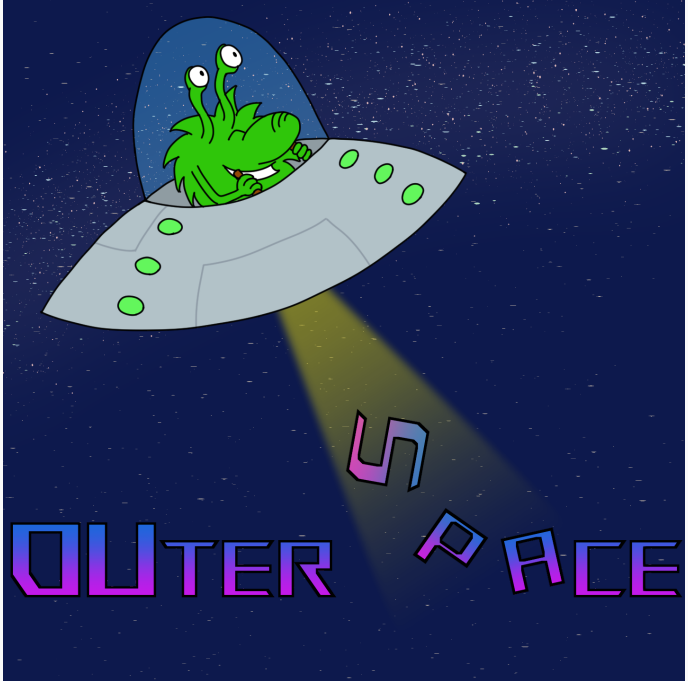

OUTER SPACE

Master Orientation Unit

Orientation Unit for Master Computer Science & Master Cyber Security

Michael Kaibel - Herman Haverkort - Michael Nüsken

April 4, 2025

University of Bonn - Student Body & Program Management Computer Science

Welcome to the University of Bonn

Welcome

- Welcome to the University of Bonn
- We hope you arrived here fine
- Before anything **there is no need to panic**
- You will get all the important information on what your study here entails within this unit

The Master Inform

- In addition to the orientation unit the student body produces the Master Inform
  - Magazine for new master students with all the important information
  - PDF can be found on the website of the student body
    - https://www.fachschaft.info/en/studienbeginn/master-inform/

Quick Introduction - Michael Kaibel

- **Personal Information**
  - Pronouns: He/She/They
  - 23 years old
  - Student in the master of computer science
    - Focus on Algorithmic Theory
- Heavily involved with the Student Body Computer Science
  - Represent the interests of students in various university commitees
  - Organize things like the Master-OU and the summer festival
- Student researcher in the Computational Analytics research group

Figure 1: Michael (middle)

Table of Contend

The Student Body

What is the Student Body

- Students in Computer Science and Cyber Security are organised in the Student Body Computer Science
  - Represents interests of students in Bachelor & Master Computer Science & Cyber Security and Master Life Science Informatics
  - Represents student interests to the university
  - Host memory protocols of old exams
  - Helps students with a variety of problems
  - Sometimes organise events
    - Summer Festival of Computer Science
    - Bachelor & Master OU
    - Game nights
    - And many more

How does the Student Body work

- All students in Bachelor & Master Computer Science & Cyber Security, the Master Life Science Informatics & PHD-Students form the Student Body Computer Science
- Recieves Money from the central Student Body of the University
  - The money you send the uni exclusively goes to the central student body
- All students elect the Student Body Representatives
  - Elections are once a year
  - Every Student Body member can be a candidate
  - Kind of our parliament
- Student Body Representatives elect the Student Body Council
  - Makes Day- to Day Decisions
  - Meet once a week in lecture periods

Student Body Representatives

- 15 elected Members
- Meets every once in a while
  - Meetings are public, but only elected members have a vote
- Makes Decisions of great importance
  - Elect student representatives in university commitees
  - Vote on the Student Bodys financial plan
  - Discuss official student body positions
    - E.g. does the student body support the ideas for the planned master AI

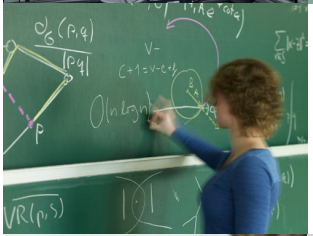
Student Body Council

- Meet weekly during lecture periods
  - Currently Wednesday at 18 c.t.
- Meetings are public and all Student Body members have a vote
- Organise events
  - Orientation Units
  - Summer Festival
  - Game Nights
- Handles day to day business
  - Make sure that the Student Body office is open during certain hours

How can the student body help me?

