Master’s Degree Programme
IT Product Development

Revised 27 March 2019
Master’s Degree Programme

- Important choices
- Structure of the Master’s Degree Programme
- Admission
- Practical information

Slides: www.cs.au.dk/studieorientering
Important Choices

During Master’s degree studies:

- Specialization / elective courses?
- Study abroad?
- ph.d.?
## IT Product Development Bachelor (2017 onwards)

<table>
<thead>
<tr>
<th>1st sem</th>
<th>Foundations of IT Product Design (10 ECTS)</th>
<th>Introduction to Programming (10 ECTS)</th>
<th>Calculus alpha (10 ECTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Sem</td>
<td></td>
<td>Database Systems (5 ECTS)</td>
<td>The Web of Things (5 ECTS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IT Product Design Project (20 ECTS)</td>
<td></td>
</tr>
<tr>
<td>3rd Sem</td>
<td>Physical Computing (10 ECTS)</td>
<td>Human-Computer Interaction (10 ECTS)</td>
<td>Software Engineering and Architecture (10 ECTS)</td>
</tr>
<tr>
<td>4th Sem</td>
<td>Computer Architecture, Networks and Operating Systems (10 ECTS)</td>
<td>Experimental Systems Development (10 ECTS)</td>
<td>Introductory Statistics and Data Analysis Using R (5 ECTS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Organizing and Business Models for IT-Innovations (5 ECTS)</td>
</tr>
<tr>
<td>5th Sem</td>
<td>Design as Products, Services, Systems and Experience (10 ECTS)</td>
<td>Distributed Systems and Security (10 ECTS)</td>
<td>Elective (recom: Foundations of Algorithms and Data Structures) (10 ECTS)</td>
</tr>
<tr>
<td>6th Sem</td>
<td>Shape-changing Objects and Spaces (10 ECTS)</td>
<td></td>
<td>Philosophy of Information Tech (5 ECTS)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Bachelor Project (15 ECTS)</td>
</tr>
</tbody>
</table>

- Taught in **Danish**, except for courses marked 🇬🇧
- Bachelor in IT (product development) or similar is prerequisite for master level courses in IT product development

**IT Product Development Master's Programme**

- Math support
- It (only)
- It (and cs)
- Elective
Master’s Degree Programme

- Important choices
- **Structure of the Master’s Degree Programme**
  - Box diagram
  - Specializations
  - Elective courses
  - Study abroad
- Admission
- Practical information
**IT Product Development Master**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Sem (Fall)</td>
<td>Elective (10 ECTS)</td>
</tr>
<tr>
<td></td>
<td>UBI 1</td>
</tr>
<tr>
<td></td>
<td>Design 1</td>
</tr>
<tr>
<td>2nd Sem (Spring)</td>
<td>UBI 2a (5 ECTS)</td>
</tr>
<tr>
<td></td>
<td>Design 2a</td>
</tr>
<tr>
<td></td>
<td>Innovation Project (20 ECTS)</td>
</tr>
<tr>
<td>3rd Sem (Fall)</td>
<td>Study abroad / elective courses (30 ECTS)</td>
</tr>
<tr>
<td>4th Sem (Spring)</td>
<td>Thesis</td>
</tr>
<tr>
<td></td>
<td>(30 ECTS)</td>
</tr>
</tbody>
</table>

- Programme must include all green courses
- Programme must include at least one of HCI 1, HCI 3, UBI 3

**Specializations:**

- Socio-Technical Design
  - Design 1
  - Design 2a
  - Design 3

- HCI
  - HCI 1
  - (HCI 2)
  - HCI 3

- Ubiquitous computing and Interaction
  - UBI 1
  - UBI 2a
  - (UBI 2b)
  - UBI 3

**Shared with CS**
Socio-Technical Design

1st sem (Fall) | Social and Aesthetic Interaction Design (10 ECTS) | PGK
2nd Sem (Spring) | Designing Urban Interventions (5 ECTS) | MP
3rd Sem (Fall) | Sustainable Design and Production (10 ECTS) | DR

- First 15 ECTS are mandatory courses

Socio-Technical Design
- Peter Gall Krogh
- Majken Kirkegård Rasmussen
- Minna Pakanen

Lifecycle Design and Manufacturing
- Devarajan Ramanujan
Ubiqitous Computing and Interaction

1st sem (Fall)
- Building the Internet of Things with P2P and Cloud Computing (10 ECTS)  NOB

2nd Sem (Spring)
- Augmented Reality (5 ECTS)  KG
- Advanced Augmented Reality Project (5 ECTS)  KG

3rd Sem (Fall)
- Data Visualization (10 ECTS) OR
- Deep Learning for Visual Recognition (10 ECTS)  H-JS

- First 15 ECTS are mandatory courses
- Advanced Data Management and Analysis (10 ECTS) from the Data-Intensive Systems group can also be taken in 3rd semester

