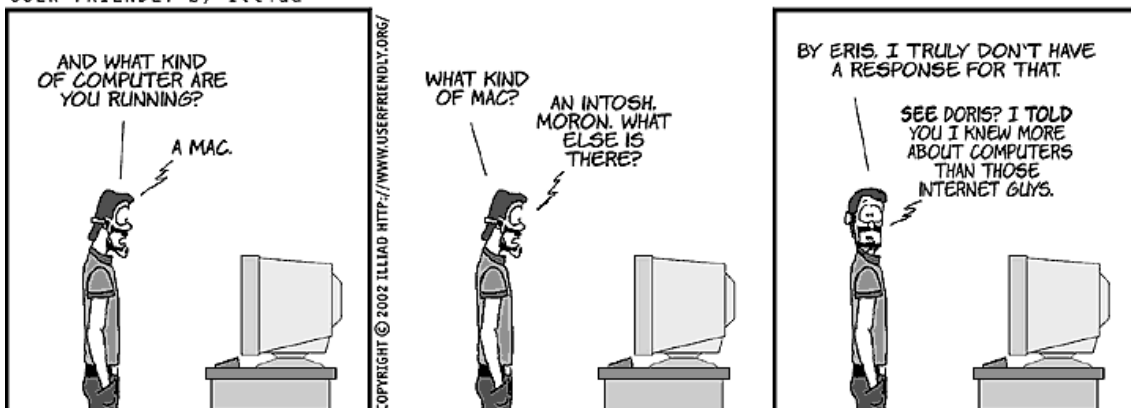
Because the party normally last *somewhat* longer, we start a bit later on Friday. In the last small group, there'll be a **small "reading night"** (be surprised) and hopefully some **feedback** from you on what was good about the OWO, what went wrong and what should be done better next year (by us, or maybe even *you* next year?). Because you are maybe already sick of the Mensa by now, we'll skip it for today and rather have **brunch** – at 231qm again. Those who want to do some sports can do it at the funny **feet-balls-game** (4 teams, 3 balls, 3 goals, ...) at the *Hochschulstadion*.

And after that, you'll (and we) probably need the weekend to recover, that's why there is no programme there.

Any questions? Mail us at [owo@mathematik.tu-darmstadt.de](mailto:owo@mathematik.tu-darmstadt.de)!

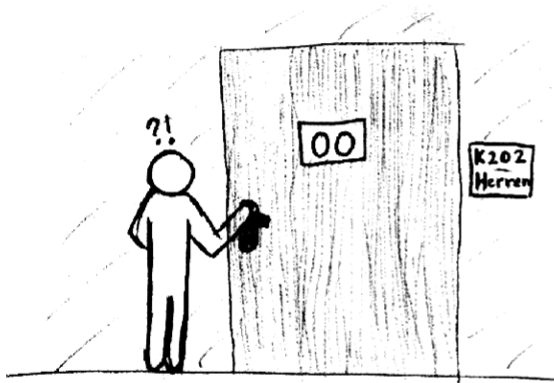
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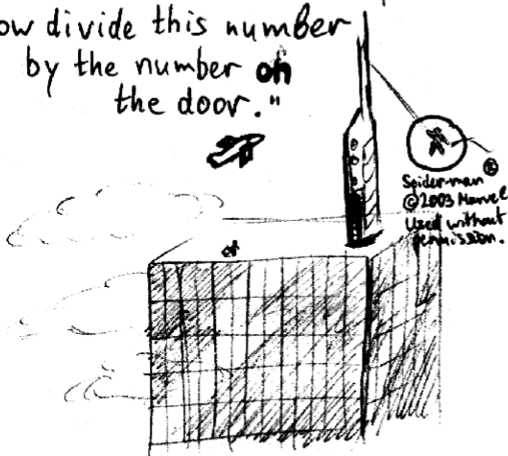
# OWO - Rallye

by: LWP



"Now divide this number by the number of the door."

SP



- Somehow I have the feeling I forgot the decimal sign.



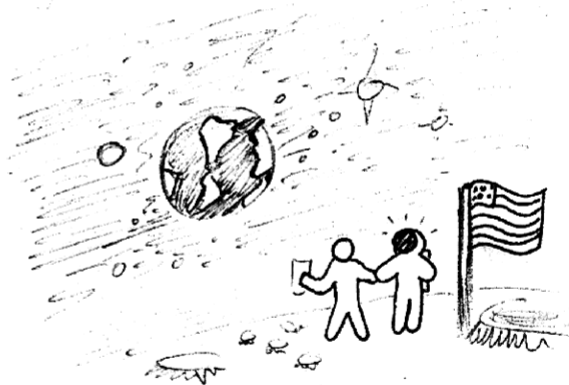
- Maybe I should have turned right instead.



- We don't have a library. We can't read!



Big purely white gym want ticket? Or rice? Or sanna?



- Hey, man! Glad you can speak English! Say, could you kinda help me with those directions?



## 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 bunch of homepages and mailinglists one should know about.

So let's start our descent into the virtual realities hidden beneath the grey surface with the *Fachschaft's* **homepage**, which can be found at <http://www.mathebau.de>. And at least the news there are, well, quite new.

Next one should have a look at the various **mailinglists** served by [majordomo@mathematik.tu-darmstadt.de](mailto:majordomo@mathematik.tu-darmstadt.de). If you don't know how to use its service just sent a mail to this very address with a single line in the message's body: "help". But note that it won't work when you put it in the Subject: line. And if it still doesn't work you can find additional help at <http://www.mathematik.tu-darmstadt.de/~fachschaft/majordomo.pdf>.

Lists one can find there are [mcs2003@mathematik.tu-darmstadt.de](mailto:mcs2003@mathematik.tu-darmstadt.de) and [m2003@mathematik.tu-darmstadt.de](mailto:m2003@mathematik.tu-darmstadt.de) which, as 2003 suggests, are yours. But while the [mcs200?@mathematik...](mailto:mcs200?@mathematik...) lists are basically about MCS (and CE), this applies to their corresponding counterparts and the German diploma students only during their first two semesters; afterwards most MCS students also subscribe to the German lists.

Speaking of which one also has to mention that, while most mails on [m200?@mathematik...](mailto:m200?@mathematik...) are written in German, it's OK to write one in English. On the [mcs200?@mathematik...](mailto:mcs200?@mathematik...) lists you should write in English anyway, so that everybody is able to understand them, because not all of us have sufficient knowledge in German, Bulgarian, Chinese, etc.

Another issue of netiquette is to make sure that you only write to the lists if you want to reach the whole list. Private mails better remain private, so please check the To: line when replying to a mail send via one of the lists.

But let's continue with the lists themselves, because there's another attraction one should mention when asking *majordomo* about all available "lists": the "Was geht?" mailinglist. This one is mainly for important announcements (read: parties) from students for students.

But there are still more lists; namely the [owo@mathematik.tu-darmstadt.de](mailto:owo@mathematik.tu-darmstadt.de) and [eih@mathematik.tu-darmstadt.de](mailto:eih@mathematik.tu-darmstadt.de) ones, which, although mainly concerned with the organisation of the OWO and the EiH<sup>i</sup>, are also the right place to ask questions about these specific events. Speaking of events another triple comes to mind: [ball-ag@mathematik.tu-darmstadt.de](mailto:ball-ag@mathematik.tu-darmstadt.de), [fun-ag@mathematik.tu-darmstadt.de](mailto:fun-ag@mathematik.tu-darmstadt.de), and [musikabend@mathebau.de](mailto:musikabend@mathebau.de) for the maths ball, the occasional games evening and music night. Here one also has to mention the [zapf-ag@mathebau.de](mailto:zapf-ag@mathebau.de) which does the bartending for the various parties.

And last but not least you can of course reach the *Fachschaft* by mail: [fach-schaft@mathematik.tu-darmstadt.de](mailto:fach-schaft@mathematik.tu-darmstadt.de).



<sup>i</sup> OWO for grown-ups

# Studying

## Subsid Philosophy

Those who can imagine to pick an “exotic” subsid (explicitly: not computer science) are well advised to choose philosophy. There is hardly any other subsid to cause such strong frowning with the one you talk to.

Definitely philosophy is based on interests and not on professional benefits. Arguing and not lecturing is its focus. That stands in sharp contrast to almost all other studies. So if you have always been interested not only in the laws of logic but also in the patterns of morals or cognition (etc.) and if you like talking or writing coherent texts using real words, then you can drag out many things of interest from philosophy. Even in lectures, contents are not always “lectured” – it may happen that the lecturer stops, leaves his desk and starts arguing. As well, the board is almost only used as the reference point of a pointing act or for drawing abstruse illustrations.

The department is rather small so that after some proseminars you know most of the participants. It may as well happen that you have more mathematicians than philosophers being present (for instance in a Socrates proseminar). Anyway your co-philosophers are a motley crowd of people regarding their age, main subject, etc.

### **The course during basic study:**

There is only little homework necessary for you learn by discussing during the proseminars. Each semester you can choose your favourites out of about 20 possible events. You are completely free in your choice because something like a curriculum does not exist for subsid-philosophers. To get your intermediate diploma (*Vordiplom*) you need to get 2 proseminar-credits (by presentation & elaboration or a written homework) and the obligatory 14 semester periods per week (*SWS*). Then you have to pass a 30-minutes of talking ewith a prof exam about a freely choosen seminar or reading (it is recommended to talk about something you heard and the corresponding prof lectured).