- If you have questions regarding your study, ask the student body
  - Send a mail to **fs@fachschaft.info**
  - Visit the Student Body Office in room 0.019 next to the foyer
  - We can't always help, but usually at least know who can
- We host useful information on our website: https://www.fachschaft.info/
  - Memory protocols of old exams https://altklausuren.fachschaft.info/
  - The Master-Inform-Magazine https://www.fachschaft.info/en/studienbeginn/master-inform/

Programme Management



Introductory Meeting for Students of the Institute of Computer Science (Winter Semester 2024)

Your degree programme managers

Herman Haverkort

Michael Nüsken

Bachelor-Master-office

Organisational/Administrative questions:
servicebuero@informatik.uni-bonn.de
Mon 11^{00}-12^{30} room 0.022

https://www.informatik.uni-bonn.de/en/studies/
https://www.informatik.uni-bonn.de/en/studies/information-for-first-semester-students

International Office

International Office

- For international students the International Office offers help
- Help with organisational stuff (especially not explicitely computer science related things)
- They have programms to help intigrate into a new country & culture
- They offer German courses
  - Language courses do not count towards your master
- And a lot more
- Good starting point for help in cases that are not related to computer science

Important Buerocratic Steps

- Register at the City Hall
- Enroll at the Studierendensekretariat with your admission letter (if you haven't already)
- Activate your Uni-ID
- Set up your uni mail
  - Check this regularely, possibly set it up in Thunderbird or similar
- Create your informatics account

Examination Regulation

Examination Regulation

- The Examination Regulation is a document detailing how the studies are structured
  - Details how many CP you need in what kinds of lectures
  - Details what happens when you fail an exam
  - Details how you apply to exams
  - And a LOT more
- It is also written in German
- Hence we will now list the most important contents

How to sign up for exams

- For labs and seminars you sign up via BASIS between 17-31 April
  - For both you usually have to find someone supervising you before the semester, so not relevant to most of you
- For lectures you sign up for the exercises and exams between 1-21 Juni via BASIS
- Mails informing you that it's time will be send to your uni mail
- You can deregister from exams until 1 week before the actual exam date via BASIS

Pop Quiz

- You are considering taking the exam in lecture A, bu are not sure yet. When should you sign up for the exam?
  a) On the 1st of Juni, as soon as it is possible
  b) As soon as you are certain you want to take the exam
  c) On the 21st of Juni, the last chance to sign up for the first exam
- It's a) On the 1st of Juni
  - You can deregister for much longer than you can register

Mandatory Exercises

- Many lectures have mandatory exercises
- Usually 50% of points on some exercise sheets need to be reached
- You are required to pass the mandatory exercises to attend the exam
- Usually also a good way to get a better grip on the subject

Exams - First and Second Attempt

- For lectures there are two attempts at the exam per semester
- If you fail the first attempt you can try again at the second attempt
  - You will have to register for the second attempt again
- It is also possible to register only for the second attempt if the first exam date isn't good for you

Exams - What if you failed?

- If you fail an exam you should go to the post-exam review
- These are usually held shortly after the grades come out by the examiner
- Great place to check where you had problems
- Sometimes it turns out that the examiner missed something or added up points incorrectly, so sometimes you can come out with a better grade
- If you failed in the first attempt of the semester you can sign up for the second attempt
- If you failed in the second attempt you'll have to wait until the next time the lecure is held
    - You won't have to redo exercises the next time, though it maybe smart to still do them

Repeatedly failing an exam

- You have 3 attempts per lecture
- Once you fail 3 times you can no longer attempt that exam again
  - If it was a compusory lecture (IT security for Cyber, nothing for CompSci) you are exmatriculated
  - Exmatriculation means you can no longer study a computer science related subject at any public university in Germany
  - Don't worry. It is exceptionally rare for people to be exmatriculated

Passed an exam - But unhappy with the grade?

- If you passed in the first exam period, you can try an improvement attempt
  - Sign up for the second attempt
  - Take the exam again
  - Take the better of the two results
- Possible up to 3 times (in total over all lectures) and only in the first 3 semesters

Course of Study

Course of Study

- Differ by quite a lot between Cyber Security and Computer Science
- Indicator which master something applies to will be in title
- Both share that the majority of the master is choosing lectures from a large pool

CompSci & Cyber: Types of Modules 1

- Course of Studies is separated into modules
  - Each moduel gives a certain number of credit points
  - A complete master consists out of 120 CP
  - The study is planned for 30 CP per semester and 4 semesters over all
    - If you take longer that is completely fine
- There are 4 general types of moduels
  - Lectures
    - Usually 6 or 9 CP
    - 6 CP is 1 lecture and 1 tutorial per week
    - 9 CP is 2 lectures and 1 tutorial per week
    - Usually have a written or oral exam at the end
    - Make up most of the modules in your master

CompSci & Cyber: Types of Modules 2

- Some more types of modules:
  - Lab
    - 9 CP
    - Practical research project under supervision
    - Has a presentation and written report at the end
  - Seminar
    - 4 CP
    - Researching a scientific topic, holding a presentation and writing a report
    - Sometimes includes a peer review process
  - Masters Thesis
    - 30 CP + 2 CP for an accompanying seminar
    - Culmination of your studies, large research project with a written thesis as the result
    - Accompanying seminar ends in a presentation

