Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Subdivided Module Catalogue

for the Subject

Human-Computer Systems

as a Bachelor's with 1 major

with the degree "Bachelor of Science"

(180 ECTS credits)

Examination regulations version: 2010
Responsible: Faculty of Human Sciences
Responsible: Institute of Human Computer Media

Course of Studies - Contents and Objectives

The Bachelor of Human-Computer Systems is an interdisciplinary course of studies that teaches field-related competencies as well as competencies in computer science and psychology. The program imparts substantial knowledge on the following subjects:

- Programming and programming techniques;
- Software design and analysis;
- Psychological and physiological characteristics of users;
- Foundations of Usability, User Experience and Human Factors;
- User interface design of interactive systems;
- Interaction techniques and paradigms;
- Statistical methods.

Graduates acquire the following methodological competencies:

- Analytic thinking and planning and the ability to abstract;
- Algorithmic thinking and design;
- Mastery of methods and methodologies for the analysis, design and evaluation of human-computer systems;
- Substantial skills in designing experiments, data collection, and interpretation.

Graduates can apply their knowledge and their skills in their occupational or professional context and can develop and advance solutions to problems and arguments in their field of work. They can collect, assess and interpret relevant information, in particular on their degree programme, and are able to draw scientifically-founded conclusions. They can formulate specialised positions and solutions to problems, can present these verbally or in written form, and can defend these through argument. They can discuss information, ideas, problems and solutions with specialists and non-specialists and can take on responsibility in a team.

Abbreviations used

Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V** = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions

Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Notes

Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should the module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with

the general regulations governing the degree subject described in this module catalogue:

ASPO2009

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

16-Jan-2013 (2013-2)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

The subject is divided into

Abbreviation	Module title	ECTS credits	Method of grading	page
Compulsory Courses (118 ECTS credits)				
06-MCI-Einf-101-m01	Introduction to Human-Computer Interaction	5	NUM	5
10-I-GADS-101-m01	Foundations of Algorithms and Data Structures	10	NUM	39
06-MCS-Ergon-101-m01	Foundations of Psychological Ergonomics	9	NUM	9
06-PSY-STAT-092-m01	Statistics	12	NUM	36
10-I-ST-102-m01	Software Technology	10	NUM	40
10-I-EPP-101-m01	Introductory Programming Course	10	B/NB	38
06-MCS-SGP-101-m01	Selected Areas of Psychology	4	NUM	24
06-MCS-SoftE-101-m01	Software Development	15	NUM	25
06-MCS-Usab-101-m01	Usability and Software Ergonomics	10	NUM	28
06-MCS-Meth-101-m01	Research Methods	7	NUM	19
06-MCS-ICG-101-m01	Interactive Computer Graphics	5	NUM	14
06-MCS-MBG-101-m01	Methods for User-Centered Design	10	NUM	18
06-MCS-Inst-101-m01	Instructional Psychology for MCS	3	NUM	15
06-MCS-AkTre1-101-m01	Current Trends of Human-Computer Systems	5	NUM	7
06-MCS-Forsch-101-m01	Research Topics in Human-Computer Systems	3	NUM	11
Compulsory Electives (30 ECTS credits) One of the following modules must be taken: MCS-Projekt Psychologie (MCS Project Psychology), MCS-Projekt Informatik (MCS Project Computer Science), MCS-Projekt Interdisziplinär (MCS Project Interdisciplinary).				
06-MCS-V1-101-m01	Specialization MCS 1	5	NUM	29
06-MCS-V2-101-m01	Specialization MCS 2	5	NUM	30
06-MCS-IntSy1-101-m01	Interactive Systems 1	5	NUM	16
06-MCS-IntSy2-101-m01	Interactive Systems 2	5	NUM	17
06-MCS-TrMCI-101-m01	Current Trends in Human-Computer Interaction	5	NUM	27
06-MCS-AccUU-101-m01	Accessibility and Universal Usability	5	NUM	6
06-MCS-VUsab-101-m01	Specialisation Usability	5	NUM	33
06-MCS-VUsEx-101-m01	Specialisation User Experience	5	NUM	34
06-MCS-VHuFa-101-m01	Specialisation Human Factors	5	NUM	31
06-MCS-GameL-101-m01	Game Lab	10	NUM	12
06-MK-MedInf1-MCS-101-m01	Computer Science in Media 1	5	NUM	35
06-MCS-Proj-Psy-101-m01	MCS Project Psychology	10	NUM	23
06-MCS-Proj-Info-101-m01	MCS Project Computer Science	10	NUM	21
06-MCS-Proj-Int-101-m01	MCS Project Interdisciplinary	10	NUM	22
Thesis (12 ECTS credits)				
06-MCS-Thesis-101-m01	Bachelor's Thesis	12	NUM	26
Subject-specific Key Skills (15 ECTS credits)				
06-MCS-Exhib-101-m01	Exhibition	5	B/NB	10
06-MCS-BPrakt-101-m01	Internship	10	B/NB	8

Module title			Abbreviation
Introduction to Human-Computer Interaction			06-MCI-Einf-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science IX		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Human-computer interaction is concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them. This course gives an introduction to the principle biological, physiological, and psychological constraints as defined by the human user and relates these constraints to the conceptual and technical solutions of today's computer systems and existing as well as prospective interaction metaphors between humans and computers. The course covers topics in the area of human perception and cognition, memory and attention, the design of interactive systems, prominent evaluation methods, the principles of computer systems, typical input processing techniques, interface technology, and examples of typical interaction metaphors, from text-based input to graphical desktops to multimodal interfaces. Accompanying lab work will introduce students to typical tasks in this field, i. e. prominent evaluation methods and prototyping of interfaces.

