

# Introduction

Jörg Cassens

## Contextual Design of Interactive Systems



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## 1 Welcome

Me

- Jörg Cassens
  - Institut für Mathematik und Angewandte Informatik
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  - +49 (5121) 883-40190
  - Building Samelsonplatz, Office A 115
- My Background
  - Media Informatics = Human-Centred Computing + Human-Computer Interaction + Artificial Intelligence + Digital Media + Transdisciplinarity + ...
- Deutsch oder English
  - German: Du oder Sie
- Office Hours
  - Wednesdays, 17:00-18:00

## 2 Rules & Regulations

### 2.1 Workload

#### Workload

- 3 SWS
  - 2 hours lecture
  - 1 hour tutorial
- 5 ECTS
- 125 hours
  - 45 hours lectures and tutorials
  - 80 hours self-study
- Written exam

#### Workload & Times

- 3 SWS à 45 minutes → 2h15min
  - Including a short break, we would need at least 2h30min time slots
- Available time slots
  - Tuesday, 9-10
  - **Tuesday, 10-11**
  - **Tuesday, 11-12**
  - Tuesday, 12-13
  - Wednesday, 12-13
  - Wednesday, 13-14
- Let's play house of commons and do indicative votes

#### Course Meetings

- Tuesday, 10:15-12:45 lecture/tutorial (incl. short break)?
  - Subject to changes, see previous discussion
  - Final decision will be communicated as a learnweb posting
- Samelsonplatz A 102
- No course on several days
  - 01.05.: Labour Day (if Wednesday slot is picked)
  - 11.06.: Project week
  - 02.07./03.07.: (Leave of absence)

### 2.2 Course Format

#### Course Format

- The proportion of lectures and tutorials & question times will be 2 to 1 over the course of the semester
- However, that does not mean there will be a strict division
- Tutorials will be done when it fits the course
- I am not the only one to talk during lectures
- At the same time, I would like to talk during tutorials, too
- There will be required readings

- Announced in lecture and learnweb
- Available in learnweb
- Discussed in tutorials
- This course is structured around attendance of the course
- However, I do not have attendance lists

## Feedback

### Agility

The content and form of the course have changed since the last instalment three years ago. Expect hiccups.

Constant feedback is explicitly welcomed. Tell me what you like or dislike, and which topics you are particularly interested in. I might be able to devote more time to those.

You have more influence on course development than what you might think.

Just quitting the course does help neither you nor me, therefore, I ask you to tell me about any problems with the course immediately (if needed anonymously).

## 2.3 Learning Outcomes

### Lernziele

Aus dem **Modulhandbuch**:

Die Studierenden vertiefen in diesem Modul ihre Kenntnisse im Bereich der zielorientierten Bereitstellung und systematischen Anwendung von Prinzipien, Methoden und Werkzeugen für die benutzerzentrierte Konzeption und Entwicklung interaktiver Softwaresysteme. Die Studierenden erlernen den Entwurf, die gebrauchstaugliche Gestaltung sowie die Realisierung multimedialer Systeme und deren Einsatz in der Praxis.

### Lehrinhalte

- Usability (Gebrauchstauglichkeit)
- Prozesse zur Entwicklung und Gestaltung digitaler Medien
  - Contextual Design
  - Personas
  - Szenarien
- Verstehen und Evaluieren
- Beispiel Contextual Design
  - Erkundung
  - Interpretation
  - Konsolidierung
  - Neugestaltung
  - Benutzerumgebung
  - Papierprototypen
- Modelle, Metaphern, Muster
- Moderne Interaktionstechniken

### Learning Outcomes

From the **course catalog**:

In this module, students deepen their understanding of how to make available principles, methods and tools for user centered design and development of interactive software applications as well as how to make use of those in a systematic way. Students learn requirements elicitation, design and implementation of multimedia systems and their practical application.

## Course Content

- Usability
- Process models for development & design of digital media
  - Contextual Design
  - Personas
  - Scenarios
- Understanding and evaluating
- Example Contextual Design
  - Inquiring
  - Interpreting
  - Consolidating
  - Re-inventing
  - Communicating
  - Prototyping
- Models, metaphors, and patterns
- Modern interaction

## Application Areas

- Contextualised and ambient intelligent systems
- Data and process visualization
- Explainable and responsible Artificial Intelligence
- Learning and teaching technologies
- Pervasive games and environments
- Behavioural and tangible interfaces
- Emotional and affective computing
- Embodied conversational agents and robots
- Personalisation and individualisation
- Recommender systems
- Intelligent user interfaces
- Safety-critical Systems