*Sebastian*



## **Subsid Computer Science**

So, you've decided to study "Mathematics with Computer Science", that's alright, but you should be warned before your first computer science lecture : There'll be other students who won't stop saying things like "Why isn't there any non-trivial exercise?" or "When will this lecture start telling me anything new?", whereas you can hardly understand what on earth should be *that* easy. You needn't be worried either, if you try to understand what the professor wants to explain to you about "reference semantics", not getting anything, while other students, obviously bored of the triviality of the lecture, prefer watching Simpsons videos on their notebooks. Nevertheless you oughtn't give up because of your (apparent) non-understanding!

There are two sides of the coin and there is plenty of fun on the other one! After the first, tiring, weeks, in which abstract modelling and formal writing are dealt with, there'll be this one moment when you begin typing to create your first little program. Suddenly, you realize that you've understood more in the lecture than you wanted to believe, that you *can* think in structures and that you can apply them to your programs. Being surprised by that is just the first positive moment. The greatest moments are those when you type "java program", press "Enter" and see that your own little program, which has cost you many hours of your valuable sleep, works at all...

### **The course during basic study:**

During winter semester the lecture "Introduction to Computer Science I" (4 hours) with the corresponding exercise (2 hours) is given, dealing with object oriented modelling and programming (especially JAVA) and program verification. Shortly after the last lecture (and an exam), you will be asked to participate in a programming project, in which you have two weeks to solve an extensive programming problem in a group of five or six students, eg you get the task to program an interpreter and parser or a little game. In summer semester there are the lecture and exercise "Introduction to Computer Science II" (4+2), dealing with OS programming, assembler, etc, and four or five projects during semester with project lectures (1+2). Again, an exam will take place shortly after lecture time. In autumn, after two semesters of hard work, there will be a final exam about CS1 and CS2, which you ought to pass to be finished with CS and to be able to entirely concentrate on the more important things in life... mathematics for example!

*Hasan*

## Your courses during 1st term

### Analysis (Ana)

Analysis is the art of evading infinity.

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

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

There'll 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've learned. They are structured similar to the exercise classes, and you'll 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, i.e. you're on the right track if you're thinking of vectors, matrixes 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 teaspoons<sup>i</sup>. 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'll 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'll also learn a bit about compiler construction.

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

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<sup>i</sup> There is no spoon. The editors

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'll receive programming exercises, which also amount to about two hours per week, to solve in the computer rooms.

*Matthias & Frauke*

## THE COMPUTER GEEK NUTRITION PYRAMID



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## 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

**Math 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. Additionally you will choose a proseminar I (PS I) with 2 SWS. **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 and CS I you have to pass the *Semestralklausur* (end of semester exam). From the PS I you will need a *Leistungsschein*, i.e. a certificate that you took part.

**project:** During the semester break you will (have to) attend a programming project (programming language is Java).

### 2nd semester

During the 2nd semester you will continue the courses from the first semester (LA II, Ana II, CS II and PS II), where LA has now changed into a 2+2 course.

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

### Vordiplom

Unlike the other exams, these exams count towards your *Vordiplom*, which is the degree you need to finish your *Grundstudium*.

After your 2nd semester you take part in the CS-*Vordiplom*-exam, consisting of a written 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 (NuMaI)*) (2+2+ 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*





## Plan of the “Grundstudium” for MCS (BSc.)

Unlike the *Hauptstudium*, the courses in the *Grundstudium* – i.e. the first four semesters – are relatively fixed. You have some choice in picking your two proseminars and some lectures in your fourth semester.

### 1st semester

**Math 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. Additionally you will choose a proseminar I (PS I) with 2 SWS. **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). If you are a foreign student, you will as well have a German language course during the semester.

**exams:** From the PS I you will need a *Leistungsschein*, i.e. a certificate that you took part.

**project:** During the semester break you’ll have to attend a programming project (programming language is Java).

### 2nd semester

During the 2nd semester you will continue the courses from the first semester (LA II, Ana II, CS II and PS II), where LA has now changed into a 2+2 course.

**exams:** You need the *Leistungsschein* for the PS II again.

### Basis Phase

Like the *Diplom*-students have their Vordiplom exams, you’ve got module exams. After the second semester you have to pass the Ana I & II exam (*Basismodul Analysis*) as well as the LA I & II (*Basismodul Lineare Algebra*) and the CS I & II (*Basismodul Informatik*) exams (these are the so called *Basismodule*, all of them are written exams).

### 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*). Both of them are 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 (NuMaI)*) (2+2+programming labs).

## Advanced phase

The second kind of exams are the so called *Aufbaumodule*-exams, which you take after the third and fourth semester. In the third semester, you have to take the Analysis-*Aufbaumodul*-exam and you *can* do the Algebra-*Aufbaumodul*-exam and the Numerics-*Aufbaumodul*-exam – or you can do Algebra together with the theoretically-oriented *Aufbaumodul* and Numerics together with the applied-oriented *Aufbaumodul* after the fourth semester. All of the *Aufbaumoduls* (except for statistics) are oral exams.

## 4th semester

In the fourth semester you have to listen to Introduction to Statistics (*Einführung in die mathematische Statistik*) (2+2). Furthermore you can choose one theoretically oriented module and one module which deals with applied math (both 2+2). Another 2+2 module you can choose from the lectures of the department of computer science. If you are a german student (well, actually a so called *Bildungsinländer*), you should also visit something offered by the department of *Geistes- und Gesellschaftswissenschaften* (worth 3 ECTS<sup>i</sup> credits).

## Advanced Phase

You have to take the *Aufbaumodul Stochastik*, which consists of a written exam on statistics. Furthermore, you have to take the *Aufbaumodul theorieorientierte Mathematik* exam, which deals with the theoretic module you’ve been having (possibly together with Algebra if you haven’t taken this in the third semester) and the *Aufbaumodul anwendungsorientierte Mathematik* exam, which deals with the applied module (again, possibly together with Numerics if you haven’t taken it in the third semester). To complete your collection of *Aufbaumoduls*, you have to take the *Aufbaumodul Informatik*, which deals with the computer science module.

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<sup>i</sup> European Credit Transfer System, a system of giving credit for different lectures, seminars, etc. based on their workload. Normally, at TUD, 1 SWS = 1.5 ECTS

## 5th and 6th semester (Specialisation Phase)

In the 5th and 6th semester you have the freedom to choose different modules from the theoretical and applied parts of the department and more from the computer science department, about which you have to take oral exams at the end. All in all, these should give you 42 ECTS credits and each of the different modules should at least be worth 12 ECTS credits. In the fifth semester, you have to do a *Mittelseminar* and more from the area of *Geistes- und Gesellschaftswissenschaften* (if you're German). A small project and your bachelor thesis hopefully concludes your bachelor studies – to be continued by a Diplom<sup>ii</sup>?

*Aleeh*

### THE TECH SUPPORT CALLER WARNING SYSTEM



Signifies a caller who offers little or no risk of causing the tech a cranial aneurysm. This is usually a caller who understands that most technical "secrets" are cleverly concealed in mysterious things called "manuals." **Recommendation:** Cherish these ones.



Signifies a caller who is suspected of weapons-grade stupidity, without any real evidence. **Recommendation:** Send "inspectors."



Indicates a significant risk of stroke in the tech caused by a caller who insists that "there is no 'any key' on the keyboard" and that "there's no way I can click on 'your computer' from over here." **Recommendation:** Slow breathing exercises and a good punching bag.



Indicates a high risk of an apoplectic fit. Callers insist that their operating system is "Netscape," their web browser is by "Logitech" and the specific application that blew up on them is "Microsoft." (Heh.) **Recommendation:** Join a Zen monastery



Indicates the highest risk possible. Adrenaline overload and renal failure caused by callers who angrily state that they have a degree and are in fact very clever, and that the tech must "hop to it and fix things." When asked to "open a window" they do in fact get up and open a window. Alas. **Recommendation:** a large bludgeoning instrument. For you or them, it's really your choice.

HTTP://WWW.USERFRIENDLY.ORG/  
COPYRIGHT © 2003 TLLAD

ii ... or maybe even a Master soon?

## Personal Tutors: The Concept of Mentors

In our math building we have the *Prinzip der offenen Türen* “principle of open doors”. So why the need for mentors? After all, you can get answers to questions anywhere. Just ask your professor, one of the assistants, one of the exercise tutors, your fellow students, or the *Fachschaft*. The same is true if you are frustrated, you think you don’t understand the lecture, you’re scared of the exam, ... And if you have any questions about the course of studies, you want to know which exams you have to do or you have similar questions, there are also people who will help you (just ask). So why mentors?

For the main part, they’re there to make things easier for you at the beginning, until you have become accustomed to the *Darmstädter Modell*. The mentors do not give one of the main lectures. As your proseminar teachers they will get acquainted with you (and you with them) in the smaller proseminar groups. Once in a while you may meet with your proseminar group for lunch, or over a cup of coffee, to discuss and swap experiences you’ve made so far. And you will make a many new experiences! Whether you have questions regarding math, organisational problems or things in general, you can profit from your mentor’s knowledge. Especially for those of you who still have qualms about knocking on your lecturers’ or their assistants’ doors or asking someone from *Fachschaft* for help, the mentors are a good bet of getting help and support. They may not be able to solve all your problems, but they will definitely know who to ask.

