BACHELOR DEGREE IN COMPUTER SCIENCE

BACHELOR'S DEGREE PROGRAM

1. Structure of the Bachelor's Degree Program

    I.   Box diagram

    II.   Elective courses

2. Computer Science with a minor subject

3. External Collaboration

4. Practical information

Link to current slides: www.cs.au.dk/study

YEAR 2023 AND LATER

1st sem.	Introduction to programming (10 ECTS)	Algorithms and data structures (10 ECTS)	Introduction to Mathematics and Optimisation (10 ECTS)
2nd sem.	Databases (10 ECTS)	Programming Languages (10 ECTS)	Computability and Logic (10 ECTS)
3rd sem.	Software Engineering and Architecture (10 ECTS)	Human-Computer Interaction (10 ECTS)	Introduction to Probability Theory and Statistics (10 ECTS)
4th sem.	Computer Architecture, Networks and Operating Systems (10 ECTS)	Experimental system development (10 ECTS)	Numerical Linear Algebra (10 ECTS)
5th sem.	Compilation (10 ECTS)	Distributed Systems and Security (10 ECTS)	Elective (10 ECTS)
6th sem.	Bachelor's Project (15 ECTS)	Philosophy and Ethics of Computer Science and IT Product Development (5 ECTS)	Optimization (10 ECTS)

Legend:
- 🟧 Auxiliary subject
- 🟩 Compulsory (only CS)
- 🟩 Compulsory (CS & IT)
- 🟦 Elective

RECOMMENDED ELECTIVES

Computer Science

- Machine Learning (10 ECTS)
- Physical computing (10 ECTS)
- Begin on a master specialisation
  - Remember to check the course prerequisites.
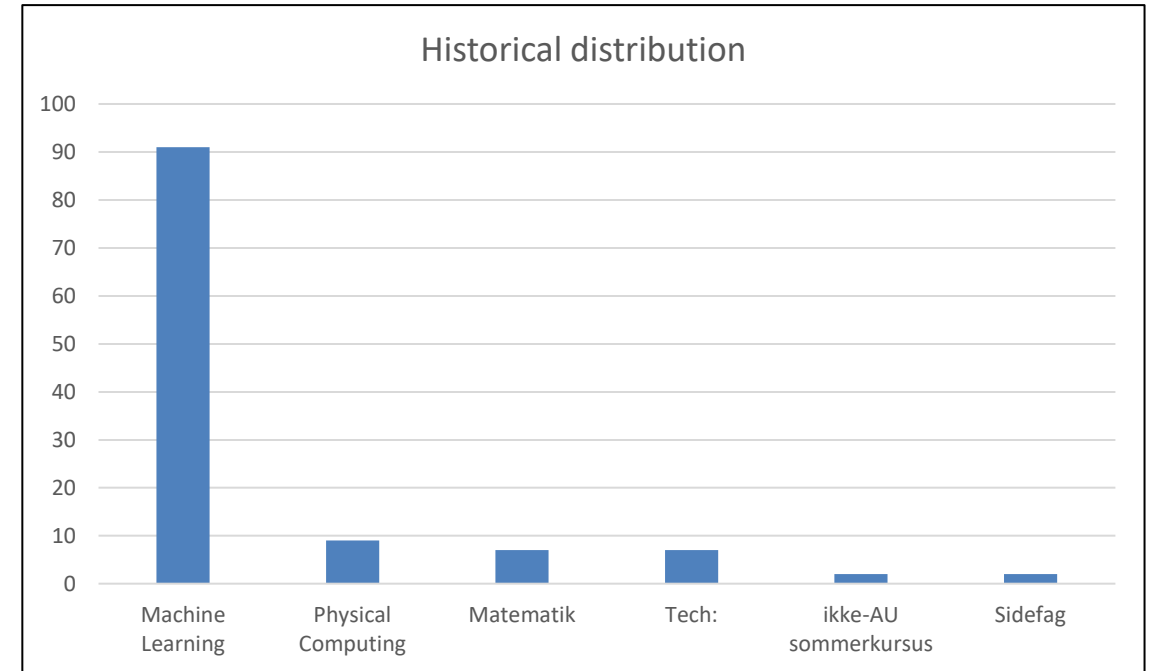
Math

- Indledende algebra 1+2 (5+5 ECTS)

Tech (Computer Engineering)

- Digitale kredsløb (5 ECTS)
- Computerspilteknologier (5 ECTS)

Arts (Digital Design & Information Science)

- Data og digital kultur (10 ECTS) [master]

Note that courses from Arts require skill academic writing and text analysis in the tradition of humanities.

