Master’s Degree Programme
IT Product Development

Revised 28 February 2020
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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course 1</th>
<th>Course 2</th>
<th>Course 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st sem</td>
<td>Foundations of IT Product Design (10 ECTS)</td>
<td>Introduction to Programming (10 ECTS)</td>
<td>Calculus alpha (10 ECTS)</td>
</tr>
<tr>
<td>2nd Sem</td>
<td>Database Systems (5 ECTS)</td>
<td>The Web of Things (5 ECTS)</td>
<td>IT Product Design Project (20 ECTS)</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>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: 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>
</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.

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

- Programme must include all 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**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st sem (Fall)</td>
<td>Social and Aesthetic Interaction Design (10 ECTS)</td>
<td></td>
<td>PGK</td>
</tr>
<tr>
<td>2nd Sem (Spring)</td>
<td>Designing Wearables (5 ECTS)</td>
<td></td>
<td>MP</td>
</tr>
<tr>
<td>3rd Sem (Fall)</td>
<td>Sustainable Design and Production (10 ECTS)</td>
<td></td>
<td>DR</td>
</tr>
</tbody>
</table>

- First 15 ECTS are mandatory courses

**Socio-Technical Design**
- Peter Gall Krogh
- Majken Kirkegård Rasmussen
- Minna Pakanen
- Sofie Kinch
- Troy Robert Nachtigall

**Lifecycle Design and Manufacturing**
- Devarajan Ramanujan
Ubiquitous Computing and Interaction

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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Description</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st sem (Fall)</td>
<td>Building the Internet of Things with P2P and Cloud Computing (10 ECTS)</td>
<td>NOB</td>
</tr>
<tr>
<td>2nd Sem (Spring)</td>
<td>Augmented Reality (5 ECTS)</td>
<td>KG</td>
</tr>
<tr>
<td></td>
<td>Advanced Augmented Reality Project (5 ECTS)</td>
<td>KG</td>
</tr>
<tr>
<td>3rd Sem (Fall)</td>
<td>Data Visualization (10 ECTS) OR Deep Learning for Visual Recognition (10 ECTS)</td>
<td>H-JS</td>
</tr>
</tbody>
</table>

Ubiquitous Computing and Interaction
- Kaj Grønbæk
- Niels Olof Bouvin
- Marianne Graves Petersen
- Hans Gellersen
- Jo Vermeulen
- Hans-Jörg Schultz
## 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 are independent – can be taken in any order

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

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

In addition to earlier mentioned specialization courses

- **CS**
  - Interdisciplinary Digital Entrepreneurship (10 ECTS)
  - Project Work in IT Product Development (5 or 10 ECTS)
  - Erhvervsprojekt / Vocational Training Project (10 ECTS)
    - Collaboration with a company
    - [https://studerende.au.dk/studier/fagportaler/datalogi/projektsamarbejde/](https://studerende.au.dk/studier/fagportaler/datalogi/projektsamarbejde/)
    - [https://studerende.au.dk/studier/fagportaler/datalogi/projektsamarbejde/cs-project-bank/](https://studerende.au.dk/studier/fagportaler/datalogi/projektsamarbejde/cs-project-bank/)

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

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

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

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!
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

- Exploring how to engage a broader range of children in construction activities and how to design a p
- Nye Veje for Digital Myndiggørelse: En Inkluderende Tilgang til Design af Læringsværktøjer for Gymna
- CanAllIoT: A tangible user interface for enterprise IoT configuration using a trigger-action approac
- EXVRIETY: A CROSS DEVICE MULTI- USER COLLABORATIVE SYSTEM
- DESIGN AND EVALUATION OF A VR TRAINING APPLICATION BASED ON A USE CASE AT GRUNDFOS
- Prototyping Digital Games: Identifying Filtering Dimensions
- Investigating the use of drones in education & robot competitions
- Articulating water related practices from families in Nairobi : Designing an exhibition to represent
- OneChord: Creating a One-Handed Chording Keyboard for People with a Visual Impairment
- A sense of home: Augmenting feedback capabilities of domestic technology
- Motivating Sustainable Behaviour in Automated Buildings through Socially Oriented Ambient Displays
- MakeSense: A Step Toward User-friendly Machine Learning
- Learning in Games
- Motivating Sustainable Behaviour in Automated Buildings through Socially Oriented Ambient Displays
- Exploring the Potential of Data Physicalization of Group Heart Rate Data to Foster Social Interaction
- Cross-Surface Interaction between People & Displays in Classroom Situations
- Towards rapid deployment of large scale IoT systems by reducing the knowledge needed in the deployme
- Assessing the Design Space and Potential of Floor Markings.
- Using Projection Mapping Display to Extend the Current Shopping Experience by Creating an Engaging, Social Experience when Customizing Fashion.
- Augmenting Play Bases.
Study abroad

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

- **Study Abroad Fair 3 October 2019:**
  - [http://studerende.au.dk/au-study-abroad-fair/](http://studerende.au.dk/au-study-abroad-fair/)

- **Application Deadline: 1 December 2019**

- **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

**Will be updated before next deadline 1 december 2020**
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/)

Will be updated before next deadline 1 december 2020
Study abroad (Summer school)

- General information (destinations, deadlines, procedures, etc)
  - https://studerende.au.dk/en/studies/subject-portals/computer-science/study-abroad/other-study-abroad-possibilities/summer-courses/
- Application Deadline: 15 March 2020
Master’s Degree Programme

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Admission

- When bachelor completed
- You apply for admission into Master’s Programme
  - Deadline: 1 March
- ... 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/ansoegning/](http://kandidat.au.dk/optagelse/ansoegning/)
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)
Master’s Degree Programme

- Important choices
- Structure of the Master’s Degree Programme
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  - Contracts
  - Signing up for courses
  - "Fremdriftsreform"
  - Student Guidance
Contracts

- http://kontrakt.nattech.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 and/or Gudmund

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

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

- Sign up:
  - January 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 Nat-Tech,
  - 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, withdrawal.
  - Illness.
  - Study regulations, selecting supplementary subjects.
Information Meetings

Thursday 26 March 2020 (Store Aud, 5510-103):
- 13-14: Computer Science: Bachelor Program
- 14-15: Computer Science: Master’s Program

Friday 27 March 2020 (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: Na Ree Sabina Pagaard Sørensen, nrs@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/)
Chomsky Lab
Prototypefaciliteter + Udlån af udstyr og komponenter.
Åbent 9-10 i hverdage.
Mødetid i Chomsky.
ChomskyLab Lending app

Udlånsplatform og anmodning.
Oversigt over komponenter samt udstyr.

ChomskyLab Udlaan giver dig muligheden for at låne komponenter til kurser på AU. Denne app er beregnet til studerende på IT produktudvikling eller dataologi.

Ingen komponenter kan lånes uden en af medarbejderne hos ChomskyLab har godkendt lånet.
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facebook.com/SOFAIT
facebook.com/chomskylab

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