The usefulness of this concept depends largely on commitment from both sides. The more your mentors know about you, the better they will be able to help you through your *Grundstudium*. And the better you know them, the easier it will be for you to come to them if you run into problems. So please give your mentor a chance, and try to get to know him or her better. It may be difficult to strike up a conversation with someone you hardly know, and moreover someone who is a professor. But whether you believe it or not, they are just as afraid of you as you of them. ;-)

No matter whether you prefer to get help from your mentors or you’d rather ask one of the many other helpful people buzzing about the math building, make sure you benefit from this easy way of getting help and answers! The fact that problems may be passed on to others is one of the major advantages of Darmstadt. Don’t make life extra hard for yourself.

*ela & Frauke*

## The Colloquiums

There are three different kinds of Colloquium here at our department, which can be distinguished by their respective range and domain, i.e. their audience and speakers.

The audience targeted by the **Oriental Colloquium** consists mainly of students in their first to fourth semester. That's because it is meant to be orientational. While in the beginning and during your first two years, from your first to fourth semester that is, mathematics mainly consists of mandatory lectures and courses, it's really important to have at least a rough idea what's going on afterwards. And afterwards you have many more courses to choose from than just Analysis, Numerics or Statistics, and far less mandatory courses to take. Therefore your ideas are needed. Ideas about the different research groups at our department and the research they actually do, as well as ideas about your personal likes and dislikes.

So the Oriental Colloquium's domain consists of professors from the various research groups, which provides you with an opportunity to have a look at the various fields of research – and the professors are provided with an opportunity too, namely the presentation of their own research groups and, well, research. And you're going to write a thesis someday – perhaps in just one of those groups.

Three or four times per semester and on Mondays there will be an colloquium and it will be announced, of course, on the mailinglists and bulletin boards. It currently takes place at 4:45 pm in the nuclear physics hall, S2/14-024, and half an hour earlier in the math department's third floor for tea and cookies.

Another Colloquium is the *Hauptstudiumskolloquium* whose range consists primarily of students from higher semesters, i.e. fifth and further ones, and professors. Here the topics are no longer meant to be orientational, but *real* math. The domain again consists of professors, whereby a lot of them are from universities other than the TUD.

And then there is the *Studentische Vortragsreihe*, whose range and domain is identical, namely students. It's focus is to present topics from students for students. Topics in the previous semester included cryptography and classical music as well as number theory and Newtonian mechanics. When you are interested in giving a talk about your favourite topic roughly related to math, feel free to contact the organizers of the *Vortragsreihe*. We'd like to hear from you!

And perhaps you also want to hear a talk or two in one of the three colloquiums. So, see you there.



## “People who study math are crazy!”

is a phrase you’ll probably get to hear lots of times in the near future. Question: is it true? Are mathematicians really a bit on the weird side? You’ll easily find the answer to this question if you look at the way you behave after doing math homework exercises for  $n$  hours (where  $n \in \mathbb{R}$  positive). If, two weeks after you start your studies, you start dreaming of cryptic symbols, matrixes, and affine maps, and brooding over mathematical theories when under the shower, this is a clear indication of having choosen the right subject of study (or then again, maybe not?). Don’t be surprised about these or similar changes in behaviour.

It all started on a windy autumn day. We were standing in front of the lecture theatre which had taken us ages to find. All of us must have looked a bit helpless, none having any clear idea of what was going to happen next. One and a half hours later we had attended our first lecture of mathematics. So far, we didn’t regret our choice of subject. The first weeks flew past. We learned that that  $0 + 0 = 0$ ,  $1 \cdot 1 = 1$  and that Tim lives in a yellow house with a fish and drinks milk! We were favourably impressed by the good relationship with our fellow students, older students and professors. In the beginning, hardly anyone went to our tutors’ and professors’ office hours, but as the semester progressed we learned to appreciate this offer of extra help. Sometimes it was frustrating to sit for hours over an exercise question, only to receive a hint from the tutor, and realise that it can be solved inside of five minutes. It was quite reassuring that many of our fellow students were facing the same problem, as we found out when talking it over with them. You will see that you are not alone with your difficulties, but that many are feeling this way.

Amazingly soon it was almost Christmas. Not only the Math Christmas Party, but also the mid term exams, were now fast approaching. Rumours that we’d have to pass the exams were soon circulating, causing some agitation and panic, which quickly died down when we learned that this wasn’t the case after all. After the holidays we came back to find that our initial worries had for the most part disappeared, and life settled into a routine. Towards the end of the first semester some more exams were waiting for us, and after that 10 weeks of vacation.

We’ve now almost completed our second semester. Looking back, we can say that many of the difficulties we had at first have vanished into thin air. All of us have found a place to live (even if it took some time), met interesting and friendly people, found (or lost) the fun of mathematics, and learned to appreciate life at university. The two of us, at any rate, have never regretted our decision to study math, even if “side effects” (see above) do occur at times.

*Tanja & Natalie*

## Studying abroad – don't I do that already?

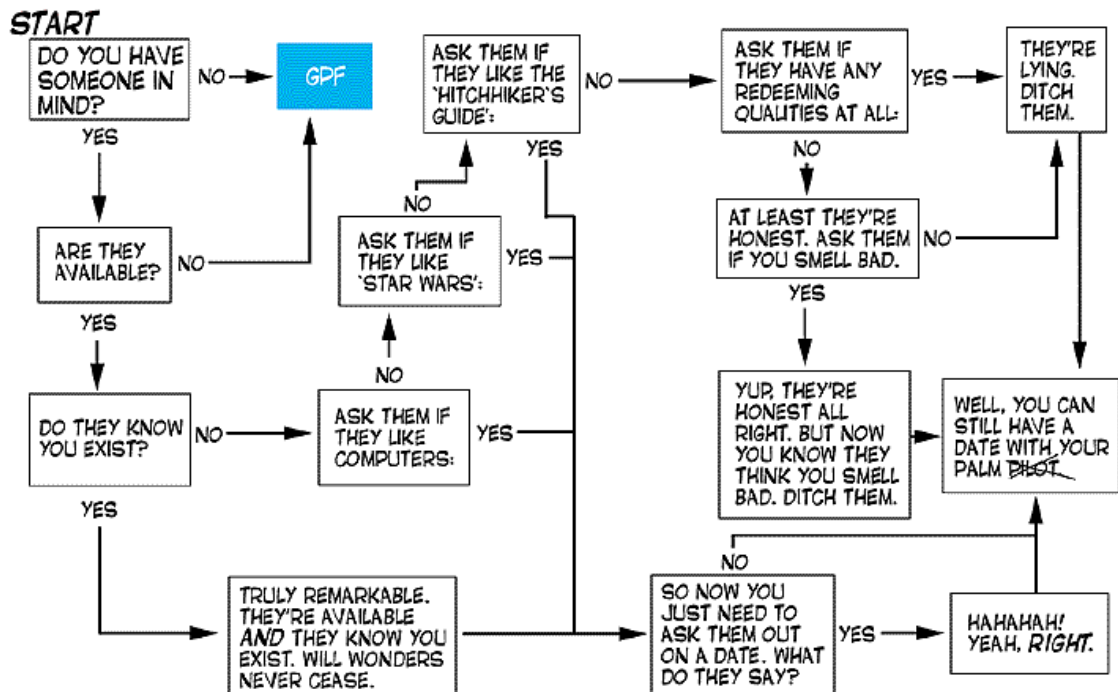
It is true that you as a foreign student are in a foreign country already, so we don't have to convince you that studying abroad is a good idea. But even if you want to study in Germany for quite a while, you might want to go to a third country to another university later on during your studies.

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 that you like 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 it's mainly for German students it is written in German: <http://www.mathematik.tu-darmstadt.de/Math-Net/Aussen/ausland.html>

*Ute*

## GEEK DATING FLOWCHART

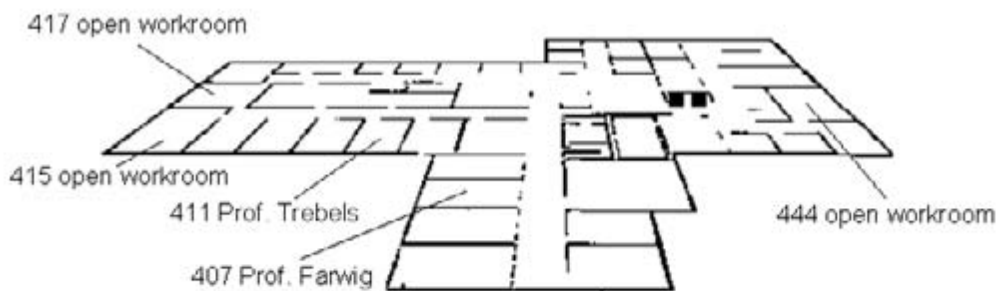
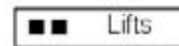