Historical distribution

If you fail an exam in an elective course, then that course has become **mandatory**! If you have made an erroneous choice of an elective course, please contact us for guidance immediately!
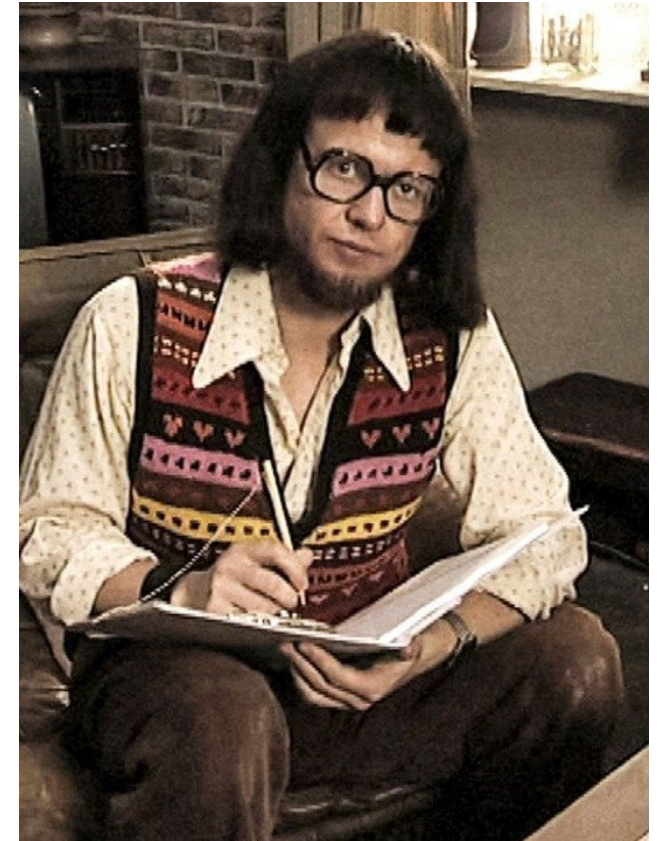
COMPUTER SCIENCE WITH A MINOR SUBJECT

BECOME A HIGH SCHOOL TEACHER?

Informatik

- Mandatory subject on C-level for HHX.
- Elective on several STX and HTX both C. B and A level some places.
- **Hugh demand for teachers in Informatik in high schools!**

Programmering

- Elective on several STX and HTX both C and B level.

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COMPUTER SCIENCE WITH A MINOR SUBJECT

- A Computer Science bachelor and master degree with a minor subject allows you to teach in Informatik and Programmering (major) as well as your minor subject.

- The minor subject replaces some of the course in the box diagram on the bachelor and master programme. In total the minor is 90 ECTS for minors at Natural Science and 120 ECTS outside Natural Science.

- Minor subjects from NAT (90 ECTS):
    - Mathematics, Physics, Chemistry, Biology

- Minor subjects outside NAT (120 ECTS):
    - Several options – traditional high school subjects: http://bachelor.au.dk/tilvalg/
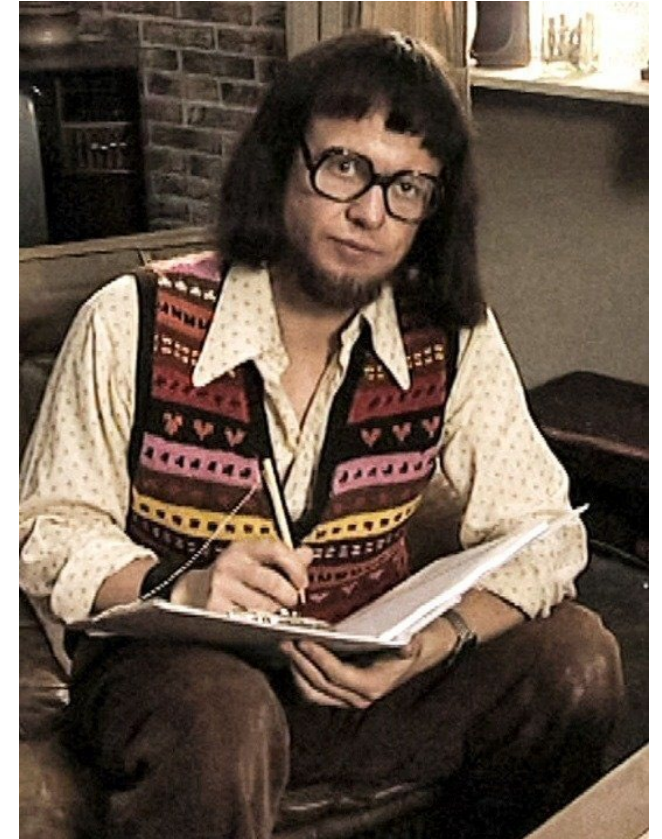
COMPUTER SCIENCE BACHELOR WITH A MINOR SUBJECT

