M.Sc. Informatik / Computer Science

Department of Computer Science

Faculty of Engineering

University of Freiburg

Albert-Ludwigs-Universität Freiburg

UNI FREIBURG

Who am I?

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More information about consulting

(and changes to consulting hours) see here:

https://www.tf.uni-freiburg.de/en/study-programs/counseling

I'll show you…

1. How to organize your studies
2. Some administrative things
3. Some important rules regarding exams
4. Where you can get information and help

Part 1

Syllabus / Study Plan

Very flexible syllabus…

- We do not provide a pre-made lesson plan or schedule.
  It is **your** decision what you do when.

- Follow the overall rules in the exam regulations.

- How exactly you put your syllabus together does not really matter to us…
  In the end, you'll have to have fulfilled the requirements.

- So, none of your syllabi will look the same!

Now, let me explain, how to built your own, individual syllabus / study plan.

Vocabulary you should know… part 1

Modules = building blocks of the syllabus

- Consist of various elements (different symbols/icons in study planner)
- Credits are given for complete module, no „partial credits"

Courses in the ESE program:

- Lectures – Vorlesung (V)
- Exercises – Übung (Ü)
- Lab courses – Praktikum / Praktische Übung (Pr)
- Seminars – Seminar (S)
- Projects – Projekt (*also* Pr)

Vocabulary you should know… part 2

Graded assessments or pass/fail:

- Coursework or pass/fail assessments ("Studienleistungen", SL)
  - Part of module or final assessment
  - May be graded, or only "pass" or "fail"
  - Not part of the final grade
  - No negative consequences if failed (apart from having to repeat → "time penalty")

- Graded assessments /Exams ("Prüfungsleistungen", PL)
  - Always graded
  - Always counts into the final grade
  - Strict rules/regulations and very limited number of attempts

Syllabus: General structure

42 ECTS
(7 lectures)

Advanced Lectures
(1 or 2) **+**
Specialization
Courses
(6 or 5)

12 ECTS
2 **Seminars** + 1 **Lab Course**

18 ECTS
Study project

18 ECTS
Customized Course Selection

12 ECTS
from courses offered
outside CS

6 ECTS
▪ also from courses offered outside CS
▪ or 1 language course
▪ or 1 additional CS lecture

30 ECTS Master Thesis + Colloquium (defense)

For optional specialization in AI or CPS:
At least 24 ECTS from according lectures + Study project + Master Thesis in related topic

Optional specialization

- In **Artificial Intelligence** with topics like
  - robotics and autonomous intelligent systems
  - artificial intelligence and machine learning
  - computer vision and graphics

- In **Cyber-Physical Systems** with topics like
  - verification and analysis of hard- and software systems
  - software development and programming languages
  - embedded systems

Formal requirements:

- At least the following courses have to be from this area:
  - 4 Specialization courses or Advanced lectures (24 ECTS (6 each))
  - 1 Study project (18 ECTS)
  - 1 Thesis (30 ECTS)

Course lists as PDFs on program website → Curriculum

Advanced Lectures

You have to do at least one advanced lecture,
you may take two at the most
(the 2nd replaces a specialization course)

7 Defined Modules / Courses:	Semester
Algorithm Theory / Algorithmentheorie	Winter
Databases and Information Systems / Datenbanken und Informationssysteme	Winter
Machine Learning	Winter
Computer Architecture / Rechnerarchitektur	Winter
Software Engineering / Softwaretechnik	Summer
Foundations of Artificial Intelligence / Grundlagen der Künstlichen Intelligenz	Summer
Image Processing and Computer Graphics / Bildverarbeitung und Computergrafik	Summer

Specialization Courses

You have to take 6 or 5 specialization courses (depending how many advanced lecture you take) → in total it's 7

Lots of different lectures (+ exercises) to choose from in areas like:

- Algorithms / Bioinformatics
- Computer Architecture / OS / Embedded Systems
- Software / Programming
- AI / Robotics / ML / DL

- Computer vision / graphics
- Network / communication
- Data bases

- Backofen, Bast, Kuhn
- Biere, Scholl, Amft, tba

- Podelski, Thiemann
- Hutter, Boedecker, Valada, Grabocka, Ragni, tba (successor Burgard)
- Brox, Teschner
- Schindelhauer, tba
- tba