## 2.4 Credits

### Credits

- **WINF (PO ≤ 2011):** Veranstaltungen Master
  - Gebiete der Informatik, Gebiet Algorithmen
  - Wahlbereich, Gebiet Medieninformatik
- **WINF (PO ≥ 2014):** Veranstaltungen Master
  - Spezialisierungs- und Vertiefungsmodule – Gestaltung und Entwicklung betrieblicher Informationssysteme
- **IMIT (PO ≤ 2011):** Veranstaltungen Master
  - Gebiete der Informatik – Gebiet Medieninformatik

- Gebiete der Informatik – Gebiet Algorithmen
- **IMIT, AI (PO ≥ 2014):** Veranstaltungen Master
  - Wahlmodule – Informatik – Gebiet Medieninformatik
- **Data Analytics:**
  - Elective – Application – Media Systems
- **Andere:** Maßgabe des zuständigen Prüfungsausschusses

## Exam

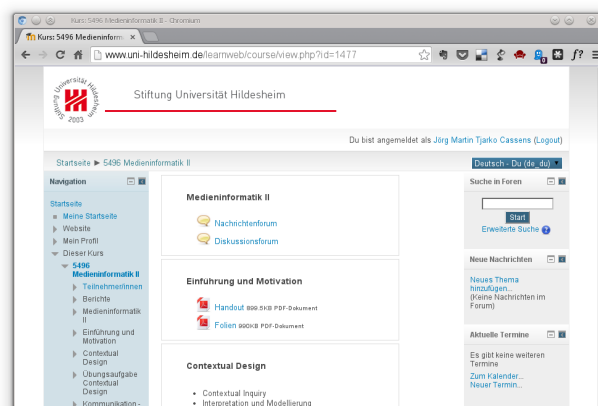
- **Passing the final exam**
- There will be two exams, one at the beginning of autumn break, one at the end
  - Pick either one, if you pick the first, the second can be used to improve marks
  - See course announcements and LSF for exact dates
- Content of exam
  - Lecture content as covered in the slides and handouts
  - Lecture content as covered in the required reading
  - Tutorial content as covered in the assignments

## Assignments

- There will be no compulsory assignments
  - Content of assignments relevant for exam
- However, you might want to submit some assignments
  - Submitted via the learnweb or presented in class
- Learnweb-submissions are usually to be in PDF-format
  - txt is OK for text only or code
  - SVG, PNG and JPG is OK for images
  - mp3, wav and ogg is OK for audio
  - mp4 is OK for video
  - No files from word processors or graphic programs, please (doc, docx, odt) – those will not be marked
  - You can deliver zip, gz, bz2, xz or rar archives

## 3 Websites

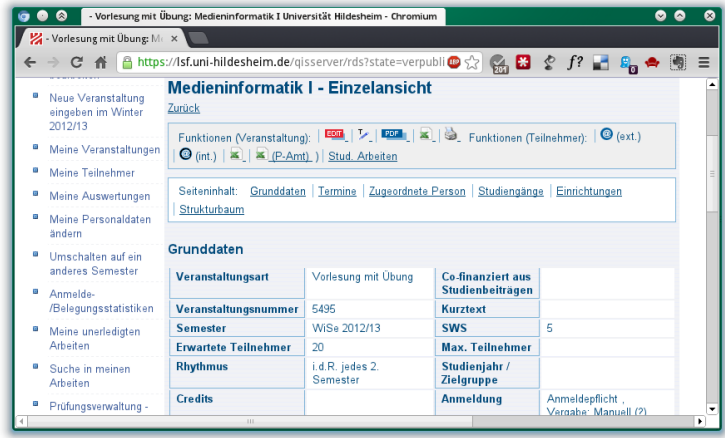
### Learnweb



[learnweb.uni-hildesheim.de](http://learnweb.uni-hildesheim.de)

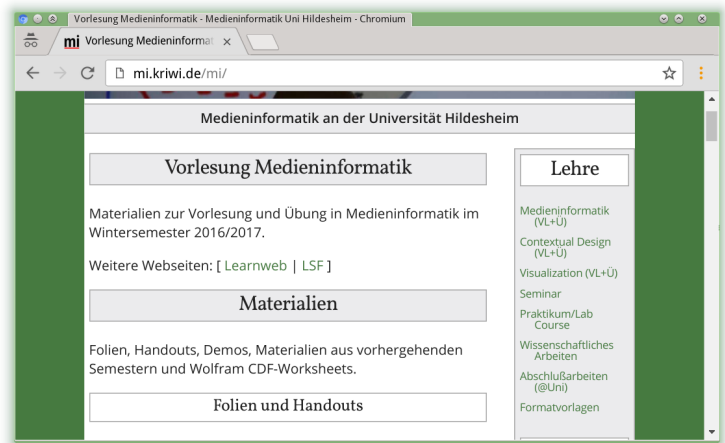
course: So19\_5496\_MI-CDIS, password: Course Number