CompSci - Compulsory Modules

- There are no compulsory lectures in the Master CompSci
- All lectures are "compulsory elective modules"
- You must select one Lab, one Seminar and write a masters thesis with the accompanying seminar
    - You have (relatively) free selection of the topics

CompSci - Tracks I

- Modules for the Master Computer Science are separated into 4 tracks
- You choose one track as your main track
  - This is not an explicit choice you tell the university
  - You just have to make sure you meet the CP requirements for tracks
  - Your main track determines how many CP you need to select in each track

CompSci - Tracks II

- Algorithmics
  - Algorithmic Theory, Complexity Theory & Theoretical Computer Science
  - Very math and proof heavy, little to no programming
- Graphic, Vision & Audio
  - Computer Graphics, Animation & Vision, Audio Signal Processing, Image Analysis
- Information & Communication Management
  - Cyber Security
    - Usable Security, Secure System Architecture, IT-Security, Binary Anaysis etc.
  - Communication Management in Distributed Systems
- Intelligent Systems
  - Robotics, Machine Learning, Data Scienc, AI, Autonomous Systems

CompSci - CP by track

- Your master must include at least 31 CP in your main track
  - At least one lab and one seminar must be in your main track
- You must select 27 CP outside your main track
  - You must have 6 CP in at least two tracks other than your main
- You must write a masters thesis with an accompaoying seminar
  - Its topic does not need to link to your main track
- The last 30 CP are free
- You can have at most 2 labs and 2 seminars in your master

Cyber - Compulsory Modules

- The IT Security lecture for 6 CP
- One Lab in Cyber Security
- One Seminar in Cyber Security
- A masters thesis with a cyber security focus
- 51 CP are compulsory, the remaining 69 are selected from "compulsory elective modules"

Compulsory Eective Modlues

- There are 2 kinds of compulsory elective modules, between which you can split 69 CP:
  - Subject bound compulsory elective modules (54 - 69 CP)
    - Split again into:
    - Subject bound compulsory elective modules cyber security (at least 24 CP)
    - Subject bound compulsory elective modules computer science (at least 12 CP)
  - Non-subject bound compulsory elective modules (0 - 15 CP)
    - Lectures from other master studies
    - Must be allowed on a case by case basis by the examination board
    - Must not cover computer science topics
- Subject bound compulsory elective modules computer science may include at most 1 lab and 1 seminar

CompSci & Cyber - Where do I find lectures to listen to?

- Examination Board publishes module handbooks
  - List all existing modules for their respective study
  - One for Cyber and one for CompSci
- With one exception all Cyber Security modules are available to Computer Science students
- Most, but not all, Computer Science modules are available to Cyber Security students
  - Most of the Algorithmics track is not available
- Not all modules are available every year
- Available modules can be found on BASIS

The Institute of Computer Science & Important Stuff around it

Important Buildings

- Most of your lectures will take place in the lecture hall building
- Conveniently it's just a short walk away from the Institute of Computer Science
- The Institute of Computer Science is where most of your tutorials will take place
- The Campo Mensa is also close by
  - You can get cheap & decent food there

The Institute of Computer Science - I

- Currently Computer Science in Bonn resides in only one institute, the Institute of Computer Science
- A second institute, the Lamarr Institute, is currently being build up
  - It will mostly focus on AI and ML
- Most of the computer science professors & their phd students & postdocs have offices in the building
- Sometimes there are also events like the Summer Festival of the Student Body and Institute of Computer Science
- For many students a significant part of their student lives take place here

The Institute of Computer Science - II

- The institute is divided into 6 departments
  - These are then subdivided into research groups
  - Each professor heads a research group (and vice versa)
- The Departments are:
  - Department 1: Computational Analytics
    - Researches algorithmic theory and how to efficiently apply it to real problems
  - Department 2: Visual Computing
    - Reseach computer vision, image computation & image analysis
  - Department 3: Information Systems and Artificial Intelligence
    - Research AI, especially with regards to big data analysis
  - Department 4: Security and Networked Systems
    - Research attacks on IT systems, both on a computer level & with regards to usable security
  - Department 5: Algorithms and Complexity
    - Research the theoretical design of Algorithms and the analysis of their complexity
  - Department 6: Intelligent Systems and Robotics
    - Research robotics & the application of AI in robotics

The Institute as a Workplace

- Some students work at the institute
- Tutoring lectures in which you performed well is a somewhat common job
  - Most of those jobs are for the bachelor, requiring German, but some are for the master as well
- Some students are also parts of research groups
  - Usually support phd students with their projects & work with them
- It is a great opportunity if you are interested in an academic career after the master
- The payment is pretty bad though
- There is no central job board of the institute, getting jobs happens in direct communication
  - If you are interested in a job, talk to the relevant professor/postdoc (ideally after doing well in one of their lectures)

Some other neat places

- the botanical gardens are close by and worth a visit
- The yard in front of the Poppelsdorfer Schloss is also a nice place to hang out in summer
- The library is a good place if you are looking for books or just a place to work quietly