Seminars and Lab Course

You have to do 2 seminars and 1 lab course

- **Seminars** generally can be held in a weekly fashion or as a compact course („Blockseminar") for the presentations (details given in course description)

- **Seminars** and **Lab courses** may vary in topic and/or name from semester to semester, as most lecturers like to keep up-to-date with their research areas

- Check out how to book seminars:

https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/booking-of-pro-seminars-in-computer-science

Study Project

You have to do 1 study project

- You'll work (under a supervisor, but independently) on a current research topic in one of the workgroups / Chairs of the department

- See it as your „trial run" for the Thesis

- Has to be completed before you can register for your Thesis

- Before you start with your Study Project, please check out the procedure of finding a topic, registering the project etc.:
https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/registering-for-projects
(Same goes for the Thesis!)

Customized Course Selection („Individuelle Studiengestaltung")

- 18 ECTS (at least – can be slightly surpassed)

- You have to do some courses from subjects outside of Computer Science

- Only SL (pass/fail) in courses outside CS (so, not counted into final grade)

- You can choose to **replace** courses from outside of CS amounting to **6 ECTS (at most)** with

  - Either a language course

  - Or another Computer Science lecture (advanced or specialization), but in this case, the **CS course** will have an **exam (PL)** and count into the final grade!

Available subjects to choose from

- Some subjects are integrated in the study planer in HISinOne, but not all of them.
For those subjects not available for booking in the planner of studies, you'll have to organize things like registering for the courses and exams on your own (by contacting the lecturers, for example).

- See full list on program website:

https://www.tf.uni-freiburg.de/en/study-programs/computer-science/m-sc-computer-science
→ Curriculum

Master thesis

- Master thesis (27 ECTS) graded

- Colloquium (= Presentation / Defense) (3 ECTS) graded

- Admission to thesis:
at least 72 ECTS credits (including completed Study project)
(plus conditional courses from admission, if applicable)

- Duration: 6 months

- More information:
https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/thesis

Administrative things

Some practical advice, general facts and recommendations

- Most courses are offered every other semester
  (i.e. once a year); some can be held more irregularly;
  should be mentioned in the module handbook
  (see HISinOne or PDF)

- Overlapping courses...
  With the amount of courses and the flexible curriculum,
  this just happens.
  Basically, you have to find a way to deal with it!
  (Meaning: Choose one course for this semester, do the other
  one in year; or check for lecture recordings, or…)

- Be aware that you might need to adapt your original study plan

Some practical advice, general facts and recommendations

- Usually no dependencies regarding order of courses

  - Nevertheless, check with lecturers for appropriate combinations or recommended order of courses

- Most prerequisites stated in the course catalog are recommendations, they are not mandatory;
  well, a few of them are…
  Just read what is said in the description!

- Conditions have to be fulfilled in addition to the normal Master's curriculum → likely to extend your study time
- You have to complete the required modules by the end of the second semester. They should be your top priorities! (Especially in case of course collisions/overlaps)

- You will be automatically registered for these courses as well as exams. If you should decide not to take the exam in the intended semester (after the course), you have to contact the examination office to de-register.
- Exams required for conditional admission can only be repeated once.

Advice for your next steps

- Study the course catalog / planner of studies
  (What courses are offered right now?)

- Generally, check out a few more courses than you intend to complete in the given semester

- Register (via HISinOne→ "Booking of courses") for the courses you want to take as soon as possible

- Information on dates and deadlines for course booking:
  https://www.tf.uni-freiburg.de/en/studies-and-teaching/calendar-dates
  → Booking deadlines for Bachelor and Master courses

- **Read the official exam regulations!**
  (= terms and conditions of your study program)
  https://www.tf.uni-freiburg.de/bilder/studium_lehre/englische-poen/exam-regulations-msc-cs-po-2020

Registering for/ Booking of courses

- Have a look at your *planner of studies* https://campus.uni-freiburg.de

- Follow instructions from short demonstration here

- If you have questions or made a mistake while booking: **Contact** Ms. Moses in the Dean's office: moses@tf.uni-freiburg.de or myself
(Screenshots are really helpful)

Be aware: Different course types have different deadlines!