LSF



[lsf.uni-hildesheim.de](https://lsf.uni-hildesheim.de)

mi.kriwi.de



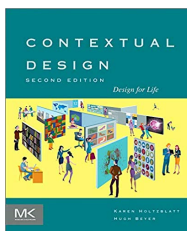
[mi.kriwi.de/cdis](https://mi.kriwi.de/cdis)

## 4 Literature



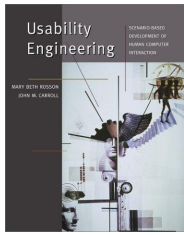
### Textbook & Personas

Alan Cooper, Robert Reimann, David Cronin, Christopher Noessel: About Face (Fourth edition) – The Essentials of Interaction Design. Wiley, 2014.



### Contextual Design

Hugh Beyer, Karen Holtzblatt: Contextual Design (Second edition) – Design for Life. ISBN 978-0128008942, San Diego: Morgan Kaufmann Academic Press, 2017.



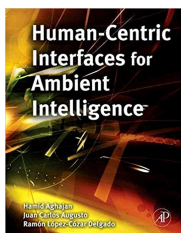
### Scenario-Based Design

Mary Beth Rosson, John Millar Carroll: Usability Engineering: Scenario-Based Development of Human-Computer Interaction. Morgan Kaufmann, 2002.



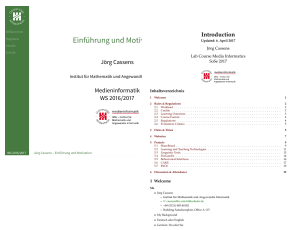
### Basics (German)

Malaka, Rainer; Butz, Andreas; Hussmann, Heinrich: Medieninformatik – Eine Einführung. ISBN 978-3-8273-7353-3, München: Pearson Studium, 2009.



### Applications: Ambient Systems

Aghajan, Hamid, Juan Carlos Augusto, and Ramón López-Cózar Delgado, eds. Human-centric interfaces for ambient intelligence. Academic Press, 2010.



### Handouts & Slides

Handouts & Slides

## 5 Final Remarks

### Courses in Media Informatics

- Winter term
  - Media Informatics (Lec + Tut)
    - \* German only
  - Seminar Media Informatics (Se)
- Summer term
  - Lab Course Media Informatics (Pr)
    - \* You can still join, helpful to have passed some courses in Media Informatics before
    - \* First meeting: Wed, 12-14, B 148 Spl
  - Alternating:
    - \* Contextual Design of Interactive Systems (Lec + Tut)
    - \* *Data and Process Visualization (Lec + Tut)Next: SoSe 2020*
    - \* *Contextualized Computing and Ambient Intelligent Systems (Lec + Tut)Next: SoSe 2021*

## Exam Dates

- Contextual Design of Interactive Systems
  - First exam: Tuesday, 16.07., 14:00-16:00
  - Second exam: Tuesday, 24.09., 10:00-12:00
  - Next exam: summer term 2020
- Contextualized Computing and Ambient Intelligent Systems
  - This year's exam: Wednesday, 15.05., 14:00-16:00
    - \* Mandatory registration by 08.05. in POS for this term
    - \* POS registration is opening in late April.
  - Next exam: summer term 2020
- Data and Process Visualization
  - This year's exam: Wednesday, 15.05., 16:00-18:00 *or* 14:00-16:00
    - \* Mandatory registration by 08.05. in POS for this term
    - \* POS registration is opening in late April.
  - Next exam: summer term 2020

## Contact

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  - Building Samelsonplatz, Office A 115
- Office Hours
  - Wednesdays, 17:00-18:00
- *Important:* Register in Learnweb for email updates

## References

## Literatur

- Hamid Aghajan, Juan Carlos Augusto, and Ramón López-Cózar Delgado. *Human-centric interfaces for ambient intelligence*. Academic Press, 2009.
- Alan Cooper, Robert Reimann, David Cronin, and Christopher Noessel. *About Face (fourth edition): the essentials of interaction design*. John Wiley & Sons, 2014.
- Karen Holtzblatt and Hugh Beyer. *Contextual design: Design for life*. Morgan Kaufmann, 2016.
- Rainer Malaka, Andreas Butz, and Heinrich Hußmann. *Medieninformatik: Eine Einführung*. Pearson Deutschland GmbH, 2009.
- Mary Beth Rosson and John Millar Carroll. *Usability Engineering: Scenario-Based Development of Human-Computer Interaction*. Morgan Kaufmann/Academic Press, 2002.