

MSc HUMAN MEDIA INTERACTION (HMI)
Specialization: Human Computer Interaction and Design
(HCID) entry point

Programme mentor: prof.dr. D.K.J. Heylen

Date registration BOZ:

academic year 2015-2016

Year enrollment MSc :

Name :

Student number:

Telephone :

Credits *

Compulsory courses

<input checked="" type="checkbox"/>	block 1a&1b/2a&2b	192166100	HMI Project ¹	10
<input checked="" type="checkbox"/>	block 1a		Innovation and Entrepreneurship (<i>not for CreaTe student</i>)	5
<input checked="" type="checkbox"/>	block 1b	192165201	KMT Media and Technology	5
<input checked="" type="checkbox"/>	block 1a	201000113	User Centred Design of New Media	5
<input checked="" type="checkbox"/>	block 1b	201400604	Business Development Lab (<i>CreaTe students 12ec</i>)	7.5/12
<input checked="" type="checkbox"/>	block 2a	201100126	Human Computer Interaction	5

Electives

<input type="checkbox"/>	block 1a	201200063	Philosophy of Technology	5
<input type="checkbox"/>	block 1a/2a/2b	192166200	Capita Selecta HMI	5
<input type="checkbox"/>	block 1b	191612680	Computer Ethics	5
<input type="checkbox"/>	block 1b	192166200	Capita Selecta (special edition on Human Robot Inter.)	5
<input type="checkbox"/>	block 2a	192111301	Ubiquitous Computing	5
<input type="checkbox"/>	block 2b	192850790	Design and Emotion	5

Elective courses (special permission needed from programme-mentor)

<input type="checkbox"/>	block 1a	201300034	Resilience Engineering	5
<input type="checkbox"/>	block 1b	201500133	Embodied Interaction	5
<input type="checkbox"/>	block 1b/2a	201400174	Data Science ²	5
<input type="checkbox"/>	block 2b	201300074	Research Experiments in Databases & Information Retrieval	5
<input type="checkbox"/>	block 2b	201000201	Virtual Reality	5
<input type="checkbox"/>	block 1a & 1b	192850830	Create the Future	10
<input type="checkbox"/>	block 2a & 2b	192166420	Machine learning	10
<input type="checkbox"/>	block 2a & 2b	192166370	Conversational Agents	10

Second year specialization courses

<input type="checkbox"/>	block 1a	201400180	Multisensory Design	5
<input type="checkbox"/>	block 1a	192166310	Speech and Language Processing 1	5
<input type="checkbox"/>	block 1a/1b/2a	192850800	Virtual Reality Capita Selecta	5
<input type="checkbox"/>	block 1a	192320601	Multi-Agent Systems	5
<input type="checkbox"/>	block 1b	192166320	Speech and Language Processing 2	5
<input type="checkbox"/>	block 2a	191210910	Image Processing and Computer Vision	5
<input type="checkbox"/>	block 1a & 1b	192160400	Information Retrieval	10
<input type="checkbox"/>	block 2a & 2b	201000078	Brain Computer Interfacing	10

choose 15 or 17.5 EC in each block

Total credits ...

Signature prof.dr. D.K.J. Heylen:

Signature student:

Date: _____

Date: _____

* Credits/ECTS: European Credit Transfer System. One year of study is 60 credits.

¹ this course is offered in both the first or the second semester. (for CreaTe graduates the only option is to do it in the second semester.)

² This course involves 4 topics of each 2.5 EC of which at least two must be selected.

Course programme options (more options are possible)

OPTION A (HMI project in second semester) **CreaTe graduates must do Business Development Lab of 12 EC in block 1B, and no elective.**

Block 1A	Block 1B	Block 2A	Block 2B
Innovation & entrepreneurship Theory * (5 EC)	Business Development Lab* (7,5 EC/12 EC)	HMI-project* (10 EC)	
User Centred Design of New Media * (5 EC)	Media and Technology* (5 EC)	Human Computer Interaction (5 EC)*	Design and Emotion (5 EC)
Philosophy of Technology (5 EC)	Computer Ethics (5 EC) / ---	Ubiquitous Computing (5 EC)	Capita Selecta HMI (5 EC)