Ubiqitous Computing and Interaction
- Kaj Grønbæk
- Niels Olof Bouvin
- Marianne Graves Petersen
- Jo Vermeulen
- Hans-Jörg Schultz
## Human-Computer Interaction

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>ECTS</th>
<th>Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Sem (Fall)</td>
<td><strong>Interactivity and Computer Mediation – Concepts, Theories, Methods, Cases (10 ECTS)</strong></td>
<td></td>
<td>SB</td>
</tr>
<tr>
<td>2nd Sem (Spring)</td>
<td><strong>Designing Interactive Technologies (10 ECTS)</strong></td>
<td></td>
<td>SB</td>
</tr>
<tr>
<td>3rd Sem (Fall)</td>
<td><strong>Multimodal Interaction (10 ECTS)</strong></td>
<td></td>
<td>EH</td>
</tr>
</tbody>
</table>

- Semesters are independent

## Computer Mediated Activity
- Susanne Bødker
- Olav Bertelsen
- Eve Hoggan

## Use, Design and Innovation
- Morten Kyng
Elective Courses (Fall 2019)

In addition to earlier mentioned specialization courses

- **CS**
  - Interdisciplinary Digital Entrepreneurship (10 ECTS)
  - Project Work in IT Product Development (5 or 10 ECTS)
  - (Summer 2019:) Identity and Privacy (5 ECTS)

- **ENG**
  - Internet of Things Technology (10 ECTS)

- **Arts**
  - Audio Visuality (10 ECTS)
  - Digital Culture (10 ECTS)
  - Digital Aesthetics (15 ECTS)
  - Digital Economies and Innovation (10 ECTS)
  - (Summer 2019:) Game.Play.Design (10 ECTS)

- **BSS**
  - Marketing and Consumer Behaviour (10 ECTS) [bach]
  - Product Development and Innovation Management (10 ECTS)
Choices

- Select elective courses to build your personal competence profile with a view towards the final thesis writing
- Study abroad: select university and courses to support and strengthen your specialization
- Thesis: you should contact an advisor early (prior semester)
Recent Master’s Theses

- Using Projection Mapping Display to Extend the Current Shopping Experience by Creating an Engaging, Social Experience when Customizing Fashion.
- Assessing the Design Space and Potential of Floor Markings.
- Developing A Context-Aware Skiing Analysis Application.
- A High Throughput Sensor Data Architecture.
- Enhancing Stage Performance Of Digital Music Instruments.
- Introducing Product Experience Into Assistive Technology.
- Work or Play? – A Qualitative Study of The User Experience in Competitive Gaming.
- Mapping Artifact Ecologies In Precision Farming.
- Hap Trace: A System For Indicating Distance With Haptic Feedback.
- Fostering Learning-Through-Design.
- Designing Interactive Interiors For Value-Driven Healthcare Informed By Socio-Spatial Concerns.
- Increasing Economic Awareness Using Emergent Displays In A Domestic Context.
- Together Together. Utilizing Scattered Activities In Designing Technology For Family Life.
- Designing For Interaction Proxemics With Mobile Devices And Sensor Spaces.
- Exploring Sensory, Imaginative, And Challenge-Based Immersion By Digitally Augmenting Board Games.
- Clockwork - Designing For Reflection.
- Skyline Outlier Ensemble.
- Exploring The Design Space of an Office Chair: Qualities and Challenges of Embedded E-Textile Interaction.
- Augmenting Play Bases.
Study abroad

- General information (destinations, deadlines, procedures, etc)

- Study Abroad Fair 4 October 2018:
  - [http://studerende.au.dk/au-study-abroad-fair/](http://studerende.au.dk/au-study-abroad-fair/)

- Application Deadline: 1 December 2018

- Selected destination:
  - TuE i Eindhoven has a semester from their ID Master module that fits nicely into an AU IT Product Development program:
  - Contact: Søren Poulsen
Study abroad

- **Credit transfer /course selection**
  - Select potential universities based on course offerings [http://scitech.studyabroad.au.dk/](http://scitech.studyabroad.au.dk/).
  - Apply for exchange through AU GO (opens for application approx 1 week before deadline) [http://scitech.studyabroad.au.dk/](http://scitech.studyabroad.au.dk/).
  - When you have been admitted for exchange at specific university you need **advance approval of courses**.
  - If foreign university allows less than 30 ECTS then top up with summer courses or project work.
  - Update Master’s contract /book an interview.
  - Contact Gudmund/Søren

- **Other aspects?**
  - Contact Mette Glerup Thomsen, ST international coordinator, [http://studerende.au.dk/studier/fagportaler/datalogi/udlandsophold/kontakt/](http://studerende.au.dk/studier/fagportaler/datalogi/udlandsophold/kontakt/)
Master’s Degree Programme

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Admission

- When bachelor completed
- You apply for admission into Master's Programme
- ... or apply for admission into PhD studies
- Admission
  - You must actively apply for admission
  - You must actively apply for SU
  - Making a study programme (contract) does not suffice

http://kandidat.au.dk/optagelse/adgangskrav/
Temporary Admission

- If you lack X<30 ECTS in your bachelor, you may for a 6 months period take 30-X ECTS courses to be part of your future Master’s Programme.
- No temporary admission if you still lack a mandatory course and you have failed it twice!
- Never delay (re)examination in a mandatory course!
- This might have SU-related consequences!
PhD studies?