<http://www.userfriendly.org/> Copyright (c) 1999 Illiad

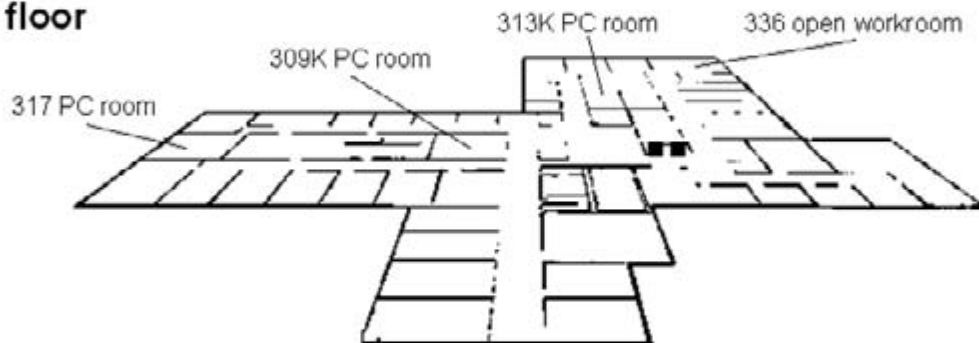
# Survival

## A map of the Mathebau

4<sup>th</sup> floor



3<sup>rd</sup> floor



2<sup>nd</sup> floor



1<sup>st</sup> floor

103 - 108 RG Pedagogy of Mathematics

*Hasan*



# TUD-maps

## City – Area S2

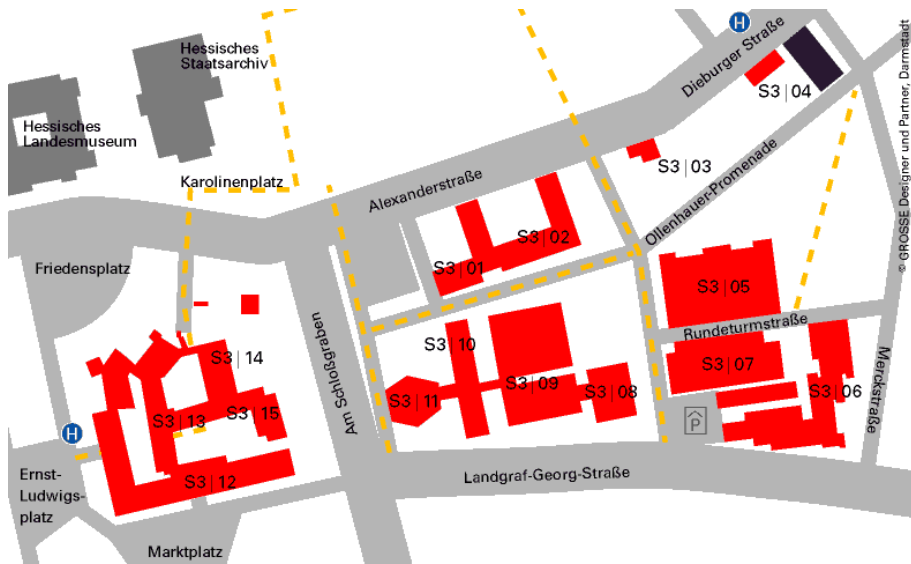


### City – Area S1



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### City – Area S3



*Alech*

## 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 fee you have to make, which amounts to 114,50 € for the winter semester 2003/2004. It is composed of 45 € going to the *Studentenwerk* – so they can i.e. maintain the mensa – 7.16 € for the AStA – student-body representatives elected by the students’ parliament – to household with and 62.34 € for the *Semesterticket*. The ticket is a nice thing, as it allows you to use any public transportation in the RMV<sup>i</sup> 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 120 through 260 € 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 to 14:30. 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 **math 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

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<sup>i</sup> RMV is a business venture of public transport providers

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 diploma 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.

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 web sites, unfortunately, are 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 math. 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. Particularly interesting for math-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*

## Important addresses

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

... because there are even more information booklets. Short ones and longer ones, with many, many details about the different possibilites 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:

- *Fachbereich Mathematik* (department): <http://www.mathematik.tu-darmstadt.de>
- *Fachschaft Mathematik*: <http://www.mathebau.de/index.en.html>
- *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](http://www.tu-darmstadt.de/aaa/index_en.tud)

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

### **Studienberatung Mathematik:**

Schloßgartenstraße 7 (Mathebau, building S2-15)

Franziska Siebel – room S2-15/424, Tel. 06151-163787

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

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](mailto: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](mailto: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](mailto: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 9:30-13:30

[asta@asta.tu-darmstadt.de](mailto:asta@asta.tu-darmstadt.de)

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

**Fachbereichsfrauenbeauftragte (women's representative of the department):**

Schloßgartenstraße 7 (Mathebau, Gebäude S2-15)

Franziska Siebel – room S2-15/424, Tel. 06151-163787

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

[siebel@mathematik.tu-darmstadt.de](mailto:siebel@mathematik.tu-darmstadt.de)

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

(taken from the HitHobitHeft)



## Looking for a place to live...

Have you tried to find a room? Was it difficult? I doubt that you'll say it wasn't because what we experience the recent years is a bit disturbing. The situation with the accomodation has become quite complicated. Most students face great difficulties until they find something to live in. Thats why we will try to help you with some useful information.

First piece of advice – *don't* wait till the last moment. This is a disadvantage that can create big problems, especially if you still haven't found anything till the beginning of the semester. You will have to deal with the living problem, instead of taking care of your studies. And not on last place, there will be more and more newcomers in October which means that finding accomodation will be even more stressful.

The first place where you should look for a room is :

Studentenwerk Darmstadt  
Alexanderstraße 4  
64283 Darmstadt

Tel. 06151-162710 (from 1-4 p.m.)  
Fax 06151-162110  
wrv@stw.tu-darmstadt.de  
www.studentenwerkdarmstadt.de

If you already know where the Mensa is, then *Studentenwerk* is situated on the first floor of the building.

Another possibility is looking at all the advertisment for rooms, which you can find in the Mathbuilding (Mathebau) on the ground floor; in the Old Main Building (*Altes Hauptgebäude*) near the main entrance and near the door leading to the Mensa.

You can find sufficient information in the Karlshof- and Niederramstädterstrasse-blocks. The people living there can choose the new roommate on their own. It is always a good idea to pass by and see if the people who are looking for a roommate will find you nice.

The local newspapers can help you as well. Each Wednesday you can search through the advertisments in *Darmstädter Echo*. You can find them in the special pages "Wohnungsmarkt". In Internet *Darmstädter Echo* is available on <http://www.echo-online.de>.

Another newspaper is *Sperrmüll* – there you can find information especially on Friday. <http://www.sperrmuell.de>

When you are loking for a room in the newspapers be careful what you are choosing! Not all offered rooms are furnished! And if you have difficulties with German, contact a person who can help you!

The possibilities to find a single room are smaller, thats why try to find some friends and search for something bigger together – an apartment or a house.

Don't forget to check in internet. There are some useful sites, e.g. <http://www.studenten-wg.de> and <http://www.studenten-wohnungen.de>.

Hopefully this information will help you. We wish you luck and welcome in Darmstadt!



## **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 or 7 42 06

Dr. med. Hans Nübling &

Dr. med. Silvia Hoppe

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. Martina 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. Matthias Ey &

Dr. Klaus-Peter Jayme

Ernst-Ludwig-Str. 21

Phone: 99 77 91

### **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

## A Mathematical Modell: The Darmstädter Modell

When my humble self as a highschool and potential college student sat down in a Darmstadtian lecture hall not quite two years ago, just to get an impression of lectures, the university and everything, it looked to me just like all the other lecture halls and universities in the rest of the republic. This not really differentiated view of the world of mine was caused by the fact that my view behind the scenes and out of the lecture hall onto that, what sometimes is canvassingly called *Darmstädter Modell*, was blocked by the fact that I had not yet the pleasure of attending exercises, tutorials and proseminars. . .

Now one might object that **exercises** are by no means exotic at German universities, but still things are somewhat different in Darmstadt. While at many other universities for mathematicians there are so-called *Vorrechenübungen*, i.e. one student is doing calculations on the blackboard and in front of the class, here the concept can be paraphrased as *5 out of 25*, which is again canvassingly supposed to indicate that the exercise groups of only about 25 students each try to find the solutions for the exercise problems in teamwork in small groups of about 5 people. So here people have not pondered over the solutions at home alone, to have them being calculated at the blackboard by somebody else a week later, but they rack their brains together; and that not only in the exercises, but ideally also with the homework. This is – by the way – an excellent opportunity to get to know each other, and to improve each others knowledge of math.

Apropos **homeworks**: These are handed in a week later to the exercise tutor, to be returned another week later corrected and with comments. And comments are more than just numbers and points, but hints to the correct solutions. That being said the exercise tutors are important persons to turn to, who you can ask not only during the exercises if no-one in the group has the rescuing idea but, of course, also during their weekly office hours, even if you can never expect to get complete solutions but always sensible initial steps; which does not mean, that there are not any model solutions, which can be found on the internet or in the LZM. And in cases you don't have time to attend your tutor's office hour just drop into one of the other tutor's offices and hours.