OPTION B (HMI project in second semester, with one non-standard elective)

Block 1A	Block 1B	Block 2A	Block 2B
Innovation & entrepreneurship Theory * (5 EC)	Business Development Lab* (7,5 EC/12 EC)	HMI-project* (10 EC)	
User Centred Design of New Media * (5 EC)	Media and Technology* (5 EC)	Human Computer Interaction (5 EC)*	Design and Emotion (5 EC)
Philosophy of Technology (5 EC)	Capita Selecta HMI (5 EC) - special edition on Human-Robot Interaction / ---	Ubiquitous Computing (5 EC)	<i>Elective</i>

OPTION C (HMI project in first semester, with two non-standard electives) **THIS OPTION DOES NOT APPLY TO CREATE GRADUATES**

Block 1A	Block 1B	Block 2A	Block 2B
HMI-project* (10 EC)		Human Computer Interaction (5 EC)*	Design and Emotion (5 EC)
Innovation & entrepreneurship Theory * (5 EC)	Business Development Lab* (7,5 EC)	Ubiquitous Computing (5 EC)	Capita Selecta HMI (5 EC)
User Centred Design of New Media * (5 EC)	Media and Technology* (5 EC)	<i>Elective</i>	<i>Elective</i>

OPTION D (HMI project in second semester, with multiple electives) **THIS OPTION DOES NOT APPLY TO CREATE GRADUATES**

Block 1A	Block 1B	Block 2A	Block 2B
Innovation & entrepreneurship Theory * (5 EC)	Business Development Lab* (7,5 EC)	HMI-project* (10 EC)	
User Centred Design of New Media * (5 EC)	Media and Technology* (5 EC)	Human Computer Interaction (5 EC)*	<i>Elective</i>
<i>Elective</i>	<i>Elective</i>	<i>Elective</i>	<i>Elective</i>

SHORT COURSE DESCRIPTIONS

See Osiris for more details: www.utwente.nl/osiris.

Advanced Database Systems (192110902) is about requirements, architecture and implementation of non standard database applications that deal, besides with structured data, also with text, graphics and images. Required knowledge is the course Databases (192110741).

Artificial Intelligence, self-tuition (192191500) is a self study course offering a broad introduction into the field of Artificial Intelligence, covering several basic AI formalisms for defining and solving problems: search, knowledge representation, reasoning, learning and reasoning under uncertainty.

Brain Computer Interfacing (201000078) introduces several BCI paradigms, signal acquisition, pre-processing techniques, classification methods and user feedback. Students also design, perform, analyse and evaluate their own BCI experiment.

Business Development Lab (201400604) is part of the Innovation & Entrepreneurship module, in which students learn about different types of innovations and entrepreneurial activities, key theories in the field and their applicability, and to design and evaluate solutions to empirical problems related to innovation and entrepreneurship.

Capita Selecta HMI (192166200): students individually study the literature on a particular HMI-related topic and carry out research leading to an article and presentation of the results. This course is offered in all blocks but can be done only once. *In Block 1B there will be a special edition on Human-Robot Interaction. Please ask the programme mentor for more information!*

Computer Ethics (191612680): The course helps students develop insight into ethical implications of computers in society and the professional responsibility of computer scientists. It covers ethical aspects of the design, implementation and use of computer systems and software.

Create the Future (192850830): the students learn to write future scenarios. Based on one or more of these scenarios a product for the future is developed. The aim of the course is to develop a long term view, for instance for over five or ten years, on a product or a product range.

Conversational Agents (192166370) is about various behaviours (speech, gaze, gesture, etc.) that are part of human communication. Based on literature and own observations and analyses, we design, implement and evaluate models for natural man-machine interaction.

Data Science (201400174) consists of individual 2.5EC topics of which at least two must be chosen: (1) XML Databases; (2) Representing data semantics with the Semantic Web; (3) Data Warehousing, OLAP, and Data Visualization; (4) Data Mining; (5) Information extraction from text using natural language processing.

Design and Emotion (192850790) studies and practices Human-Technology relations from a psychology perspective and deals especially with the emotional aspects of product use.