- Apply for PhD studies!
  - For deadlines see [http://talent.au.dk/phd/scienceandtechnology/opencalls/](http://talent.au.dk/phd/scienceandtechnology/opencalls/)
  - You receive a salary while studying!
  - [http://talent.au.dk/phd/scienceandtechnology/programmes/computer-science/](http://talent.au.dk/phd/scienceandtechnology/programmes/computer-science/)
  - Apply for PhD studies directly following your bachelor studies, during you Master’s studies or following your Master’s degree. (Why not apply early?)
  - Contact Anders Møller for info [http://pure.au.dk/portal/en/amoeller@cs.au.dk](http://pure.au.dk/portal/en/amoeller@cs.au.dk)

3 years

2 years

3 years

PhD

MSc in Computer Science

BSc in Computer Science
Master’s Degree Programme

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Practical information
- Contracts
- Signing up for courses
- ”Fremdriftsreform”
- Student Guidance
Contracts

- [http://kontrakt.scitech.au.dk/](http://kontrakt.scitech.au.dk/)

- Master’s Contract:
  - Complete before signing up for first course in Master’s Programme
    - 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 have a friendly chat with Marianne, Søren & Gudmund

- Thesis Contract:
  - Sign at start of thesis work
Signing up for courses

- **Sign up:**
  - Jaunary 15 – April 1 for courses in Summer
  - May 1-5 for courses in (Summer &) Fall
  - November 1-5 for courses in the Spring
  - Advance approval of credit transfer is needed for courses from outside ST,
  - Apply well in advance!
  - Advance approval of credit transfer is no guarantee that you will be admitted to the course!

- **Schedule for elective courses:**
  - watch out for collisions!
Fremdriftsreform ("study progress reform")

- 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 us for advice and guidance on your individual study program.
- If you ignore this advice and believe that “it will be fine”, it may have serious consequences!
- If you do not pass minimum 45 ECTS per year or 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 [http://studerende.au.dk/en/studies/subject-portals/computer-science/student-counselling/maximum-duration-and-active-enrolment/](http://studerende.au.dk/en/studies/subject-portals/computer-science/student-counselling/maximum-duration-and-active-enrolment/).
- 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!
The student counselor may help you
- Henrik Dalsgaard Henriksen

Possible topics:
- Change of study programme, delay, leave of absence, withdrawel.
- Illness.
- Study regulations, selecting supplementary subjects.

http://studerende.au.dk/studier/fagportaler/datalogi/studievejledning/kontakt-studievejledningen/
Information Meetings

Thursday 28 March 2019 (Store Aud, 5510-103):
- 12-13: Computer Science: Bachelor Program
- 13-14: Computer Science: Master’s Program

Friday 29 March 2019 (Lille Aud, 5510-104):
- 12-13: IT-Product Development: Bachelor Program
- 13-14: IT-Product Development: Master’s Program
- 14-15: Computer Science & IT-Product Development: Master’s Thesis
You can have influence!

- Join a committee
  - Contact the chair
  - You may look up current student members on the web

- **Education** Committee
  - Chair: Marianne Graves Petersen, mgraves@cs.au.dk
  - [http://cs.staff.au.dk/boards-and-committees/education-committee/](http://cs.staff.au.dk/boards-and-committees/education-committee/)

- **Office** Committee
  - Chair: Søren Poulsen, poulsen@cs.au.dk

- **PR** Committee
  - Chair: Søren Poulsen, poulsen@cs.au.dk
  - [http://cs.staff.au.dk/boards-and-committees/pr-committee/](http://cs.staff.au.dk/boards-and-committees/pr-committee/)

- **Lab** Committee
  - Chair: Søren Poulsen, poulsen@cs.au.dk
  - [http://cs.staff.au.dk/boards-and-committees/lab-committee/](http://cs.staff.au.dk/boards-and-committees/lab-committee/)
Efterår
Grundlæggende IT-produktdesign
Physical Computing
Social og æstetisk interaktionsdesign
Multimodal Interaction

Forår
IT-Produktdesignprojekt
Bachelorprojekt
Shape-changing objects and spaces
Designing Urban Intervention
Innovationsprojekt

labtools@cs.au.dk
- chomskylab.dk
- Træffetider på Ada-2
- Kom med dit input!