Master Computer Science

Introduction

Florian Frohn   —   Academic Advisor

Overview

Outline

Master Computer Science — Florian Frohn — Academic Advisor — 09.10.2023

Outline

Goals of the Master Program

Broad Education

↷ you have to choose modules from multiple areas

Deep Education

- we encourage specialization
- focus colloquium

Independence

- You are responsible for your studies!
- no fixed study plan
- no mandatory courses
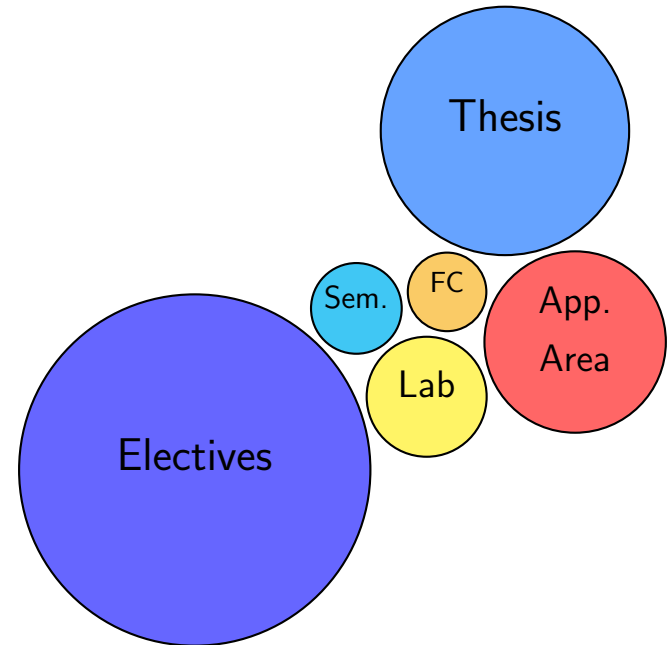
Qualification

- for leadership positions
- for PhD

Structure of the Master Program

Electives	58 – 66 CP
Seminar	4 CP
Lab	7 CP
Focus Colloquium	3 CP
Application Area	10 – 18 CP
Thesis	30 CP
Course on Scientific Integrity	0 CP
Requirements	0 – 42 CP
Voluntary Additional Courses	$0 - \infty$ CP

Σ $\qquad \geq 120$ CP + Requirements

> 120 CP

all courses count fully, or not at all

Outline

Electives

Areas

Theoretical CS	Visual Computing & Interaction	AI & Data	Software Methods & Tools	Hardware/Software Systems
≥12 CP	two times ≥12 CP			
Algorithms	Computer Graphics	Language Processing	Project Management	IT-Security
Logic	VR	Data Science	Quality Assurance	Embedded Systems
Verification	Computer Vision	Machine Learning	HPC	Internet Technology
. . .	. . .	. . .	. . .	. . .

only electives count for the limits above

Electives

General Information

Components	
lecture	typically 3h/week
exercise	typically 1-2h/week
exam	at end of semester

Admission for Exams

- teachers fix admission criteria
  - achieve minimum score in exercises
  - midterm exam
  - ...
- admission valid for only one year

Registration

- via RWTH Online
  you automatically get access to RWTHmoodle, mailing list, ...
- no unified registration period
- ⚡ separate registration for exam!

Always go to the first lecture!

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Electives

RWTH Online

Campus Management System

- overview of courses for...
  - the current semester
  - the whole master program
- registration for most modules & exams
- overview of grades
- calendar with your courses
- . . .

URLs

- RWTH Online: `https://online.rwth-aachen.de`
- Manuals: `https://wiki-intern.rwth-aachen.de/display/RD/FAQ+for+Students`

Registration – Live Demo

<p style="text-align:center; color:blue;">RWTH Online – Test System</p>

Electives

Exams

General Information

- written or oral
- 2 exams at end of semester
  - might differ in application area
- you cannot repeat passed exams
- after 3 failures: choose different elective

Registration

- separate registration for **each** exam
- standard registration periods
  - 1st exam: 1.10. – 15.12.
  - 2nd exam: until 7 days before the exam
  - ⚡ Teachers may modify these dates!
- registration for 2nd exam after results of 1st exam were published

Deregistration – https://www.rwth-aachen.de/go/id/eir/lidx/1

Until 3 working days before. If you are ill...

- doctor's certificate issued on or before the day of the exam
- must indicate that you cannot take exams on that day
- ⚡ No "not fit for work" certificates!
- must be at ZPA on the 3rd working day after the exam

Electives

Central Examination Office
Zentrales Prüfungsamt (ZPA)

What they do

- examination administration
- recording of grades
- exam registrations
- exam deregistrations / withdrawal
- admission check for thesis
- issues various certificates
- . . .

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Registration – Live Demo

RWTH Online – Test System

Outline

Seminar and Lab

What it is about

offered by all CS-chairs, various topics

Seminar

- independent work (with supervision)
  ↪ no collaboration with other students
- topic from the literature
- written report & presentation

- usually as "Blockseminar"
  ↪ all talks within a few days after lecture period
- (rare) alternative: weekly meetings

Lab

- collaborate in small groups
- usually software projects

- details differ, depending on the organizer
- ⚡ No industry internships!