1st sem.	Introduction to programming (10 ECTS)	Algorithms and data structures (10 ECTS)	Introduction to Mathematics and Optimisation (10 ECTS)
2nd sem.	Databases (10 ECTS)	Programming Languages (10 ECTS)	Computability and Logic (10 ECTS)
3rd sem.	Software Engineering and Architecture (10 ECTS)	Human-Computer Interaction (10 ECTS)	Introduction to Probability Theory and Statistics (10 ECTS)
4th sem.	Computer Architecture, Networks and Operating Systems (10 ECTS)	Elective (10 ECTS)	Numerical Linear Algebra (10 ECTS)
5th sem.	Minor subject (45 ECTS)		
6th sem.		Philosophy and Ethics of Computer Science and IT Product Development (5 ECTS)	Bachelor's Project (10 ECTS)

Legend:
- Auxiliary subject
- Compulsory
- Minor Subject
- Elective

Name: "Datalogi med bachelortilvalg
- Application deadline: 15th of April
- http://bachelor.au.dk/tilvalg/ba-tilvalg/

The elective moves to 4th semester and can be:
- Experimental system development (10 ECTS), Optimization (10 ECTS)
- Compilation (10 ECTS), Distributed Systems and Security (10 ECTS)

Differences in the placement of course in the box diagram can occur.

COMPUTER SCIENCE MASTER WITH A MINOR SUBJECT

Mathematics, Physics, Chemistry, Biology (90 ECTS in total – 45 + 45):

1st sem.	Distributed Systems and Security (10 ECTS)	Mandatory courses from Computer Science under guidance (25 ECTS)
2nd sem.	Organizing and Business Models for IT Innovations (5 ECTS)	
	Informatikkens fagdidaktik (5 ECTS)	
3rd sem.	Minor Subject (45 ECTS)	
4th sem.	Speciale (30 ECTS)	

Outside Natural Science (120 ECTS in total – 45 +75):

1st sem.	Distributed Systems and Security (10 ECTS)	Mandatory courses from Computer Science under guidance (25 ECTS)
2nd sem.	Organizing and Business Models for IT Innovations (5 ECTS)	
	Informatikkens fagdidaktik (5 ECTS)	
3rd sem.	Minor Subject (75 ECTS)	
4th sem.	Thesis (30 ECTS)	

Name: Datalogi med kandidattilvalg

- Applicant deadline is the same as for full master degree programmes
- You need a bachelor with a minor http://bachelor.au.dk/tilvalg/kandidattilvalg/

Differences in the placement of course in the box diagram can occur.

Ideally the thesis should combine both Computer Science and the minor subject.

- Computer Science
- Minor Subject

EXTERNAL COLLABORATION

Types of collaboration

- Vocational Training Project

- Bachelor's project

- Master's Thesis

- In connection with a specific course

Further information:
https://studerende.au.dk/en/studies/subject-portals/computer-science/project-collaboration

General information regarding collaboration and external partners

- Find a company and a main supervisor from AU who will be part of the project

- Check whether you need additional contracts (Fast Track), NDA's or copyright

- Create a contract for Vocational Training Project via project generator
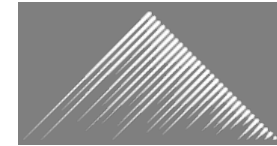
Student Entrepreneurship at CS

HatchIT Lab

- Local student entrepreneurship hub at CS
- Office Space and access to facilities at CS Dept.
- Networking with other CS student startups
- HatchITlab.au.dk

The Kitchen AU

- Central AU Entrepreneurship hub
- Funding support
- Business developers and advisors/mentors
- Workshops and events for entrepreneurs
- Thekitchen.io

HatchIT Lab
Student Entrepreneurship at CS

50+
Student Entrepreneurs

10+ mio dkk
Investment and external funding

50+
Jobs created

STUDENT JOBS

www.cs.au.dk/jobwall
www.cs.au.dk/businessclub

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PRACTICAL INFORMATION

CONTRACTS

Study Contract

- Complete the contract before signing up for the first course(s)
  - Also in case of temporary admission
  - You may only sign up for courses mentioned in your contract
- Revise at semiannual interviews in April and October
  - You will receive an email invitation
  - You will have a friendly chat with Andreas and Søren