If you forgot to book a course:

- Contact the lecturer and ask if there are still seats available and if it generally makes sense to start late

- The examination office **can't** help you with this!

HISinOne Demo: Login and Planner of Studies

- Login to https://campus.uni-freiburg.de/

■ **Use the correct view: Examination regulations**

Planner of studies with Module plan Master of Science, Informatik/Computer Science, Hauptfach, PO 2020

HISinOne Demo: Examination regulations structure

Structure of examination regulations - All subject related semesters	Actions	Status

- 11LE13PO-MSc-679-2020 - Informatik / Computer Science, M.Sc., PO 2020
  - 11LE13KT-9000-MSc-679-2020 - Master degree program Informatik / Computer Science, M.Sc. PO 2020 - 120.0 ECTS
    - 11LE13KT-8609-MSc-679-2020 - Preliminary average grade M.Sc. Informatik / Computer Science PO 2020
    - 11LE13KT-9991-MSc-679-2020 - ECTS credits account Master of Science in Informatik / Computer Science (PO-Version 2020) - 120.0 ECTS
      - 11LE13KT-8000-MSc-679-2020 - Master module - 30.0 ECTS
      - 11LE13KT-Weiterf Vorlesung - Advanced Lectures - 12.0 ECTS
      - 11LE13KT-Spez Vorlesung - Specialization Course - 36.0 ECTS
      - 11LE13KT-Seminare - Seminars - 6.0 ECTS
      - 11LE13KT-Praktikum - Lab Course - 6.0 ECTS
      - 11LE13KT-Indiv STG - Customized Course Selection - 18.0 ECTS
        - 11LE13KT-Indiv STG- WVorlesung - Advanced Lecture in Customized Course Selection - 6.0 ECTS
        - 11LE13KT-Indiv STG-SpezVorl - Specialization Course in Customized Course Selection - 6.0 ECTS
        - 11LE13KT-Sprachkurs - language course - 6.0 ECTS
        - 11LE13KT-Indiv STG-FWB - Courses offered in other departments of the University
      - 11LE13KT-9140 - Study Project - 18.0 ECTS
    - gÜK - globales Überlaufkonto
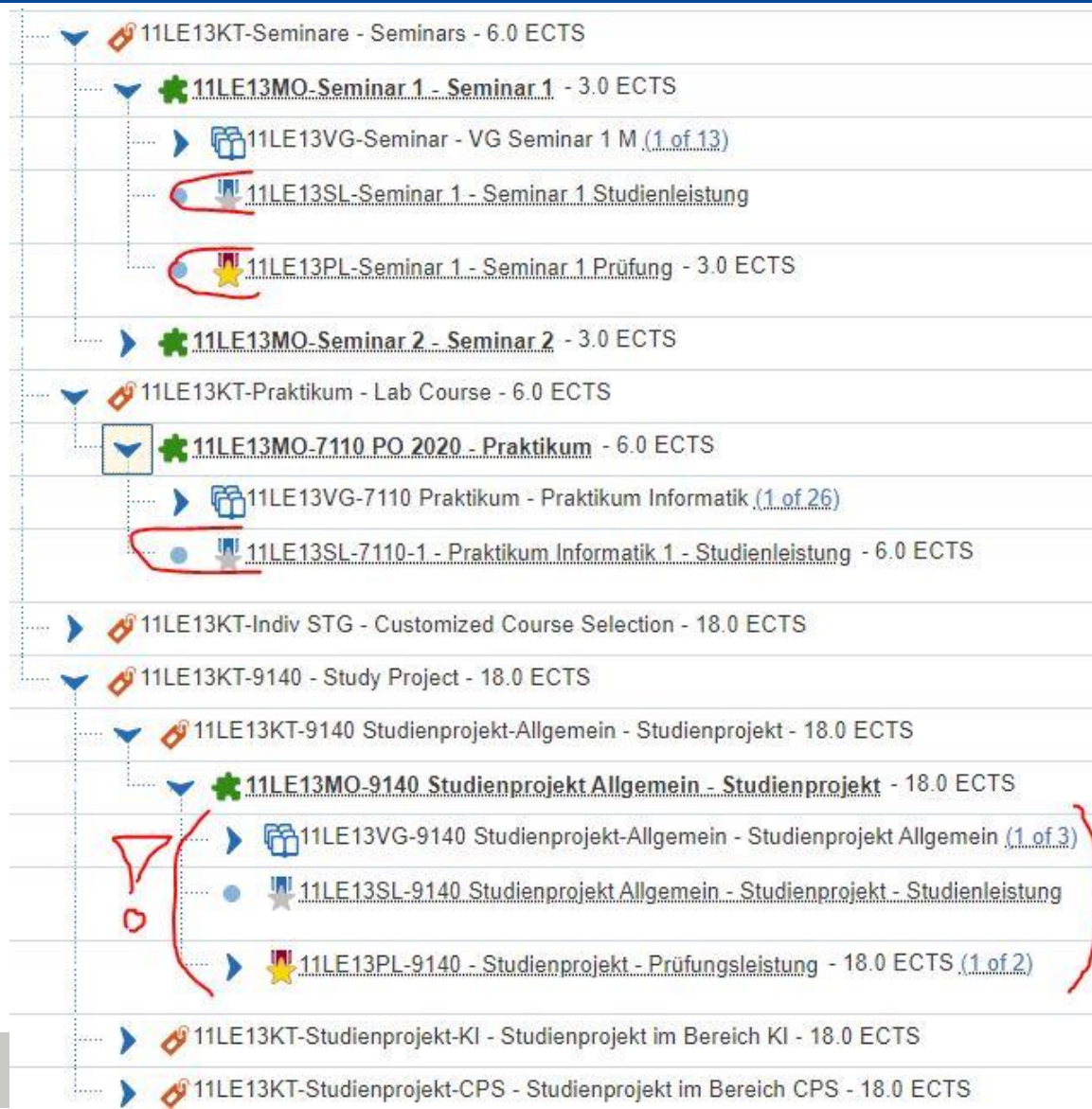
HISinOne Demo:
Module – Courses – Assessments