Intended learning outcomes

At the end of the course, the students will have developed a broad understanding of the principles underlying the design of interfaces between human users and computer systems. They will understand the constraints and capabilities of current user interfaces, and they will have learned about the necessary steps involved in user-centred design and development approaches.

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 75 minutes) and presentation (approx. 10 minutes) and written elaboration (approx. 10 pages, ungraded) or b) written examination (approx. 75 minutes) and written elaboration (approx. 5 pages) and presentation (approx. 15 minutes)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)
Master's degree (1 major) Business Information Systems (2013)
Master's degree (1 major) Media Communication (2014)
Master's degree (1 major) Media Communication (2013)
Master's degree (1 major) Digital Humanities (2011)

Module title			Abbreviation
Accessibility and Universal Usability			06-MCS-AccUU-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Psychological Ergonomics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This course will be taught using a combination of lectures and seminar as well as project sessions. The course will first introduce students to the evaluation and design of accessible user interfaces (from accessibility for the handicapped through to universal usability for all users). Students will then work on selected issues in teams and will present the results of their work to the plenum where they will be discussed in detail. Each session will be supplemented with practical exercises providing students with an opportunity to develop methodological skills. During project sessions, students will engage in the evaluation of existing systems and in prototypical re-design. At the end of the project, students will deliver a presentation of the results of their work and will discuss these in plenum.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Nach der Teilnahme an diesem Modul beherrschen die Teilnehmer spezielle Kenntnisse und Methoden für die Bewertung und Gestaltung von barrierefreien Benutzungsschnittstellen. Sie unterscheiden die Methoden nach Einsatzgebiet und können eine geeignete Methode für die Bewertung auswählen. Die Studierenden können Benutzungsschnittstellen bezüglich der barrierefreien evaluieren, kritisieren und verändern.

Courses (type, number of weekly contact hours, language — if other than German)

S (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Specialisation assessment. Unless otherwise specified, the following methods can be chosen from for assessment in the specialisations Human-Computer Systems: a) written examination (approx. 75 minutes) and presentation of project results (approx. 15 minutes), b) presentation (approx. 20 minutes) and written elaboration (approx. 5 pages), c) presentation (approx. 20 minutes) and presentation of project results (approx. 20 minutes), d) presentation (approx. 20 minutes) and written examination (approx. 75 minutes), or e) term paper (approx. 10 pages).
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Current Trends of Human-Computer Systems			06-MCS-AkTre1-101-m01
Module coordinator		**Module offered by**	
unknown		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	unknown	--	

Contents

No information on contents available.

Intended learning outcomes

No information on intended learning outcomes available.

Courses (type, number of weekly contact hours, language — if other than German)

S (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

presentation (approx. 20 minutes) with written elaboration (approx. 12 pages)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)
Master's degree (1 major) Media Communication (2014)
Master's degree (1 major) Media Communication (2013)

Module title			Abbreviation
Internship			06-MCS-BPrakt-101-m01
Module coordinator			**Module offered by**
chairperson of examination committee of the Bachelor's degree programme Mensch-Computer-Systeme (Human-Computer Systems)			Institute of Human Computer Media
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Practical tasks will acquaint students with typical methods of needs analysis, prototyping and evaluation.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden lernen, in den Praktika theoretische und praktische Aspekte des Studiums auf neue Aufgabenstellungen anzuwenden. Sie knüpfen erste Kontakte zur Berufswelt und schaffen damit eine Grundlage für ihre spätere Berufswahl sowie für die Ausrichtung des Masterstudiums.

Courses (type, number of weekly contact hours, language — if other than German)

P (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

placement report / fieldwork report / report on practical training / report on practical course / project report / report on technical course (approx. 2 pages)

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Foundations of Psychological Ergonomics			06-MCS-Ergon-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Psychological Ergonomics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
9	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module will acquaint students with the fundamental principles of cognitive, physical and, in parts, organisational ergonomics, focusing on the importance of research findings for work design as well as on the design principles and guidelines that should be followed.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden erlagen Kenntnis über die Leistungsfähigkeit menschlicher Informationsverarbeitung und Handlungsfähigkeit welche eine wichtige Grundlage für die Gestaltung von Arbeitsumgebungen und Mensch-System-Schnittstellen ist. Die Studierenden können die physikalische, physiologische und informatorische Beanspruchung des Menschen in einer Arbeitsumgebung bewerten und durch Lösungsansätze aus der Ergonomie die Belastung gezielt steuern und ggf. begrenzen.