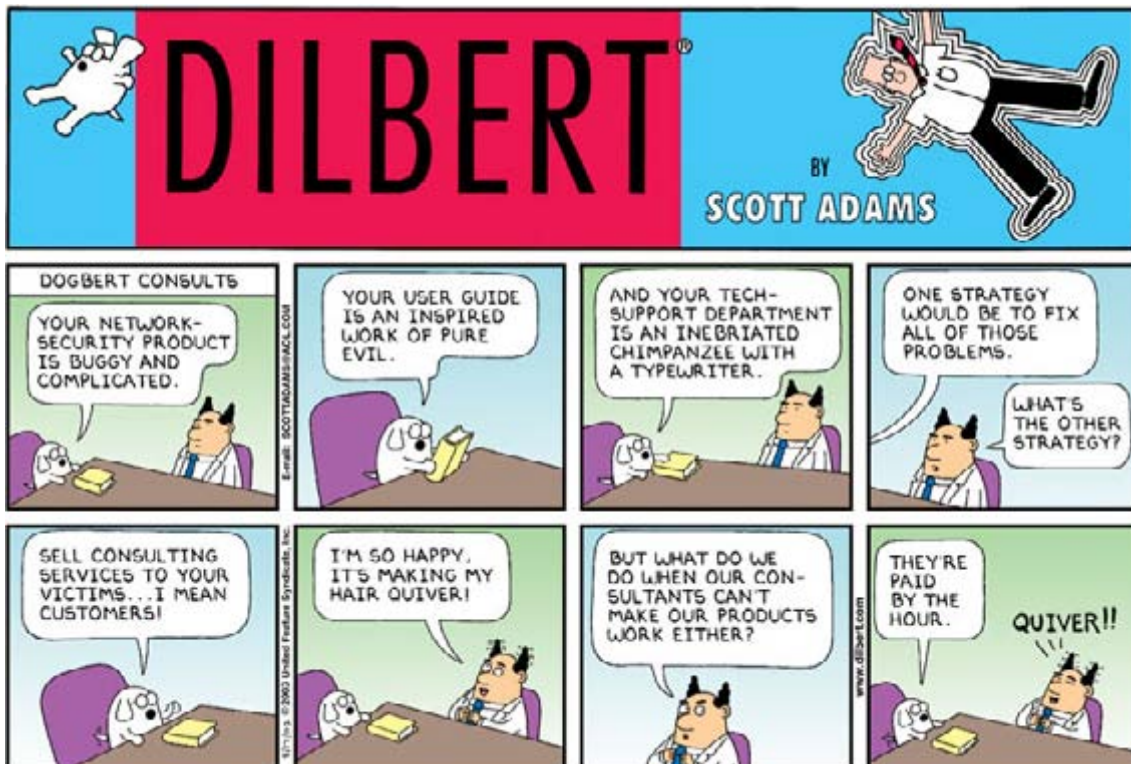
Similar to the exercises, but still different are the **tutorials**. Here most of the time groups are even smaller, the problems even more complex but not entirely

new and the tutors are *Wissenschaftliche Mitarbeiter* (assistants). By the way, there is no homework here, but there are still office hours, and model solutions can also always be found for all the problems.

Additionally to exercises and tutorials so-called **proseminars** are mandatorily offered, which are supposed to be an introduction to mathematical thinking and working concepts. Here one also works in groups together, especially since the size of an average proseminar is even smaller than that of exercises and tutorials. The topics have, in contrast to exercises and tutorials no direct connection to the lectures, but are very different depending on the professor, so that actually everybody can find a suitable proseminar. Moreover the tutor of your first proseminar automatically becomes your mentor, so that here you also do not lack a contact to turn to. The mentors are at your disposal beyond your first proseminar for all questions and problems about your studies at any time.

The way it is with mathematical models they indeed describe only an idealized reality, but with the *Darmstädter Modell* one is already very close to one; entirely without *Vorrechenübungen*, that goes without saying.

Andreas



## Lehr- und Lernformen

... 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. Even if there are credits which count for exams in the end sometimes, the homework is just for you, not for the credit points. 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 Proseminar**

... comes in different flavors. 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*

## Studying in the “Mathebau”

Some people won't believe it but there is this special species of maths students who, from time to time, have to invest some time in their studies. Either for revising lectures, preparing for exams, doing homework or learning for their *Vordiplom*. Not everyone wants to and not everyone can do that at home. Reasons could be “loud neighbors, who are having a barbecue for lunch the third day in a row”, or “not enough space on your desk” up to too much distraction: one could also go to the neighbors flat and have a barbecue. Also, probably you'll be the only one doing maths at home. So why not thinking about the *Mathebau*?

I bet it's not everyone's longing to spend all day everyday in one of the most beautiful buildings of Darmstadt but there do exist good reasons to take it into account.

There are five student study areas (“*Offene Studentische Arbeitsräume*”) namely the rooms 217, 336, 415, 417, 444. These are perfect to sit together in small groups (or alone – as you like) and work. Even quiet and maths-related discussions are allowed, even desired, as long as you don't disturb others. A second reason is the LZM, the “*Lernzentrum Mathematik*” (244). Here you cannot only study but also find binders with exercise sheets and model solutions (as long as they are provided). Also you have the unbeatable opportunity to ask a tutor who is available during the semester between 09:00 and 16:00. During this time you also have access to the binders.

Last but not least, there is the maths library (room 236). If you are looking for a really quiet place to study intensively, this might be your choice. You have to leave your name at the counter and you're not allowed to take your bags with in, but substantial literature is available.

Together with all this come all the traditional advantages that you expect. You meet a lot of people that have the same problems as you do. You can discuss homework or exercises with them as they might struggle with exactly the same problem. And if you don't see a chance at all you can still ask one of the assistants or professors (as long as they have got time).

So, if you are looking for a place to do your studies, take the *Mathebau* into account.

*Heho*

## **(Anti-)Frustration article**

Once upon a time a very wise & very smart man said that studying maths could be very difficult and frustrating. There was a time I didn't believe him. That was before I started studying. I still didn't believe him after my first lecture. But then there came a certain time where I was asking myself: "What the fuck am I doing here?"

Big parts of the lectures are not understandable and you are very happy if you have a slight idea what the professor is talking about. Why he is allowed to do whatever it is, that he is doing or why it is suddenly proved, whatever he wanted to prove remains totally unclear to most of the students.

Of course there are people that can follow anything. Don't get scared of them. You don't have to be ashamed of not being a genius.

Moreover I'm convinced that you can learn much more if you have to deal with the fact that you don't understand everything in the beginning rather than getting everything in the first place.

Apart from that the exams are very often not as difficult as expected. In contrast to the lectures they sometimes even seem to be rather easy. In any case it is possible to pass them.

So if one evening you realize that your first semester is almost over (even if it seems like yesterday that you enrolled) and you write your Analysis exam the next day even though you haven't learned enough for it and believe you don't know anything, you should still go there. You'll realize why the next morning. You will have the chance to learn very much at the TU and especially at the maths department. And it'll be more than maths that you'll be learning. You'll meet many people that will help you. It's even possible to go to the lecturers and ask them loads of questions. Which is not the case in every university.

Use the opportunities that you have, ask other people for help whenever you need help (even if it's sometimes difficult to ask for help). And don't give up too easily if you are frustrated (and there will be a time when you are frustrated). Sometimes it's normal not to understand something (but then again, what is normal?)

The wise man also told me that there will be a time when I'll understand the things that I've studied a few semesters ago. I'm still not 100% convinced, but then again wise people are usually right.



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<sup>i</sup> in her 2nd semester

## **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*



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## Цели на следването във Факултета по Математика

Обучението ви във Факултета по математика ви подготвя за професията на математик в икономиката, индустрията, администрацията или научните среди на международно ниво. По време на следването си студентите се запознават отблизо с математиката като културен фактор и се научават как да разбират и анализират както нея самата, така и сходни на нея проблеми чрез употребата на математически средства за разрешаването им.

Целите на изучаването на математика в частност са:

- Придобиване на фундаментални познания по Анализ, Геометрия, Алгебра и Стохастика; специализация на придобитите знания в различни области на математиката
- Запознаване с важни методически стратегии в математиката и историческото им развитие
- Разбиране за еволюцията на математиката, как се променят целите ѝ, кое стимулира употребата на математиката и защо тя е необходима
- Овладяване на употребата на математически способности и абстракция по правилен и подходящ начин за успешното разрешаване на проблеми и задания в други изследователски сфери, както и за изграждането на математически модели
- Способността да се общува и работи в екип с учени и изследователи от други области, както и с такива, практикуващи чиста математика
- Умението да се анализират целенасочено предметите на изучаване и способите на математиката, както и нейната конкретна връзка с обществената среда като цяло

Гонят се следните цели:

- Придобиване на самоувереност и независимост в научната работа
- Проява на издържливост, постоянство и мотивация при решаването на математически задъния
- Откритост към анализ и критика и стремеж към нови познания

- Желание за сработване и съвместна работа и общуване в екип
- Поемане на отговорности и осъзнаване на последиците от собствените действия

Не се цели единствено преподаването на специализирани знания, а по-скоро студентите сами да развият разбирането и способностите си, които биха им помогнали да се справят с предпоставките на бъдещата им професия.

