Master’s Degree Programme
IT Product Development

Revised 22 March 2018
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>1&lt;sup&gt;st&lt;/sup&gt; sem</th>
<th>Sketching and Physical Prototyping (10 ECTS)</th>
<th>Introduction to Programming (10 ECTS)</th>
<th>Calculus alpha (10 ECTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Sem</td>
<td>Introduction to Databases (5 ECTS)</td>
<td>The Web of Things (5 ECTS)</td>
<td>IT Product Design Project (20 ECTS)</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Sem</td>
<td>Physical Computing (10 ECTS)</td>
<td>Introduction to Human-Computer Interaction (10 ECTS)</td>
<td>Software Engineering and Architecture (10 ECTS)</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; 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>
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<td></td>
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<td></td>
<td>Organizing and Business Models for IT-Innovations (5 ECTS)</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; 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>6&lt;sup&gt;th&lt;/sup&gt; sem</td>
<td>Shape-changing Objects and Spaces (10 ECTS)</td>
<td></td>
<td>Philosophy of Information Tech (5 ECTS)</td>
</tr>
</tbody>
</table>

Bachelor Project (15 ECTS)

- 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
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's Programme

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

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

### Specializations:

**Industrial Design**
- Design 1
- Design 2a
- Design 3 + 4

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

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

Shared with CS
Industrial Design

<table>
<thead>
<tr>
<th>1st sem (Fall)</th>
<th>2018: Shape-changing Objects and Spaces (10 ECTS) From 2019: Social and Aesthetic Interaction Design (10 ECTS)</th>
<th>PGK</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Sem (Spring)</td>
<td>Designing Urban Interventions (5 ECTS)</td>
<td>KA</td>
</tr>
<tr>
<td>3rd Sem (Fall)</td>
<td>Human-Centered Sustainable Design</td>
<td>PGK+DR</td>
</tr>
<tr>
<td>3rd Sem (Fall)</td>
<td>Human-Centered Design (10 ECTS)</td>
<td>PGK+DR</td>
</tr>
<tr>
<td></td>
<td>Sustainable Product design (5 ECTS)</td>
<td>DR</td>
</tr>
</tbody>
</table>

- First 15 ECTS are mandatory courses

Industrial Design

- Peter Gall Krogh
- Majken Kirkegård Rasmussen
- Devarajan Ramanujan
- Karthikeya Acharya
# Ubiqitous Computing and Interaction

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>ECTS</th>
<th>Lecturer(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; sem (Fall)</td>
<td>Building the Internet of Things with P2P and Cloud Computing (10 ECTS)</td>
<td></td>
<td>NOB</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Sem (Spring)</td>
<td>Augmented Reality (5 ECTS)</td>
<td></td>
<td>KG</td>
</tr>
<tr>
<td></td>
<td>Advanced Augmented Reality Project (5 ECTS)</td>
<td></td>
<td>KG</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Sem (Fall)</td>
<td>Advanced Data Management and Analysis (10 ECTS)</td>
<td></td>
<td>IA+PK</td>
</tr>
</tbody>
</table>

- First 15 ECTS are mandatory courses

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### Ubiqitous Computing and Interaction
- Kaj Grønbæk
- Niels Olof Bouvin
- Marianne Graves Petersen
- Jo Vermeulen

### Data-intensive Systems
- Ira Assent
- Panagiotis Karras
Human-Computer Interaction

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

- Semesters have progression
  - 1st or 3rd semester is prerequisite for the 2nd semester

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

**Use, Design and Innovation**
- Morten Kyng

IT Product Development Master's Programme
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.
Elective Courses (Fall 2018)

In addition to earlier mentioned specialization courses

- **CS**
  - Distributed Systems and Security (10 ECTS) [bach]
  - Interdisciplinary Digital Entrepreneurship (10 ECTS)
  - Project Work in IT Product Development (5 or 10 ECTS)
  - (Summer 2018:) Identity and Privacy (5 ECTS) (Prerequisites: Distributed Systems & Security)

- **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 2018:) Game.Play.Design: Changing worlds / changing views (10 ECTS)

- **BSS**
  - Marketing and Consumer Behaviour (10 ECTS) [bach]
  - Product Development and Innovation Management (10 ECTS)
  - Employee Emotions, Attitudes and Behaviour (5 ECTS) [bach]
  - (Summer 2018:) Introduction to Data Science in Python (5 ECTS)
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

- We expect more destinations to be recommended at info-meeting in September 2018
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!
Apply for PhD studies!
- For deadlines see http://talent.au.dk/phd/scienceandtechnology/opencalls/
- You receive a salary while studying!
- http://talent.au.dk/phd/scienceandtechnology/programmes/computer-science/
- Apply for PhD studies directly following your bachelor studies, during your 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
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 Søren & Gudmund

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

- Sign up:
  - December 1 – March 15 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, see [http://studerende.au.dk/en/studies/subject-portals/computer-science/student-counselling/credit-transfer/](http://studerende.au.dk/en/studies/subject-portals/computer-science/student-counselling/credit-transfer/) (apply well in advance!)

- 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/studier/fagportaler/datalogi/fremdriftsreformen/].

- 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

- Magnus Høholt Kaspersen

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

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

Thursday 22 March 2018 (Store Aud, 5510-103):
- 15-16: IT-Product Development: Bachelor Program
- 16-17: IT-Product Development: Master’s Program

Friday 23 March 2018 (PBA Aud, 5335-016):
- 14-15: Computer Science: Bachelor Program
- 15-16: Computer Science: Master’s Program
- 16-17: 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: Gerth Stølting Brodal, gerth@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
Skitsering og fysisk prototypedesign
Physical Computing
Shape-changing objects and spaces
Multimodal Interaction

Forår
IT-Produktdesignprojekt
Bachelorprojekt
Social og æstetisk interaktionsdesign
Designing Urban Intervention
Innovationsprojekt

labtools@cs.au.dk
• chomskylab.dk
• Træffetider på Ada-2
• Kom med dit input!
facebook.com/datalogi
www.facebook.com/groups/it.studerende/
facebook.com/SOFAIT
facebook.com/chomskylab

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