Courses (type, number of weekly contact hours, language — if other than German)

V + V + V (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 120 minutes)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title	Abbreviation
Exhibition	06-MCS-Exhib-101-m01

Module coordinator	Module offered by
chairperson of examination committee of the Bachelor's degree programme Mensch-Computer-Systeme (Human-Computer Systems)	Institute of Human Computer Media

ECTS	Method of grading	Only after succ. compl. of module(s)
5	(not) successfully completed	--

Duration	Module level	Other prerequisites
1 semester	undergraduate	--

Contents

Presentation and communication skills are important for application-oriented and practical aspects of various sciences. This is particularly true for human-computer interaction (HCI). This course requires participants to present the results of an associated project to a larger audience in an exhibition-like setup.

Intended learning outcomes

The participants will learn how to present their own work to a larger audience, how to plan, design and set-up the different parts of an own exhibition booth, and how to react individually to questions from the audience.

Courses (type, number of weekly contact hours, language — if other than German)

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 06-MCS-Exhib-1-101: Ü (no information on SWS (weekly contact hours) and course language available)
- 06-MCS-Exhib-2-101: Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component 06-MCS-Exhib-1-101: Exhibition MCS Project

- 3 ECTS, Method of grading: (not) successfully completed
- presentation of results of project in Human-Computer Systems (approx. 20 minutes)
- Language of assessment: German or English

Assessment in module component 06-MCS-Exhib-2-101: Exhibition Bachelor's Thesis

- 2 ECTS, Method of grading: (not) successfully completed
- presentation of results of Bachelor's thesis (approx. 15 minutes)
- Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Research Topics in Human-Computer Systems			06-MCS-Forsch-101-m01
Module coordinator			**Module offered by**
unknown			Institute of Human Computer Media
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	unknown	--	

Contents

No information on contents available.

Intended learning outcomes

No information on intended learning outcomes available.

Courses (type, number of weekly contact hours, language — if other than German)

S (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

talk (approx. 30 minutes)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Game Lab			06-MCS-GameL-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science IX		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Computer or video games have become a major aspect of modern culture and a large economic force in recent years. This course provides an introduction to the conceptual and technical approaches necessary to build computer games. The course will discuss the principles of game design, necessary tools for the design and development chain of computer games, the interactive game loop, necessary conceptual and functional aspects of game engines (I/O, graphics, physics, or artificial intelligence) and will provide an introduction to modern game architectures.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Nach Abschluss der Veranstaltung verfügen die TeilnehmerInnen über ein weitreichendes Verständnis aller Aspekte, die für das Design und die Entwicklung eines Computerspiels wichtig sind. Dies beinhaltet die grundlegende Softwarearchitektur moderner Computerspiele sowie verfügbare Werkzeuge zur Bewältigung typischer anfallender Aufgaben. Die TeilnehmerInnen werden in der Lage sein eigene Computerspiele zu entwickeln und die richtigen Werkzeuge für spezielle Anforderungen auszuwählen.

Courses (type, number of weekly contact hours, language — if other than German)

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 06-MCS-GameL-1-101: V (no information on SWS (weekly contact hours) and course language available)
- 06-MCS-GameL-2-101: R (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component 06-MCS-GameL-1-101: Creating Games

- 4 ECTS, Method of grading: numerical grade
- a) written examination (approx. 60 minutes) or b) written examination (approx. 40 minutes) with exercises (40 hours), weighted 5:1 or c) oral examination of one candidate each (approx. 30 minutes) or d) presentation (15 to 30 minutes) with written elaboration (10 to 15 pages) or e) term paper (15 to 20 pages) or f) portfolio (maximum 20 pages)
- Language of assessment: German or English

Assessment in module component 06-MCS-GameL-2-101: Developing Games

- 6 ECTS, Method of grading: numerical grade
- talk (approx. 30 minutes) and written elaboration (approx. 10 pages)

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle
--
Referred to in LPO I (examination regulations for teaching-degree programmes)
--
Module appears in
Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Interactive Computer Graphics			06-MCS-ICG-101-m01
Module coordinator			**Module offered by**
unknown			Institute of Human Computer Media
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	unknown	--	

Contents

No information on contents available.

Intended learning outcomes

No information on intended learning outcomes available.

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 75 minutes) and presentation of project results (approx. 15 minutes)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Instructional Psychology for MCS			06-MCS-Inst-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Instructional Psychology and New Media		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The module provides deeper knowledge of central topics , theories and findings of instructional psychology and its relation to digital media. The lecture gives an overview of current approaches in research about learning and instruction, above all in instructional design.

Intended learning outcomes

Students will acquire expertise and practical skills that will be useful for both their academic and their professional lives. This includes a more in-depth knowledge of theories, methods and findings of instructional psychology as well as a basic knowledge of the application of instructional psychology. The skills acquired in this course will also be useful in many ways for their future careers.

Courses (type, number of weekly contact hours, language — if other than German)

V (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 110 minutes)

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Interactive Systems 1			06-MCS-IntSy1-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science IX		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Artificial Intelligence (AI) studies the science and engineering of making intelligent machines, that is, methods which let machines or software exhibit intelligent behaviour. This course specifically concentrates on interactive methods applicable to novel human-computer interfaces and computer games. The course will cover topics about problem solving in general, search methods, semantic representation, logic and deduction methods, constraint satisfaction methods, as well as algorithmical approaches to apply these methods to interactive systems. The latter includes the identification of necessary software modules and requirements for AI-enabled systems as well as APIs for building so-called world interfaces.