В специалността «Математика с компютърни науки (MCS)» се преследват следните конкретни цели:

- Способността да се общува на чужд език, изразяване устно и в писмена форма
- Способността да се общува и работи със специалисти от други области
- Опознаването на политическата, икономическата и социалната ситуация в друга държава, а също така и нейната история
- Запознаването и сравнението на различни образователни системи

Превод: Лъчезар Димитров



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## 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. To find the HSZ is not that easy but you can find a picture online ([www.hsz.tu-darmstadt.de](http://www.hsz.tu-darmstadt.de)). Alternativly 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.

### **First about the scenes of action:**

The “Turnhalle” (gym) and the “Spielhalle” (playhall) form a kind of combobuilding and are to be reached by the car park at the stadium Böllenfalltor (stop “Steinberg” of line 9). To get into the halls one has to go down the stairs inside(!) the sports bar. Every once in a while there are checks if you have your student-ID and clean indoor gym shoes with you. The *Hochschulstadion* (uni-stadium) is to be reached by a gravel car park and a normal car park in front of the stadium. During summerterms you should bring your students-ID with you. In winterterm there are no controls.

### **But now the actual proposal:**

Really every sport one can imagine is provided. From aerobic over judo to ultimate frisbee everything appears in the programme. Of course one can participate everywhere, but for most of the traditionell sports it would be sensefull to have some practice. If and which abilities one should have is to be read in the programme. Most offers (expect soccer) are free for gents and ladies. The “contest team” handball for example prefers to go to mixed tournaments. You can get further information about your sport from the *Obleuten* (contactpersons) who are listed in the programme. For some sports there are even international contests (IHM) infos about those ones you can obtain online at [www.adh.de](http://www.adh.de) or from the *Obleuten*.

## The most important possibilities are:

The best and highly used proposal is the unheated outdoor pool at the uni-stadium. In summerterm it is open between 03/15 and 08/31 and it is for free. You just have to bring your students-ID and a bathing suit. Eventually a 1 € coin to use the locker and a bottle of water for the prices at the shop are extreme (like at any outdoor pool). Also at the uni-stadium you can find the *Kraftraum* (exercise room). To use it is not for free but with 25 € for a full year it is very(!) cheap to train there compared to a professional exercise room. To get in you just have to knock on 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 *Lauftreff*. It provides 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 bathing suit or a ball: One 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 ok.

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 streeball tournament. The highlight is certainly the “Fischerstechen” a kind of “standing-on-surfboard-&-beating-each-other-with-cotton-bud”.

*Sebastian*



## Freshers' Weekend

**What, Where, When and most importantly Why is Freshers' Weekend???**

**What:** You are invited to spend a weekend with your fellow students and the *Fachschaft* in a seminar house and to have a lot of fun.

**Where:** *Haus der evangelischen Jugend Mannheim*

**When:** Friday, November 21st to Sunday, November, 23rd

**Why:** because math at TUD is much more than just lectures and exercise classes! There are all those other students, who show up to the same lectures (or don't, depending). There are parties, math musical evenings, the math choir, university politics, the math dance, ... In short, too much to learn about in one short week. During 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 Freshers' Weekend you'll have the opportunity to relax, and to get to know some of those people in a more un-mathematical atmosphere. There's no rigid schedule for the weekend. Instead, there'll be lots of time, and lots of interesting people to meet. You decide what you want to do: play board games, collect some friends and go exploring, take your favourite book and find a place away from all the bustle, learn to juggle or play Go, find out about the math choir or sing along, whatever. If you feel that a weekend without math is impossible, fine. Grab your lecture notes and come along! It's surely better to discuss your math exercises with your fellow students, or have some exercise tutor at hand if you run into problems, than to stay at home by yourself and get frustrated.

Please *sign up* for the weekend, so that we know how many people are coming. Your OWO tutors will explain where and when to sign up.

If you have any questions, ask them or send an email to [freshers-weekend@mathebau.de](mailto:freshers-weekend@mathebau.de)

*Frauke*

## Well, what do you do tonight?

Between Lichtwiese on the one side and Central Station on the other side of Darmstadt, there are, beside the university-city, countless pubs and coffee-bars (and a lot more) where you can relax from study-frustrations or just spend a pleasant time.

From a cool beer as a warm up (with each other) to a sleepless disconight everything should be possible – it only depends on you!

The nice thing about Darmstadt is that anything can be comfortably reached by foot, bike or using public transportations (free for students, thanks to the *Semesterticket*) (cf. [www.rmv.de](http://www.rmv.de)).

Here is an extensive offer from us for you to let your soul feel free.

### 1. Step

Recently moved in? If the new neighbour or flatmate has a balcony or a cosy kitchen, occupy it with a bottle of wine (tea) and wait for kindly reactions... can't go wrong. Hihi.

### 2. Step

Okay, now you are hopefully two! Now then go to the notorious *Studentenknepfen* (student-bars), which you find immediately when leaving University (City): After getting the *Vorlesungsverzeichnis*, if online is not enough, at the Wellnitz you can pass it right and enter the Lauteschlägerstraße. Here you can visit the 80's that is to say the homelike and well known **Hobit** and eat a little Ork there. Behind the **Student-Döner** and the **inhabited art** you'll find the **Hotzenplotz** on the corner (same side), where you can eat delicious pizza, too. Really fantastic breakfast you get at the **Café Blu**, which is 20m further on the left side. Nearly next door there is the **Havanabar** where you can get fruity cocktails. Orthogonal to the *Lauteschlägerstraße* the *Mauerstraße* is located. There you find on the right side the **Celtic Pub** and the little **Irish Pub** where Guinness and Magic Potion waits for you. At the end of the street you find the **LaCita**, also a nice cocktailbar with yummy mexican food, but cocktailbar-prices... Not to forget is the Karlshof own **Exil**, which is a studentbar per definition! (*H-, F-Busstop Karlshof*)

### 3. Step

Now it's time to get to know even more **Cafés and Bars** in Darmstadt. From now on we make a list for you, so the overview does not get lost (as far as possible):

#### student-kindly

- **Osttangente:** Liebfrauenstraße 38 (Our little winepub, absolutely a sleeper, near Karlshof, there you can buy wine at night, when supermarkets are already closed)
- **Carpe Diem:** Schuhknechtstraße 1 (snug Café, first of all outside)
- **Café Chaos:** Mühlstraße 36 (beautiful, crazy, nice, but unfortunately not that cheap)
- **Linie 3:** Ludwighshöhstraße (with the tram 3 to Bessungen, Stop Orange-rie)

#### student-kindly and cheap

- **Bistro ;-):** Mensa City, has good coffee and drolly mensa-women
- **Coffemaker:** Audimax (the cheapest and most awakening)

#### friendly

- **NT or Nachrichtentreff:** Elisabethenstraße 20 (central, a lot of space for a lot of guests, in the pedestrian area of DA)
- **Café Godot:** Bessungerstraße 2 (with the tram 3 to Bessungen, Stop Freiburger Platz)

#### friendly and expensive

- **KuK:** Carree (Vienesse coffee house with character)
- **Bormuth Café:** Marktplatz (very good cake you can get here)

#### friendly and gay

- **Café Hans:** Dieburger Straße 19

#### not friendly

- **Café Schwarz-Weiß:** Schloßgartenstraße (and the worst coffee into the bargain)

#### 4. Step

Let yourself be invited and challenged by the wicked and trendy bars in Darmstadt

##### **student-kindly and cheap**

- **Latino Appetito:** Soderstraße 21 (cheap in every way)
- **Bar Goldene Krone:** Schustergasse 18 (grubby Jazz-Bar for everyone)
- **Arabesque:** Julius-Reiber-Straße 32 (smoke appletobacco, relax and feel good)

##### **student-kindly**

- **Hemingways:** Sandstraße 30 (cuban flair)
- **Havana Bars:** Kranichsteinerstr. 8 (there are 2 in Darmstadt, you already know one, good food and cocktails)
- **Pueblo:** Erbacherstraße 5 (Cocktails plus Happy Hour)
- **Clusters:** Wilhelm-Leuschner-Straße 38 (wacky sunny Couchbar, who is first...)

##### **friendly**

- **Coyote Bar:** Waldspirale 8 (worth seeing Bar in the worth seeing Hundertwasserhaus with long-afternoon-happy hour)

##### **friendly and expensive**

- **Weststadtbar:** Mainzer Straße 106 (look and be seen)

##### **not friendly**

- **Enchilada:** Kasinostraße 5 (too expensive, stressy, unfriendly service, exclusive)

##### **To get drunk with beer, beer, and more beer**

- **Ratskeller:** Marktplatz
- **Braustübl:** Goebelstraße 7 (brewery)
- **Grohe:** Niederramstädterstraße 3 (brewery)



## 5. Step

You want more? Disco, rocking, dancing, grooving, housing or just move your tights smooth??? Darmstadt has the following for you:

### studentfriendly

- **Schloßkeller or StudentInnenkeller:** (Thursday for example Basement grooves, various programme, see [www.schlosskeller.de](http://www.schlosskeller.de))
- **Goldene Krone:** Schustergasse 18 (Wednesday, Saturday Hardrock, alternative, monday black, and so on, furthermore concerts, poolbar, cinema, parties...)
- **Disco Biergarten Dieburg:** Hohestraße 17, Dieburg (long way to Dieburg but really to be recommended: not to be confused with Dieburger Biergarten, has a nice Biergarten, too. Rock, House, Black – view programme!)