Structure of examination regulations - All subject related semesters	Actions	Status
▼ ◻ 11LE13PO-MSc-679-2020 - Informatik / Computer Science, M.Sc., PO 2020		
▼ 🏷 11LE13KT-9000-MSc-679-2020 - Master degree program Informatik / Computer Science, M.Sc. PO 2020 - 120.0 ECTS		
● 🏷 11LE13KT-8609-MSc-679-2020 - Preliminary average grade M.Sc. Informatik / Computer Science PO 2020		
▼ 🏷 11LE13KT-9991-MSc-679-2020 - ECTS credits account Master of Science in Informatik / Computer Science (PO-Version 2020) - 120.0 ECTS		
▶ ✚ 11LE13KT-8000-MSc-679-2020 - Master module - 30.0 ECTS		
▼ 🏷 11LE13KT-Weiterf Vorlesung - Advanced Lectures - (12.0 ECTS)		
▼ ✚ 11LE13MO-2010_PO 2020 - Algorithms Theory - 6.0 ECTS		
▶ 📖 11LE13V-2010 - Algorithms Theory - lecture course - 6.0 ECTS	🚪 apply	
▶ 📖 11LE13Ü-2010 - Algorithms Theory - Exercises - excercise course (1 of 8)	🚪 apply	
● ⭐ 11LE13SL-2010 - Algorithms Theory - course work		🕐
● ⭐ 11LE13PL-2010 - Algorithmentheorie / Algorithms Theory - Examination - 6.0 ECTS		🕐
▶ ✚ 11LE13MO-2060_PO 2020 - Datenbanken und Informationssysteme / Data Bases and Information Systems - 6.0 ECTS		
▶ ✚ 11LE13MO-2040_PO 2020 - Foundations of Artificial Intelligence - 6.0 ECTS		
▶ ✚ 11LE13MO-2050_PO 2020 - Image Processing and Computer Graphics - 6.0 ECTS		
▶ ✚ 11LE13MO-1153_PO 2020 - Machine Learning - 6.0 ECTS		
▶ ✚ 11LE13MO-2020_PO 2020 - Rechnerarchitektur / Computer Architecture - 6.0 ECTS		
▶ ✚ 11LE13MO-2030_PO 2020 - Softwaretechnik / Software Engineering - 6.0 ECTS		
▶ 🏷 11LE13KT-Spez Vorlesung - Specialization Course - (36.0 ECTS)		

HISinOne Demo:
Customized Course Selection

HISinOne Demo:
Multi-connected Elements

- Green and red arrows? Don't panic!

