Introduction to the master’s programme in Computer Science (N2COS)

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Welcome!
A “shared” department

The Department of Computer Science and Engineering…

- ...is shared between two universities:
  - The University of Gothenburg (GU).
  - Chalmers University of Technology (Chalmers).

- ...is split between two campuses:
  - Johanneberg.
  - Lindholmen.

Some teachers are employed at one university, some at the other.
A “shared” department

Many courses have students from both universities.

- Syllabi, exams etc.: Typically similar.
- Grading systems: Sometimes different.
- Typical grading systems for our GU courses:
  - Fail (U), pass (G),
    pass with distinction (VG).
  - Fail (U), 3, 4, 5.
- One course code for GU, one for Chalmers.
Research at the department

Divisions:

- Computer and Network Systems.
- Computing Science.
- Data Science and AI.
- Interaction Design and Software Engineering.
The programme

- Plenty of choice.
- You can create your own profile.
- More information about courses offered during the spring will be sent out later.
From the *programme syllabus*:
“to complete the degree students must complete 120 credits of which at least 45 credits in second-cycle courses within the main field of study Computer Science, excluding the thesis project. In addition a Master’s thesis project of at least 30 credits has to be completed within the main field of study Computer Science.”
Requirements

From the programme syllabus:
“The following course is compulsory:
  ▶ DIT199 The Computer Scientist in Society, 7.5 credits.
In addition one of the following two courses have to be completed:
  ▶ DIT910 Master’s Thesis in Computer Science and Engineering, 30 credits.
  ▶ DIT920 Master’s Thesis in Computer Science and Engineering, 60 credits.”
“to complete the degree students must complete 120 credits”

- “Normal” pace: 60 credits/year.
- Four study periods/year.
- A typical course: 7.5 credits.
- A typical study period: two courses.
Requirements

“at least 45 credits in second-cycle courses within the main field of study Computer Science, excluding the thesis project”

- Take care!
- Some courses are not second-cycle courses.
- Some courses have another main field of study (see the syllabi).
- Some courses have specific prerequisites. Plan ahead!
Second cycle courses in computer science

- Computer architecture
  - Parallel Computer Architecture
  - Sustainable computing
- Computer systems and networks
  - Real-Time Systems
  - Distributed Systems
  - Computer Networks
- Operating Systems
- Algorithms
  - Algorithms
  - Discrete optimization
  - Computational Methods in Bioinformatics
- Machine learning
  - Machine learning for natural language processing
  - Deep machine learning
  - Advanced topics in machine learning
- Data
  - Computational techniques for large-scale data
  - Architectures for scale-out systems
- Machine learning methods
  - Machine learning for natural language processing
  - Deep machine learning
  - Advanced topics in machine learning
- Data
  - Computational techniques for large-scale data
  - Architectures for scale-out systems
- Programming language, logic, verification
  - Logic in Computer Science
  - Formal Methods in Software Development
  - Compiler Construction
- Programming Language Technology
  - Types for Programs and Proofs
  - Computationality
- Graphics
  - Computer Graphics
  - Advanced Computer Graphics
- Interaction design
  - Human-centered design and human factors
  - Designing user experiences
  - Graphical Interfaces
  - Tangible interaction
  - Prototyping in interaction design
- Special courses
  - Project in computer science
  - Research-oriented course in Computer Science and Engineering
  - Research oriented course in data science and AI
- Cyber-physical systems
  - Data-driven support for cyber-physical systems
  - Autonomous and Cooperative Vehicle Systems
- Computer systems and networks
  - Technical writing in computer systems and networks
  - Distributed Systems, Advanced Course
- Computer systems and networks
  - Technical writing in computer systems and networks
  - Distributed Systems, Advanced Course
  - Computer Networks
  - Operating Systems
  - Algorithms
  - Discrete optimization
  - Computational Methods in Bioinformatics
  - Machine learning
  - Machine learning for natural language processing
  - Deep machine learning
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  - Computational techniques for large-scale data
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  - Graphics
  - Computer Graphics
  - Advanced Computer Graphics
  - Interaction design
  - Human-centered design and human factors
  - Designing user experiences
  - Graphical Interfaces
  - Tangible interaction
  - Prototyping in interaction design
  - Special courses
  - Project in computer science
  - Research-oriented course in Computer Science and Engineering
  - Research oriented course in data science and AI
“a Master’s thesis project”

- Typically 30 credits, 60 credits possible.
- Alone or in pairs.
- You can start thinking about the general area of the thesis now, and discuss topics with teachers or other researchers.
- Note that if you do not specialise in anything, then it might be hard to find a thesis topic.
Requirements

“a Master’s thesis project”

Prerequisites (DIT910, DIT920):

- “60 credits [...] on the advanced level”
- “45 credits [...] within the main field of study”
- “within the [...] main field of study”
- “approved by the Head of the Programme”
- “approved by an examiner”
- “prerequisites within the subject area”
- And more.
“The following course is compulsory:

- **DIT199** The Computer Scientist in Society, 7.5 credits.”

- In this course you can write a proposal for your thesis project.
- Recommendation: Take this course shortly before starting the thesis project.
Monaden

- An area for you (as well as some other students).
- Kitchen.
- Seating.
- Rännvägen 6.
If you have questions

- Programme supervisor (currently nad@cse.gu.se).
- Examiner:
  For questions related to individual courses.
- Student office (student_office.cse@chalmers.se):
  For instance for questions regarding registration and access to the learning platform (Canvas).
- Study counsellor (svl@cse.gu.se):
  For instance for questions regarding how to choose courses.
A second-year student
Mingle

- A chance to get to know your fellow students.