Intended learning outcomes

After the course, the students will have a broad understanding of the underlying theoretical models and methods used in interactive Artificial Intelligence. They will be able to implement a prominent variety of these methods, to build their own intelligent interactive applications, and to choose the right software tool for this task.

Courses (type, number of weekly contact hours, language — if other than German)

S + V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Specialisation assessment. Unless otherwise specified, the following methods can be chosen from for assessment in the specialisations Human-Computer Systems: a) written examination (approx. 75 minutes) and presentation of project results (approx. 15 minutes), b) presentation (approx. 20 minutes) and written elaboration (approx. 5 pages), c) presentation (approx. 20 minutes) and presentation of project results (approx. 20 minutes), d) presentation (approx. 20 minutes) and written examination (approx. 75 minutes), or e) term paper (approx. 10 pages).
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Interactive Systems 2			06-MCS-IntSy2-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science IX		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Artificial Intelligence (AI) studies the science and engineering of making intelligent machines, that is, methods which let machines or software exhibit intelligent behaviour. This course specifically concentrates on interactive methods applicable to novel human-computer interfaces and computer games. The course will cover topics about problem solving in general, search methods, semantic representation, logic and deduction methods, constraint satisfaction methods, as well as algorithmical approaches to apply these methods to interactive systems. The latter includes the identification of necessary software modules and requirements for AI-enabled systems as well as APIs for building so-called world interfaces.

Intended learning outcomes

After the course, the students will have a broad understanding of the underlying theoretical models and methods used in interactive Artificial Intelligence. They will be able to implement a prominent variety of these methods, to build their own intelligent interactive applications, and to choose the right software tool for this task.

Courses (type, number of weekly contact hours, language — if other than German)

S + V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Specialisation assessment. Unless otherwise specified, the following methods can be chosen from for assessment in the specialisations Human-Computer Systems: a) written examination (approx. 75 minutes) and presentation of project results (approx. 15 minutes), b) presentation (approx. 20 minutes) and written elaboration (approx. 5 pages), c) presentation (approx. 20 minutes) and presentation of project results (approx. 20 minutes), d) presentation (approx. 20 minutes) and written examination (approx. 75 minutes), or e) term paper (approx. 10 pages).
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Methods for User-Centered Design			06-MCS-MBG-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Psychological Ergonomics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module will acquaint students with methods of ergonomic product design and will provide them with an opportunity to apply these. Having been introduced to these methods during the lecture, students will apply selected methods to examples during the exercise. In addition, students will develop a product concept and will carry out the initial stages of an ergonomic design process from context-of-use and requirements analysis through the development of design solutions to a tested (paper) prototype.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden kennen ausgewählte Methoden zur Nutzungskontext- und Anforderungsanalyse sowie zur Gestaltung von Mensch-Technik-Interaktion. Sie können die Methoden gegenüberstellen und die Nützlichkeit einzelner Methoden für spezifische Ziele abschätzen und die Methoden für die Gestaltung eines Systems anwenden. Die Projektarbeit fördert das selbständige Planen, die Kommunikation und Kooperation in Gruppen sowie die Fähigkeit Konflikte zu lösen.

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

presentation of project results (approx. 20 minutes) and project report (approx. 12 pages)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Research Methods			06-MCS-Meth-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Psychological Ergonomics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
7	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module will equip students with the fundamentals of research methods in human-computer systems, including theoretical principles, the identification of research problems, the selection of suitable measurement methods, the selection of research paradigms and data collection methods as well as the analysis and interpretation of research findings. An exercise will provide students with an opportunity to practise their skills in these areas. In addition, students will gain first-hand experience of experiments, spending 25 hours acting as a participant in experiments, as a tester or similar.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Nach der Teilnahme an den Modulveranstaltungen haben die Studenten Kenntnisse über die erkenntnistheoretischen Grundlagen der wissenschaftlichen Modellbildung in einer empirischen Disziplin. Die Studierenden erlangen die Fähigkeit, einem Untersuchungsgegenstand angemessene empirische Datenerhebungsmethoden auszuwählen und sie - auch in ihrer Beschränkung - korrekt zu interpretieren. Diese Kenntnisse und Fertigkeiten ermöglichen den Studierenden die methodenkritische Auseinandersetzung mit der wissenschaftlichen Fachliteratur und die Testung von wissenschaftlichen Fragestellungen bzw. die Evaluation von Mensch-Computer Systemen.

Courses (type, number of weekly contact hours, language — if other than German)

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 06-MCS-Meth-1-101: V + Ü (no information on SWS (weekly contact hours) and course language available)
- 06-MCS-Meth-2-101: P (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component 06-MCS-Meth-1-101: Research Methods Research Methods

- 6 ECTS, Method of grading: numerical grade
- a) written examination (approx. 75 minutes) or b) presentation (approx. 20 minutes) with written elaboration (approx. 10 pages) or c) written examination (approx. 60 minutes) and term paper (approx. 5 pages)
- Language of assessment: German or English

Assessment in module component 06-MCS-Meth-2-101: Experience as a tester or subject in experiments

- 1 ECTS, Method of grading: (not) successfully completed
- acting as a participant in an experiment

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle
--
Referred to in LPO I (examination regulations for teaching-degree programmes)
--
Module appears in
Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
MCS Project Computer Science			06-MCS-Proj-Info-101-m01
Module coordinator		**Module offered by**	
unknown		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	unknown	--	

Contents

No information on contents available.