Project Work Contract

- In addition to signing up for a project work / vocational training project (erhvervsprojekt) you must also make a contract

Thesis Contract

- Fill out at start of thesis work

All contracts are created through: http://kontrakt.nattech.au.dk/

Steps:
1. Decide on course for the coming semester
2. Submit a master contract and have it approved
3. Register for course before the deadline

SIGNING UP FOR COURSES

Sign up

- May 1-5 for courses in the Fall
- November 1-5 for courses in the Spring
- Advance approval of credit transfer is needed for courses from outside Nat-Tech,
  - Outside AU: see https://studerende.au.dk/en/studies/subject-portals/computer-science/rules-and-guidelines/credit-transfer.
  - Outside Nat-Tech, but inside AU: see https://studerende.au.dk/en/studies/subject-portals/computer-science/rules-and-guidelines/enrolment-in-a-credit-module.
  - Apply well in advance!
  - Advance approval of credit transfer is no guarantee that you will be admitted to the course!

For courses in the summer, see
https://studerende.au.dk/en/summeruniversity

Schedule for elective courses

- Watch out for collisions
- You may find the schedule for courses offered by the Department of Computer Science at https://timetable.au.dk/

STUDENT COUNSELOR

Nikolaj Beck Mikkelsen

- www.cs.au.dk/vejleder
- Studievejledning4.nat-tech@au.dk
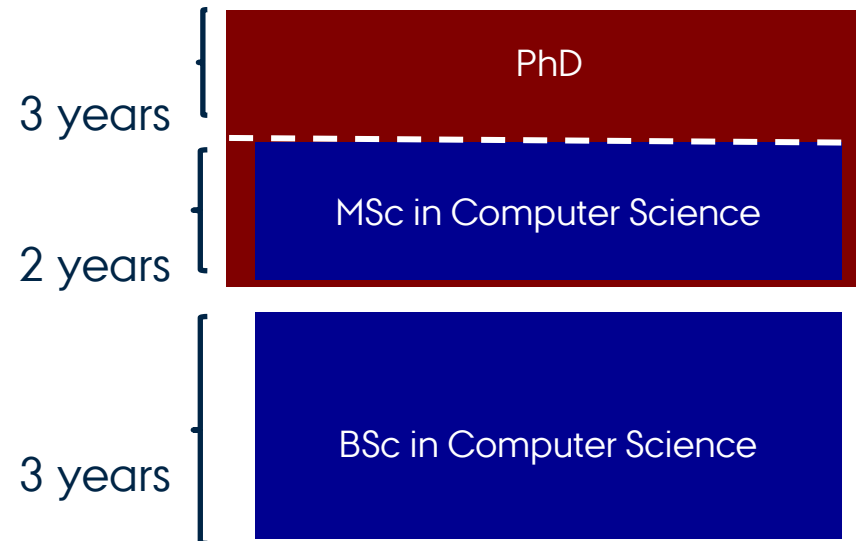
Possible topics

- Change of study program, delay, leave of absence, withdrawal.
- Illness.
- Study regulations
- Selecting supplementary subjects.

PHD STUDIES?

Apply for PhD studies!

- https://phd.nat.au.dk/programmes/computer-science/
- You receive a salary while studying!
- Apply for PhD studies directly following your Bachelor's degree, during you Master's studies or following your Master's degree.
- For deadlines see https://phd.nat.au.dk/for-applicants/
- Contact Anders Møller for info http://pure.au.dk/portal/en/amoeller@cs.au.dk

3 years — PhD

2 years — MSc in Computer Science

3 years — BSc in Computer Science

ADVICE

- If you follow the recommended program of study (30 ECTS per semester), take courses in the correct order (the Box Diagrams) and pass all courses at the ordinary exam or at the first scheduled re-exam then you need not worry about the study progress reform.

- If you fall behind or do not pass a course at the latest by the first reexamination, then contact ua@cs.au.dk or the student counselor for advice and guidance on your individual study program as soon as possible. The earlier you reach out the better.

- You have a max study time, if you do not complete your master's program within six months after the prescribed time you are automatically signed out of the study program / out of the university https://studerende.au.dk/en/studies/subject-portals/computer-science/rules-and-guidelines/maximum-duration-of-study.

- If you fail an exam in an elective course, then that course has become **mandatory.** If you have made an erroneous choice of an elective course, please contact ua@cs.au.dk or the student counselor for guidance immediately!