Embodied Interaction (201500133) is about a new design-research field that studies the interaction between humans and artifacts and does so 'through' design. It asks how we may design mixed physical- and digital interactive products that seamlessly integrate with people's everyday life and experience.

HMI-project (192166100): students apply and develop their knowledge of specific HMI themes and their knowledge of software design and implementation to design, implement and evaluate a prototype of an interactive system.

Human-Computer Interaction (201100126) introduces recent topics in Human-Computer Interaction (HCI). From a psychological perspective we elaborate how to design information technology to best suit the human user's mind.

Image processing and computer vision (191210910) provides the fundamentals for 2D signal processing applied to digital images and discusses techniques for extracting the information that is represented by a digital image.

Information Retrieval (192160400): Information Retrieval (IR) is the discipline that studies computer-based search tools. The first part of the course provides the foundations of IR. The second provides hands-on experience with new applications of IR.

Innovation & Entrepreneurship (201500115). This is a 15 EC module of which HCID students do only the following parts: Introduction to Entrepreneurship, Finance and Innovation Management.

Machine Learning (192166420) gives an overview of various machine learning techniques, their complexity and application domain. Students learn to apply advanced models, especially for online learning and the classification and prediction of time series.

Media and Technology (192165201) is about designing novel interactive installations that create a particular experience in the audience. Mixed student teams think of a new concept, create an installation, present it in an exhibition and document it in a movie.

Multi-Agent Systems (192320601) studies computer systems consisting of agents: software or hardware modules able to pursue, in an autonomous and rational way, one or more goals. Topics include agent architectures, interaction, negotiation and communication.

Multisensory Design (201400180) teaches among other things how people perceive products through different senses (modalities), and how the different modalities interact. Students practice the translation from a desired experience to a design for all modalities.

Philosophy of Technology (201200063) deals with the emergence of the philosophy of technology as a field of philosophical inquiry and its central (social) problems, discussing its main philosophers, developments and themes.

Research Experiments in Databases and Information Retrieval (201300074): in this course (REDI in short) students do a research project on Databases and/or Information Retrieval. To follow the course in a useful way, students must have done one or more master courses with a Database or Information Retrieval topic.

Resilience Engineering (201300034) provides in-depth knowledge of current safety science and cognitive systems engineering theories, from disciplines such as complexity science, ecology, organizational studies, and safety management.

Speech and Language Processing 1 (192166310): together with SLP2 this course forms an introduction into natural language processing. In SLP1 we focus on written language, and how language technology tools can be used for data mining and analyses of social media such as tweets and blogs.

Speech and Language Processing 2 (192166320): together with SLP1 this course forms an introduction into natural language processing. In SLP2 we focus on spoken language. Several speech processing methods and examples of running systems will be discussed.

Ubiquitous Computing (192111301) introduces methods and concepts concerning the unobtrusive, disappearing, or invisible computer. Topics include ubiquitous computing in home, office, well-being, etc.; architectures, sensor networks, tangible interfaces, internet of things, and pervasive systems.

User Centred Design of New Media (201000113) focuses on making the interaction and interface of new media applications, like websites, mobile phone apps and kiosks, accessible and usable for groups with special needs, specifically blind or low vision users.

Virtual Reality (201000201) aims at exploring the possibilities of virtual tools (from simple displays to full-blown 3D environments), focusing on integration and combination of different techniques for stimulating the human senses.

Virtual Reality Capita Selecta (192850800) is an individual assignment on the use of VR as a tool for product design. Example topics: developing a VR-application for interacting with virtual prototypes; consequences of using VR in the design process; involving end-users in the process; human perception and cognition; etc.

Translation table from compulsory HMI courses to HCID courses:

HMI	HCID
201100126 Human Computer Interaction	Introduction Human Computer Interaction
201000113 User Centred Design of New Media	Design of Interactive Systems
192166100 Human Media Interaction project	Design Project in Human-Computer-Interaction + Evaluation Techniques
192165201 Media & Technology	Programming Interactive Systems
201500115 Innovation & Entrepreneurship	I&E Minor
201400604 Business Development Lab	I&E Minor