Intended learning outcomes

No information on intended learning outcomes available.

Courses (type, number of weekly contact hours, language — if other than German)

R (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

report (approx. 15 pages)
Language of assessment: German or English

Allocation of places

Number of places: 1-5 per group.

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
MCS Project Interdisciplinary			06-MCS-Proj-Int-101-m01
Module coordinator		**Module offered by**	
chairperson of examination committee of the Master's degree programme Human-Computer Interaction		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Practical experience is a necessary skill for application-oriented aspects of various sciences. This is specifically true for Human-Computer Interaction (HCI) which incorporates engineering as well as empirical work skills. This course assigns a well-defined project or task to (teams of) students which they have to solve largely on their own. The topic will be in the area of Human-Computer Interaction with an evenly distributed focus on the engineering, aka computer science, as well as on the empirical or psychological part of HCI.

Intended learning outcomes

After the course, the participants will have a good understanding of how to solve a coherent problem using typical HCI-skills. They will have learned how to collaborate with colleagues and to define, distribute, and execute individual work packages.

Courses (type, number of weekly contact hours, language — if other than German)

R (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

report (approx. 15 pages)
Language of assessment: German or English

Allocation of places

Number of places: 1-5 per group.

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
MCS Project Psychology			06-MCS-Proj-Psy-101-m01
Module coordinator		**Module offered by**	
chairperson of examination committee of the Master's degree programme Human-Computer Interaction		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Practical experience is a necessary skill for application-oriented aspects of various sciences. This is specifically true for Human-Computer Interaction (HCI) which incorporates engineering as well as empirical work skills. This course assigns a well-defined project or task to (teams of) students which they have to solve largely on their own. The topic will be in the area of Human-Computer Interaction with an evenly distributed focus on the engineering, aka computer science, as well as on the empirical or psychological part of HCI.

Intended learning outcomes

After the course, the participants will have a good understanding of how to solve a coherent problem using typical HCI-skills. They will have learned how to collaborate with colleagues and to define, distribute, and execute individual work packages.

Courses (type, number of weekly contact hours, language — if other than German)

R (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

report (approx. 15 pages)
Language of assessment: German or English

Allocation of places

Number of places: 1-5 per group.

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Selected Areas of Psychology			06-MCS-SGP-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Psychological Ergonomics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
4	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module will acquaint students with the fundamental principles of the following branches of psychology: emotional and motivational psychology, social psychology, personality and differential psychology as well as organisational psychology.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die in diesem Modul erworbenen Kenntnisse aus wesentlichen Teilgebieten der Psychologie bilden die Grundlage für die Studierenden, theoriegeleitet User Interfaces zu analysieren, zu entwerfen und zu bewerten hinsichtlich emotionaler und motivationaler Aspekte (User Experience), hinsichtlich der individuellen Anpassung von Benutzungsschnittstellen (Personalisierung) sowie hinsichtlich der Unterstützung von Kommunikation und Kooperation mit anderen Menschen (Computer Supported Cooperative Work).

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 75 minutes) or b) written examination (approx. 60 minutes) and ungraded presentation (approx. 20 minutes)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Software Development			06-MCS-SoftE-101-m01
Module coordinator		**Module offered by**	
unknown		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
15	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	unknown	--	

Contents

No information on contents available.

Intended learning outcomes

No information on intended learning outcomes available.

Courses (type, number of weekly contact hours, language — if other than German)

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 06-MCS-SoftE-1-101: P (no information on SWS (weekly contact hours) and course language available)
- 06-MCS-SoftE-2-101: V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component 06-MCS-SoftE-1-101: Programming Course Interface Development

- 10 ECTS, Method of grading: numerical grade
- presentation of project results (approx. 20 minutes)
- Language of assessment: German or English

Assessment in module component 06-MCS-SoftE-2-101: Software Quality Software Quality

- 5 ECTS, Method of grading: numerical grade
- written examination (approx. 75 minutes)
- Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Bachelor's Thesis			06-MCS-Thesis-101-m01
Module coordinator		**Module offered by**	
chairperson of examination committee of the Master's degree programme Human-Computer Interaction		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
12	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The students have to individually work on an assigned well-defined problem in the field of Human-Computer Interaction and document their results using good scientific standards.

Intended learning outcomes

Participants will learn how to apply scientific methods from the HCI field. They will learn a structured approach starting from a definition and motivation of research questions and the discussion and summery of related work from scientific publications and prior approaches. Following this they will learn how to develop own concepts and methods to tackle the questions and how to implement them and potentially to evaluate the results.

Courses (type, number of weekly contact hours, language — if other than German)

C (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written thesis (approx. 30 pages)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Current Trends in Human-Computer Interaction			06-MCS-TrMCI-101-m01
Module coordinator		**Module offered by**	
unknown		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	unknown	--	

Contents

No information on contents available.

Intended learning outcomes

No information on intended learning outcomes available.