### friendly

- **Room 106:** Mainzerstraße 106
- **Nachtcafé:** Carrée (for all Housefanatics)
- **Matrix:** Landwehrstraße 89 (best black, RnB & HipHop ...)

### what else?

- **Kuckucksnest:** Landgraf-Georg-Straße 25 (cheesy-pop-song-freaks und discomouses)
- **A5:** Gräfenhäuserstraße 75 (foamparty and birthday-all you can drink-party, Ladys Night-Party...)

### friendly and gay

- **Schloßkeller:** first sunday in every month gay & lesbian disco

## 6. Step

Darmstadt in the summer! What is best and cheapest, if you chill in the Herrengarten, lie there in the sun... Furthermore other trendy or cozy stuff can be found outside:

### Beergarden

- **Biergarten Dieburger Straße** (friendly talking and looking around)
- **Bayrischer Biergarten:** Kastanienallee 4
- **Biergarten Lichtwiese** (since 2003)
- **Roßdorfer Biergarten:** Industriestraße 18, Roßdorf (bus connection 5502) (open also during winter! Jamaican flair and Reagee-style invite you to dancing, Cocktails and concerts)

## Picknick

- **Park Rosenhöhe**
- **Mathildenhöhe**
- **Orangerie**
- **Steinbrücker Teich (Oberwaldhaus)**
- **Grube Prinz von Hessen**

## 7. Step

Here we present you a few of Darmstadt's cultural offerings: Finally we don't want to become marshy and have other interesting conversation topics besides mathematics, too :-P.

- **Centralstation:** Carree (concerts, expersition, lecture, see programme: [www.centralstation-darmstadt.de](http://www.centralstation-darmstadt.de))
- **Bessunger Knabenschule:** Ludwigshöhstraße (various events, see programme)
- **Staatstheater:** Marienplatz 2 (great theater, see programme)
- **Kikeriki:** Bessungerstraße 88 (Variété)
- **Halb-Neun-Theater:** Sandstraße 32 (Comedy, Variété)
- **Comedy Hall:** Heidelbergerstraße 131 (Comedy)
- **cinemas:**
  - **Audimax:** student cinema, in the summertime: OpenAir at the Schloß!
  - **Cinemaxx:** Goebelstraße 11
  - **Helia & Rex:** Wilhelminenstraße 9
- etc.

## 8. Step

Finally if you like a nice dinner, or if it should even get romantic:

- **Fan's Garden:** Heinrichstraße 48 (chinese)
- **Taverna Romana:** Dieburgerstraße 6 (italian)

*Eddi*

# Organising

## The “Fachschaft”

The *Fachschaft* actually means all the students in one department. But practically *Fachschaft Mathematik* means a group of math students who actively care for the interests of the math students.

The *Fachschaft* is open for everybody and organizes its work democratically. Every Wednesday at 6.30 pm we meet at the session of the *Fachschaft* (so called “*Fachschaftssitzung*”) at the *Fachschaftsraum* S2-15/219. Here, various topics concerning math 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 new exercise concepts, the employment of several new professors and junior professors, the evaluation of the department, the employment of new assistants as well as the new examination rules.

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

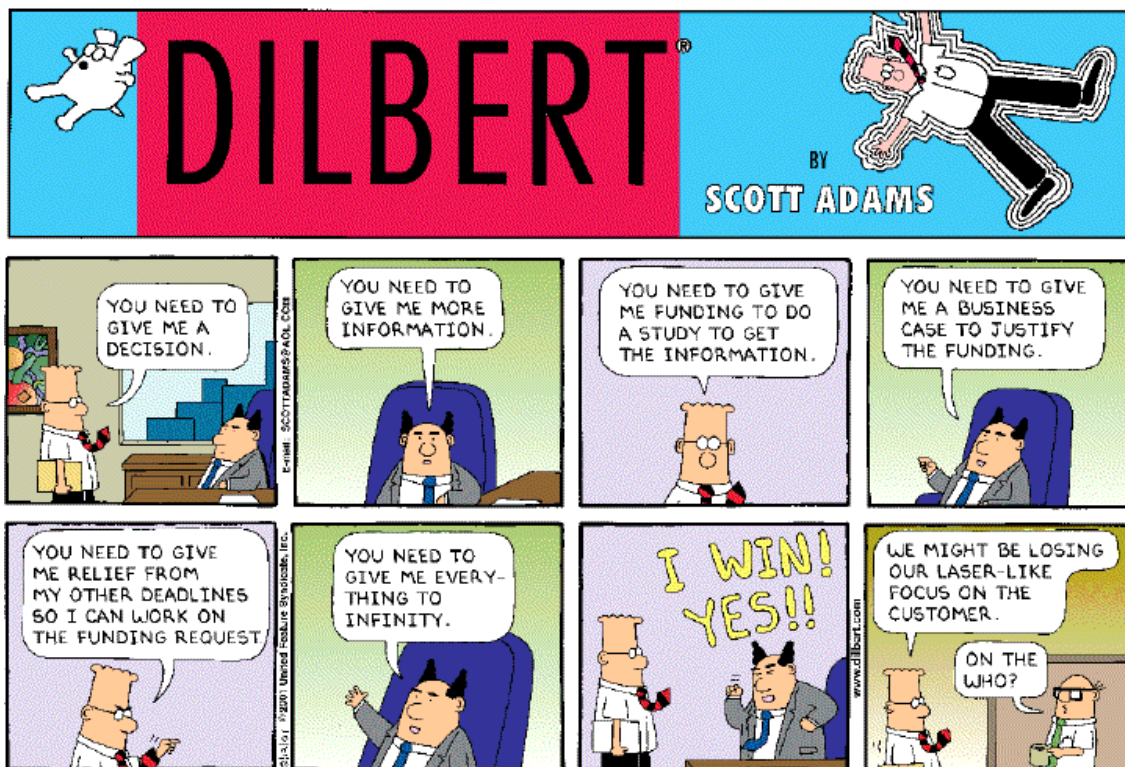
The current notes of the sessions can be found in the glass box near the *Fachschaftsraum* and at the pin board in the ground floor. There you can also find information on dates of the various working groups (editors of the *Mathe-Info*, preparation of HiT/HoBIT, OWO, EiH, parties, math music evening,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

The *Fachschaftsraum* S2-15/219 with cozy and fluffy sofas, a good old radio, a water boiler and a coffee machine, small library, the weekly newspaper “*Die Zeit*”, the satirical magazine “*Titanic*” and much more is open 24/7 and invites

all math students to have a break and a cup of tea or coffee or other drinks from the Fachschafts-Büro (office).

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 also be a Fachschafts session and the experienced Fachschaft people will happily welcome you and answer all your questions about Fachschaft.

*several authors*



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## Life, University and all the rest

You social life may not be centred 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, sports and 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](http://www.tud-schauspielstudio.de))
- **Filmkreis:** movies from Hollywood to Cannes, ([www.filmkreis.de](http://www.filmkreis.de))
- **Audiomax:** radio with topics covering everything from S1/01 to the cafeteria, ([www.audiomax-campusradio.de](http://www.audiomax-campusradio.de))
- **Hochschul-Orchester:** music from the orchestra . . . , ([www.tu-darmstadt.de/hg/orchester](http://www.tu-darmstadt.de/hg/orchester))
- **Hochschul-Chor:** . . . and the choir, ([www.tu-darmstadt.de/hg/chor](http://www.tu-darmstadt.de/hg/chor))

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

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

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

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

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

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

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

*Andreas*

## **AStA and university politics**

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

But 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*. Furthermore free **legal advice** is offered (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 is given.

But the funny things in live 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 three(!) people, who are supported by a secretary and an executive board.

How the AStA will look like in the new semester, is yet unclear. Probably it will consist of members of the biggest list in the students parliament (FACHWERK – the list of the *Fachschaften*), but whether there are any people willing to do this work, is not yet secured.

It's a pity, because as you might have noticed by now, the AStA is quite an important institution. So if you enjoy standing up for something, the active people are surely happy if you join them.

And if that is all way to much for you, then go and cast your vote at least (even though the election is only in summer), that is the least support you can give to the people who are working for your interest (and unluckily it is not normal to do so, the voter turnout was under 10% this year for the first time).

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



## AGs of the Fachschaft

Because the department is also divided into a – from time to time – changing number of several AGs with different mathematical contents, this concept was transferred to the *Fachschaft* almost in a 1-to-1 fashion. However those AGs form a small part of *Fachschaft* activities only and don't have any connection to mathematics. Instead they 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 organisation of the OWO but in certain areas existent. Traditionally there are the following three-and-a-half *Fachschaft* AGs:

### Fun-AG

The Fun-AG 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.

### 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.

## Zapf-AG

Of course even mathematicians are humans who like to party and also organize parties. There is one in each OWO and EiH, and apart from other *fixed* events like the winter party in February every year there are more reasons. If it's not too cold, the *Hüttchen* near *Hochschulstadion* is perfect, because there you can make a barbecue. Besides there is the *Schlosskeller*, the *Oettinger Villa* or the *Stöferlehalle*<sup>i</sup>. Zapf-AG *zapfes* (i.e. opens beer kegs) as the name suggests, but also organizes. In the past this was done uncoordinated by several people and also the Fun-AG, but now we have a Zapf-AG again. That doesn't mean as a participant you have to e.g. carry all crates on your own but you have to find people helping. All together *zapfing* is not one of those unappreciated jobs, whence it's worth participating.