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Organizational Matters

General Information

- starts with kickoff-meeting
- seminar / lab passed ↷ you cannot take another one
- withdrawal possible until 3 weeks after distribution of topics
- ⚡ 3 fails ↷ end of studies!

Registration – https://supra.informatik.rwth-aachen.de/

- central distribution system
- registration in June/July for winter term, December/January for summer term
- further information in kickoff-meeting

Focus Colloquium

Outline

Focus Colloquium

What it is about

- oral exam
- 3 courses
- topics must be connected
  - electives you've done ✓
  - electives you've done during your bachelor ✓
  - electives you haven't done ✓
  - seminar ✓
  - lab ✓
  - courses from different professors ✓
  - courses from different research groups ✓
  - mandatory bachelor courses ✗

Why it is important

- "just" 3 CP
- ⚡ Counts **four-fold** for your final grade!

Finding & Registering a Topic

- ⚡ Start planing **now**!
- ⚡ Have a **plan B**!
- contact professors – they must approve your choice of modules
- ⚡ Schedule in time!
- registration by examiners

Course on Scientific Integrity

Outline

Course on Scientific Integrity

https://www.rwth-aachen.de/go/id/mylsw/lidx/1/

- online course
- provided via Moodle
- exam
  - online
  - twice per semester
- mandatory for all master (and PhD) students
- required for registering your thesis

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Outline

General Information

General Information

- thesis: 27 CP
- presentation: 3 CP
- two reviewers
  - grade: average
- 6 months

Prerequisites

- $\geq$ 60 CP
- requirements
- course on scientific integrity

What if I fail?

- can be repeated **once**
- ⚡ You must register for a new thesis within 3 semesters!

Registration – `pa.informatik.rwth-aachen.de/application/register-thesis`

- online, via request to the examination board
- examination board informs you about deadline

Thesis

Finding a Topic

Where?

- CS professors only
- ⚡ no topics from industry
- ⚡ no topics from other departments
  - even if they advertise them...
  - rare exception: cross assignments
- typically within your "specialization"

How?

- check websites
- get in touch
- get connected
  - supervisor from seminar
  - supervisor from lab
  - become a student assistant

When?

- may take time
- may require training period
- ↝ start planing several months ahead

Pitfalls

- ⚡ popular specialization ↝ hard to find topics
- ⚡ professors / scientific staff may leave
- ⚡ Think about your specialization(s) **now**!
- ⚡ Have a **plan B**!
- last resort: request "support for finding a thesis" at examination board

Paperless – the Examination Board's Online System

Paperless

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Outline

Application Area

How it works

Choose non-CS modules from large catalog, including...

- Business Administration
- Electrical Engineering
- Mathematics
- Philosophy
- Mechanical Sciences
- Medical Sciences
- Physics
- Biology
- Chemistry
- Psychology
- . . .

new in WS 23/24: no need to decide for one of the areas above

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Requirements

Outline

Requirements

What they are

- Bachelor modules
- have to be done in addition to your master studies
  - no influence on standard period of study

Practical Information

- listed in admission letter
- registration via RWTH Online
  - ⚡ exception: "elective course from Theoretical Computer Science"
  - ↷ register at ZPA
- no grades
- required for registering your thesis

Outline

Voluntary Additional Courses

What can I choose?

arbitrary RWTH courses – if the examiners allow it

How does it count?

- grades on final certificate
- no impact on overall grade

Registration

- ideally RWTH Online
- otherwise: get in touch with examiners
- have to be declared at ZPA
    - ⚡ until 1 week after you get your last grade

Outline

Choosing Electives

- video introductions to electives

  `https://sc.informatik.rwth-aachen.de/de/wahlpflicht/`
- RWTH Online
- group websites

  `http://www.informatik.rwth-aachen.de/`
- unofficial info page

  `https://rwthoffline.de/`
- Go to lectures at beginning of semester!

Outline

Staying Abroad

Where?

Partner universities!

When?

- anytime
- 4 semesters pass by quickly

↷ Start planning now!

How?

- learn teaching language
  - RWTH language center
- no extension of study duration – with good planning
  - transfer of credits
  - leave of absence
- dedicated academic advisor – `student-exchange@cs.rwth-aachen.de`

`https://www.comsys.rwth-aachen.de/teaching/outgoings/`

Further Information

Outline

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Further Information

- mentor program
  - registration via RWTH Online
- Center of Studies – Computer Science
- mailing list
  - `msinf@lists.rwth-aachen.de`
  - you're subscribed automatically
- Student Advice Center
  - for questions that are not specific to your course of studies
  - workshops, talks, . . .
- Allgemeiner Studierendenausschuss
  - university-wide student organization
- Fachschaft
  - student organization of the departments CS, Mathematics, and Physics
- Computer Science Library
- Main Library

Thank you for your attention

Any questions?