Courses (type, number of weekly contact hours, language — if other than German)

S (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

talk (approx. 30 minutes) and written elaboration (approx. 10 pages)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Usability and Software Ergonomics			06-MCS-Usab-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Psychological Ergonomics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module will acquaint students with analytical as well as empirical methods for the evaluation of the usability and user experience of interactive devices and will provide them with an opportunity to apply these. Having been introduced to these methods during the lecture, students will apply selected methods to examples during the exercise. In addition, students will independently evaluate two interactive devices in small teams; they will plan, conduct and analyse a usability evaluation, will critically compare different methods and will deliver a presentation on the results of their work.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Die Studierenden kennen analytische und empirische Methoden zur Usability-Evaluation Interaktiver Produkte und besitzen Fachkompetenz in der Planung, Durchführung und Auswertung von Usability-Evaluationen. Auch die Fähigkeit zur Arbeit in Teams wird ausgebildet.

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

presentation (approx. 20 minutes) and project report (approx. 12 pages)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)
Master's degree (1 major) Digital Humanities (2011)

Module title	Abbreviation
Specialization MCS 1	06-MCS-V1-101-m01

Module coordinator	Module offered by
chairperson of examination committee of the Bachelor's degree programme Mensch-Computer-Systeme (Human-Computer Systems)	Institute of Human Computer Media

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	undergraduate	--

Contents

German contents available but not translated yet.

In diesem Modul werden Inhalte des Studiums vertieft und Bezüge zu Nachbarwissenschaften hergestellt, die die bisherigen im Studium erworbenen Kompetenzen erweitern und vertiefen, z.B. Medienkommunikation, Wirtschaftsinformatik, Interaction Design, Techniksoziologie, Psychologie, Informatik, Museologie, Digital Humanities, Geographie u.a.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Nach der Teilnahme an diesem Module verstehen die Studierenden Problemstellungen und Methoden im eigenen Fach wie in den angrenzenden Wissenschafts- und Anwendungsgebieten. Sie entwickeln Kenntnisse, Fähigkeiten und Fertigkeiten in Bezug auf Kommunikation, Kooperation und Konfliktlösung in interdisziplinärer Zusammenarbeit.

Courses (type, number of weekly contact hours, language — if other than German)

S + V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Specialisation assessment. Unless otherwise specified, the following methods can be chosen from for assessment in the specialisations Human-Computer Systems: a) written examination (approx. 75 minutes) and presentation of project results (approx. 15 minutes), b) presentation (approx. 20 minutes) and written elaboration (approx. 5 pages), c) presentation (approx. 20 minutes) and presentation of project results (approx. 20 minutes), d) presentation (approx. 20 minutes) and written examination (approx. 75 minutes), or e) term paper (approx. 10 pages).
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title	Abbreviation
Specialization MCS 2	06-MCS-V2-101-m01

Module coordinator	Module offered by
chairperson of examination committee of the Bachelor's degree programme Mensch-Computer-Systeme (Human-Computer Systems)	Institute of Human Computer Media

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	undergraduate	--

Contents

German contents available but not translated yet.

In diesem Modul werden Inhalte des Studiums vertieft und Bezüge zu Nachbarwissenschaften hergestellt, die die bisherigen im Studium erworbenen Kompetenzen erweitern und vertiefen, z.B. Medienkommunikation, Wirtschaftsinformatik, Interaction Design, Techniksoziologie, Psychologie, Informatik, Museologie, Digital Humanities, Geographie u.a.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Nach der Teilnahme an diesem Module verstehen die Studierenden Problemstellungen und Methoden im eigenen Fach wie in den angrenzenden Wissenschafts- und Anwendungsgebieten. Sie entwickeln Kenntnisse, Fähigkeiten und Fertigkeiten in Bezug auf Kommunikation, Kooperation und Konfliktlösung in interdisziplinärer Zusammenarbeit.

Courses (type, number of weekly contact hours, language — if other than German)

S + V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Specialisation assessment. Unless otherwise specified, the following methods can be chosen from for assessment in the specialisations Human-Computer Systems: a) written examination (approx. 75 minutes) and presentation of project results (approx. 15 minutes), b) presentation (approx. 20 minutes) and written elaboration (approx. 5 pages), c) presentation (approx. 20 minutes) and presentation of project results (approx. 20 minutes), d) presentation (approx. 20 minutes) and written examination (approx. 75 minutes), or e) term paper (approx. 10 pages).
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Specialisation Human Factors			06-MCS-VHuFa-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Psychological Ergonomics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

German contents available but not translated yet.

In diesem Modul werden verschiedene sicherheitskritische und komplexe Arbeitsbereiche behandelt in denen Human Factors eine große Rolle spielt (z.B. Luftfahrt, Krankenhaus und Personentransportation). Hierzu wird jeweils (1) ein Bereich mit seinen Besonderheiten hinsichtlich der Mensch-Maschine-Schnittstelle vorgestellt, (2) aktuelle Probleme und Forschungsthemen dieses Bereiches referiert und (3) Möglichkeiten und Grenzen diskutiert wie man mit einem Mensch-Computer Systeme Studium zu einer Problemlösung und Forschung beitragen kann. Im Rahmen des Seminars sind auch Exkursionen in oben genannten Bereiche geplant.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Dieses Modul baut auf den Grundkenntnissen im Bereich Ergonomie auf und diese Kenntnisse werden in Bezug auf sicherheitskritische und komplexe Arbeitsbereiche vertieft. Die Studierenden können durch Einblick und Kontakte in Arbeitsbereiche beurteilen wie Mensch-Maschine-Schnittstellen im Kontext gestaltet werden müssen. Des weiteren können die Studierenden diese Schnittstellen unter sicherheitskritischen Aspekten und unter Berücksichtigung von arbeitsbereichspezifischen Besonderheiten analysieren und diese Ergebnisse in Entwürfe von neuen Schnittstellen einfließen lassen. Die Exkursionen bieten einen Einblick in Felder in denen Praktika oder Projekt- und Abschlussarbeit relevant sind und ebenfalls ein potenzielles Berufsfeld darstellen.