## 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. Insofar 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*



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<sup>i</sup> Also known as 603qm. The Editors



## Committees within the department

You, who is reading this booklet, enrolled at the math 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, on basis of which the FBR decides. Thus, the FBR has the legislative power within the department.

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 Ha-Jü Graf Grote, Ute Günther, Frauke Harrach, Alexander Klink and Andreas Sewe (which you will all see as OWO-tutors, by the way).

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.

Main task of the *Forschungsausschuss* (research committee) is to present the FBR with a list of proposals for the placement of new assistants. These are in most cases accepted by the FBR. Besides, other things concerning research within the department are discussed here.

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.

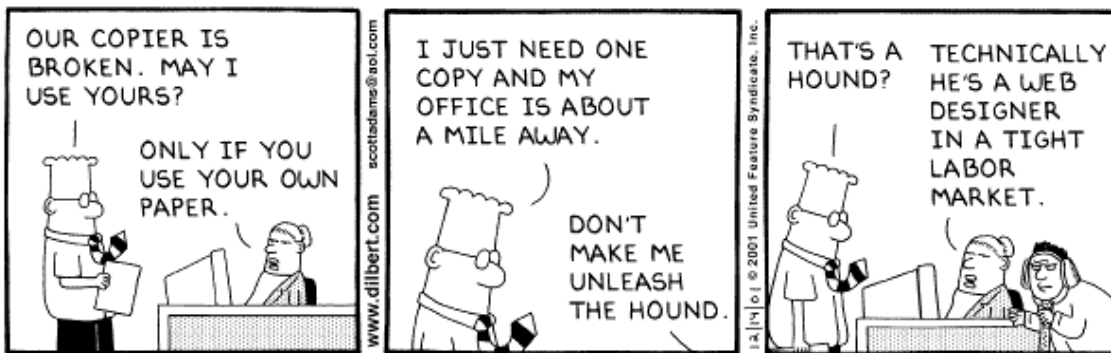
The *Diplomprüfungskommission* (Diplom exam committee) is the official body that closes the diplom exams within the department. Furthermore it decides about proposals for distinction. It also arranges the approval of new minor subject as well as examination subjects, prolongation of terms, etc. The rules of approval of exams taken abroad are discussed here as well.

The *Promotionsausschuss* (doctorate committee) is mainly concerned with the opening of doctorate proceedings as well as the acceptance of doctorate degrees. It also decides upon the examination committee.

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.

So all in all there are nine positions, where students can engage themselves outside of the Fachbereichsrat. Und 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.

Aech & Ben



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# Working

## HiWis – Die wissenschaftlichen Hilfskräfte

### 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. One of the many advantages of a HiWi's job is the fact that its working days are not taken into account when considering there 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 judgement – 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 3 days x 10 hours each, or 10 days x 3 hours, or 15 days x 2 hours or however you want – giving you considerable freedom and flexibility.

The standard payment is 8.02 €/hour – certainly more than 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 than 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, to 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". However, this is quite an involving task, since the pages have different design and structure, so it is not always so easy to find exactly what you are looking for. Moreover, most offers are only in German and, unfortunately, outdated – some departments have not updated their sites for 2 years now! 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, however, 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.

What could possibly get in your way is language. This is not a problem to overcome easily, but, nonetheless, almost everyone in the university is capable of speaking English, with more or less success, but still good enough for you to communicate. You should not be scared or put off. If language is not such a great precondition, and your other skills are good enough for the employer, you would most definitely get the job.

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 say 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). 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 have to tear one of these off your semester ticket. Your employer could photocopy it or hold it for him/herself. Anyway, you have enough of them on your semester ticket.
- *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 into 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 (unless you end your contract and get it earlier). This is a 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.

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 TUD<sup>i</sup>, 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* – after you have registered at the *Einwohnermeldeamt*, you should receive a month or two later your *Sozialversicherungskarte*, sent by post on the address you registered. You should fill the number on it in the Fragebogen.

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?

You submit your 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 15th every month.

Finally, we, the authors of this article, would encourage you strongly to become a HiWi and await your further questions about or comments on this article. Feel free to contact us at: [lucho\\_a\\_d@abv.bg](mailto:lucho_a_d@abv.bg) and [krumsyarov@yahoo.com](mailto:krumsyarov@yahoo.com).

*Lachezar & Krum*

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<sup>i</sup> Actually, it even is the state of Hessen. The editors

## $\psi$ -Cho Test

Find out, which type of math-student you are (and which subsidiary subjects suit you)!

1. Analysis compares to Linear Algebra like:
  - a. Apple to pear
  - b. The old Europe to world-power USA
  - c.  $e^x$  to derivative of  $e^x$
2. What's your favourite movie?
  - a.  $\pi$
  - b. Good Will Hunting
  - c. neither
3. Infinite is:
  - a. not finite
  - b. my ignorance
  - c. too much
4. What are Peanuts?
  - a. a cartoon-series
  - b. "student-food"
  - c. nuts with normradius  $\frac{1}{2}$
5. What's your favourite greek letter?
  - a.  $\pi$
  - b.  $\xi$
  - c.  $\alpha$
6. What's your favourite motto?
  - a.  $\varphi$  also makes bullshit
  - b. I ♥ Maths
  - c. I.L.Y.V.V.M.
7. What's your favourite accessory?
  - a. Jojo
  - b. Pencil, erasor & ruler
  - c. Infinity glasses
8.  $\pi$  is:
  - a. about 3
  - b. an usual number
  - c. an irrational, transcendent number with an infinite decimal expansion.

## Interpretation

The symbol which you checked most often, tells you who you are!

	1	2	3	4	5	6	7	8
a)	$\emptyset$	$\infty$	$\pi$	$\emptyset$	$\pi$	$\infty$	$\emptyset$	$\emptyset$
b)	$\infty$	$\pi$	$\infty$	$\pi$	$\infty$	$\pi$	$\pi$	$\infty$
c)	$\pi$	$\emptyset$	$\emptyset$	$\infty$	$\emptyset$	$\emptyset$	$\infty$	$\pi$

$\emptyset$ : The uninterested

$\pi$ : The ambitious

$\infty$ : The psycho

**The uninterested ( $\emptyset$ ):** You don't really have the motivation to study mathematics but something induced you to do it anyhow. We also don't know what it was, but one thing is fore sure: you have to exert yourself if you want to make it. We wish you good luck!

Subsidiary subjects: Sports, none

**The ambitious ( $\pi$ ):** You start your math-studies with the best intentions, and you will make it! You'll go to the most boring lectures and even when it is 40° celsius outside, you'll visit your tutorials instead of going to the swimming pool! Even if you're not studying with your whole hear: Congratulations!

Subsidiary subjects: Computer science, economics

**The psycho ( $\infty$ ):** You don't want to study mathematics to get a fucking well paid job later, but to discover all the wonderful secrets this study keeps ready for your mind. Indeed you have to be careful that you don't loose contact to your (non-mathematical) neighbourhood, which has a lot to offer, too. We wish you all the best on your way!

Subsidiary subjects: Philosophy, theoretical physics

*Eddi*



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- **Fachschaftsroom:** S2-15/219; open anytime for everybody
- **Fachschaftsoffice:** S2-15/220
- **Fachschaftsmeetings:** Every Wednesday at 18:30 Uhr in the *Fachschaftsroom*. The current notes and other information are in the glassbox to the right of the *Fachschaftsoffice* and near the entrance of the *Mathebau*.

**LMU**

FS-Sitzung  
**Lite**  
20.10. 17:00

FS-Sitzung  
jeden Mittwoch um 18:30  
S216  
219

21.-23. October

**Freshers' Weekend!**

Go-Go-Girls not included!  
☺

OWO-Party  
+  
OWO-Theater  
TRu, 23.10.  
19:00  
327qm

FS-Seminar

28.-30.11.

**WINTER-BREAK**  
XXII. XII-IV. I

CS X Modul Inf Vordiplom  
**Party**  
in Hütchen  
6.10.03, 20:00  
Free entry

ABEND  
Montag Monday at  
19:00  
S215/219

S215/219  
Spielabend  
Mi, 22.10., 19:00  
Game-Eve  
We, 22.10., 19:00

www.filmkreis.de

**BRUNCH**  
FR., 24.10.

Füße-Bälle  
Spiel  
Fr., 24.10., 15:00

**FBR**  
/ FACHBEREICHSRAT/

Termine/Dates:  
7.10.2003.  
31.10.2003.  
21.10.2003.

FILMKREIS  
Di+Do/Tu+Th  
Audi max  
Mi/We - Rex

Handy gefunden  
**DANKE!**

Exchange 2.0  
Mod. Exam  
in Ano in ICS-II.  
for 4+  
0179/11220  
0179/5710

Kneipen-Tour  
Pub-Tour  
Tue, 21.10.  
19:00

<b>Time</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
08:00 – 08:45					
08:55 – 09:40					
09:50 – 10:35					
10:45 – 11:30					
11:40 – 12:25					
12:35 – 13:20					
13:30 – 14:15					
14:25 – 15:10					
15:20 – 16:05					
16:15 – 17:00					
17:10 – 17:55					
18:05 – 18:50					
19:00 – 19:45					