Part 3

Rules regarding examinations

More details will be offered by the examination office team in a presentation in a few weeks.

You'll receive an invitation via e-mail in time…

Registration for exams / graded assessments (PL)

- It's a second, independent step from booking the course.
  It's **not** done automatically!

- The procedure is *similar* to booking the courses. For a how-to, see
  https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/examinations
  Deadlines for the registration (and de-registration) for exams are also mentioned on this website.

- Without registering for an exam you are not allowed to take it,
  so **do not forget!**

- To make sure you are correctly registered, we recommend saving/printing the pdf of the in HISinOne → My studies → My course enrollments and exam registrations

How to proceed if you failed an exam

- Number of attempts are limited:

  - 2 attempts for every exam / graded assessment (if needed)

  - **2 oral or written exams** for CS lectures can be attempted **3 times**
    (This rule does not include seminars or the project!
    And it's obviously irrelevant for pass/fail courses (SL) like lab courses.)

- You are registered automatically for the repetitison(s) and **cannot sign off** !

- Repetition exam will take place in the next semester.

- You can substitute one Advanced lecture or Specialization course you failed the exam / graded assessment with another one (but it has to be done after the **first** failed attempt)

Improvement of a grade

- Repeating an exam that you have passed, to improve your mark, is possible in one module you did in your first year of studies here

- This rule applies only to written or oral for lectures + exercises (not other kinds like homework or presentations).

- You have to take the „repetition" exam directly in the following semester

- The examination with the better grade will be considered official

- If you do not attend an exam that you registered for, it counts as failed, unless you have a valid excuse.

- Valid excuses can be

    - Due to illness
      → Doctor's note required, see
      https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq

    - Due to emergencies in family etc.
      (please contact examination office immediately)

Intellectual honesty / plagiarism

- Plagiarism is:
  - Using someone else's texts, pictures, reports, data, solutions, whatever….
  - ... without citing the **source**

- Sources include:
  - Books, the internet, colleagues, …

- To make it clear:
  Plagiarism is illegal!
  It is cheating!

- The simple „if...then" loop:
  - If you cheat (once)
    → then you fail the course
  - If you cheat repeatedly (twice)
    → then you are thrown out of the program and your academic career is over

- Intellectual honesty is important! Don't pass off someone else's work as your own!

Finding information and help

Students are responsible to stay informed

- You are independent persons, expected to (mostly) self-organize and self-motivate.
  There is no service establishment catering to all your needs.

- We provide the necessary information through different sources:

  - Websites

  - Introductory events

  - Official documents (like exam regulations)

  - Information e-mails
    (Make sure to have access to your faculty user account and forward or use that e-mail address!)

- Reading is essential! Please read! The whole text, all the lines in an email, the complete instructions in exercise or exam sheet…

- *„I did not know!" is not an acceptable excuse!*

If you don't find the information, maybe try using a search engine…

Check out the information on our websites

- For new students:
  https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq/freshers-info

- Dates and deadlines:
  https://www.tf.uni-freiburg.de/en/studies-and-teaching/calendar-dates

- A to Z – Study FAQs (especially useful for information about examination related things):
  https://www.tf.uni-freiburg.de/en/studies-and-teaching/a-to-z-study-faq

- Website for your study program
  https://www.tf.uni-freiburg.de/en/study-programs/computer-science/m-sc-computer-science

- Contacts for advisory services etc.:
  https://www.tf.uni-freiburg.de/en/study-programs/counseling

When writing a mail to an advisor or the examination office…

- Please use a sensible subject

- Assume we do not know you, and we are not clairvoyant.
  So, please sign the email with your full name; your matriculation number can also be helpful, and it would be great if you mention your study program…

- Use full names of professors, supervisors or lecturers
  (we are not on first name base with everyone at the faculty)

- For a question about a new topic:
  Write a new mail and address it (correctly) yourself.
  Don't "answer" to older information mails from us.

- If it is urgent, indicate this in the subject line! Our responses to mails not classified as urgent can take quite a while and we try to prioritize.