Courses (type, number of weekly contact hours, language — if other than German)

S (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Specialisation assessment. Unless otherwise specified, the following methods can be chosen from for assessment in the specialisations Human-Computer Systems: a) written examination (approx. 75 minutes) and presentation of project results (approx. 15 minutes), b) presentation (approx. 20 minutes) and written elaboration (approx. 5 pages), c) presentation (approx. 20 minutes) and presentation of project results (approx. 20 minutes), d) presentation (approx. 20 minutes) and written examination (approx. 75 minutes), or e) term paper (approx. 10 pages).
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in
Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Specialisation Usability			06-MCS-VUsab-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Psychological Ergonomics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

German contents available but not translated yet.

In diesem Modul werden vertieft Inhalte, Methoden und Anwendungen der Usability Forschung gelehrt, also der Gestaltung von Mensch-Computer-Systemen entlang der Kriterien Effektivität, Effizienz und Zufriedenstellung. Anwendungsbeispiele kommen dabei aus der industriellen Anwendung, dem Fahrzeug- und Bürobereich, aber auch aus dem öffentlichen und privaten Raum.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Nach der Teilnahme an diesem Modul verstehen die Studierenden die Prinzipien ausgewählter Usability Methoden und Domänen und sind in der Lage selbst Benutzungsschnittstellen zu gestalten sowie Studien durchzuführen, um Fragestellungen aus dem Bereich der Mensch-System Interaktion zu untersuchen. Des weiteren können sie die Vor- und Nachteile verschiedener Methoden abschätzen und empirische Studien sowie Gestaltungslösungen beurteilen und kritisch hinterfragen.

Courses (type, number of weekly contact hours, language — if other than German)

S (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Specialisation assessment. Unless otherwise specified, the following methods can be chosen from for assessment in the specialisations Human-Computer Systems: a) written examination (approx. 75 minutes) and presentation of project results (approx. 15 minutes), b) presentation (approx. 20 minutes) and written elaboration (approx. 5 pages), c) presentation (approx. 20 minutes) and presentation of project results (approx. 20 minutes), d) presentation (approx. 20 minutes) and written examination (approx. 75 minutes), or e) term paper (approx. 10 pages).
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Specialisation User Experience			06-MCS-VUsEx-101-m01
Module coordinator		**Module offered by**	
holder of the Chair of Psychological Ergonomics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

German contents available but not translated yet.

In diesem Modul werden vertieft Inhalte, Methoden und Anwendungen der User Experience Forschung gelehrt, also der Gestaltung von Mensch-Computer-Systemen hinsichtlich eines guten Erlebens der Benutzer. Anwendungsbeispiele kommen dabei aus dem öffentlichen und privaten Raum, beinhalten z.B. Kundenzufriedenheit, Persuasive Interfaces, Ästhetische Gestaltung und Service Design.

Intended learning outcomes

German intended learning outcomes available but not translated yet.

Nach der Teilnahme an diesem Modul verstehen die Studierenden die Prinzipien ausgewählter User Experience Methoden und Domänen und sind in der Lage selbst Benutzungsschnittstellen zu gestalten sowie Studien durchzuführen, um entsprechende Fragestellungen aus dem Bereich der Mensch-System Interaktion zu untersuchen. Des weiteren können sie die Vor- und Nachteile verschiedener Methoden abschätzen und empirische Studien sowie Gestaltungslösungen beurteilen und kritisch hinterfragen.

Courses (type, number of weekly contact hours, language — if other than German)

S (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Specialisation assessment. Unless otherwise specified, the following methods can be chosen from for assessment in the specialisations Human-Computer Systems: a) written examination (approx. 75 minutes) and presentation of project results (approx. 15 minutes), b) presentation (approx. 20 minutes) and written elaboration (approx. 5 pages), c) presentation (approx. 20 minutes) and presentation of project results (approx. 20 minutes), d) presentation (approx. 20 minutes) and written examination (approx. 75 minutes), or e) term paper (approx. 10 pages).
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)
Master's degree (1 major) Media Communication (2014)
Master's degree (1 major) Media Communication (2013)

Module title			Abbreviation
Computer Science in Media 1			06-MK-MedInf1-MCS-101-m01
Module coordinator		**Module offered by**	
holder of the Professorship of Media Informatics		Institute of Human Computer Media	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Media computer science is an interdisciplinary field of teaching and research, dealing with various aspects of information processing in the context of digital media. The module *Medieninformatik 1* (*Computer Science for Media 1*) provides students with a fundamental knowledge and a practical overview of current digital media types.

Intended learning outcomes

Students are familiar with the central concepts of media informatics. They have a basic knowledge of information processing with a special focus on digital media.

Courses (type, number of weekly contact hours, language — if other than German)

V + T (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or b) written examination (approx. 40 minutes) with exercises (40 hours), weighted 5:1 or c) oral examination of one candidate each (approx. 30 minutes) or d) presentation (15 to 30 minutes) with written elaboration (10 to 15 pages) or e) term paper (15 to 20 pages) or f) portfolio (maximum 20 pages)
Language of assessment: German or English

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Human-Computer Systems (2010)
Master's degree (1 major) Business Information Systems (2013)

Module title			Abbreviation
Statistics			06-PSY-STAT-092-m01
Module coordinator			**Module offered by**
holder of the Professorship of Psychological Research Methods			Institute of Psychology
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
12	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The module teaches the basics of descriptive and inferential statistics (descriptive statistics, graphs, regression and correlation analysis, probability theory, Bayesian, distributions, sampling techniques, estimation principles, confidence intervals, theory of null hypothesis testing, parametric and non-parametric methods for uni- and bivariate records, contingency table analysis, analysis of variance). The principles of statistical analysis of data will be discussed in a lesson on the basis of examples. The practical application of the methods is trained in tutorials with the help of calculating exercises.

Intended learning outcomes

The module teaches the basics of descriptive and inferential statistics (descriptive statistics, graphs, regression and correlation analysis, probability theory, Bayesian, distributions, sampling techniques, estimation principles, confidence intervals, theory of null hypothesis testing, parametric and nonparametric methods for uni- and bivariate records, contingency table analysis , analysis of variance). The principles of the statistical analysis of data will be discussed in a lesson with examples. The practical application of the method is trained in tutorials by calculating exercises.

Courses (type, number of weekly contact hours, language — if other than German)

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 06-PSY-STAT-1-092: S + Ü (no information on SWS (weekly contact hours) and course language available)
- 06-PSY-STAT-2-092: S + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component 06-PSY-STAT-1-092: Statistics 1 Statistics 1

- 6 ECTS, Method of grading: numerical grade
- written examination (approx. 120 minutes)

Assessment in module component 06-PSY-STAT-2-092: Statistics 2 Statistics 2

- 6 ECTS, Method of grading: numerical grade
- written examination (approx. 120 minutes)

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)
--
Module appears in
Bachelor' degree (1 major) Psychology (2009) Bachelor' degree (1 major) Psychology (2010) Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Introductory Programming Course			10-I-EPP-101-m01
Module coordinator		**Module offered by**	
Dean of Studies Informatik (Computer Science)		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The programming language used is Java. In the practical course, small to middle-sized java programs are to be implemented independently.

Intended learning outcomes

The students are able to independently develop and implement small to middle sized Java programs.

Courses (type, number of weekly contact hours, language — if other than German)

P (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) completion of programming exercises and written examination (approx. 75 minutes) or b) completion of programming exercises and oral examination (one candidate each: approx. 15 minutes, groups of 2: 20 minutes, groups of 3: 40 minutes)

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Business Information Systems (2013)
Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Foundations of Algorithms and Data Structures			10-I-GADS-101-m01
Module coordinator		**Module offered by**	
Dean of Studies Informatik (Computer Science)		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).	

Contents

Design and analysis of algorithms, recursion vs. iteration, sort and search methods, data structures, abstract data types, lists, trees, graphs, basic graph algorithms, programming in Java.

Intended learning outcomes

The students are able to independently design algorithms as well as to precisely describe and analyse them. The students are familiar with the basic paradigms of the design of algorithms and are able to apply them in practical programs. The students are able to estimate the run-time behaviour of algorithms and to prove their correctness.

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (80 minutes) or b) oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Bachelor' degree (1 major) Business Information Systems (2013)
Bachelor' degree (1 major) Human-Computer Systems (2010)

Module title			Abbreviation
Software Technology			10-I-ST-102-m01
Module coordinator		**Module offered by**	
Dean of Studies Informatik (Computer Science)		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).	

Contents

Object-oriented software development with UML, development of graphical user interfaces, foundations of databases and object-relational mapping, foundations of web programming (HTML, XML), software development processes, unified process, agile software development, project management, quality assurance.

Intended learning outcomes

The students possess a fundamental theoretical and practical knowledge on the design and development of software systems.

Courses (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3.

Allocation of places

--

Additional information

--

Workload

--

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 49 (1) 1. b) Datenbanksysteme und Softwaretechnologie
§ 69 (1) 1. b) Datenbanksysteme und Softwaretechnologie

Module appears in

Bachelor' degree (1 major) Computer Science (2010)
Bachelor' degree (1 major) Mathematics (2012)
Bachelor' degree (1 major) Mathematics (2013)
Bachelor' degree (1 major) Economathematics (2012)
Bachelor' degree (1 major) Business Information Systems (2013)
Bachelor' degree (1 major) Human-Computer Systems (2010)
Bachelor' degree (1 major) Computational Mathematics (2012)
Bachelor' degree (1 major) Computational Mathematics (2013)
Bachelor' degree (1 major) Aerospace Computer Science (2009)
Bachelor' degree (1 major) Aerospace Computer Science (2011)

First state examination for the teaching degree Realschule Computer Science (2012)
First state examination for the teaching degree Gymnasium Computer Science (2009)