



## School of Information Systems

<b>Course name</b>	<b>Human-Computer Interaction (HCI)</b>
<b>Year and semester</b>	<b>2022, semester B</b>

<b>Academic credit</b>	<b>Academic hours</b>	<b>Exercise</b>
2	2	-

### Course staff

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### Course Description

<b>Course objectives</b>	The aim of the course is to learn the process of developing an information system interface focusing on two aspects: developing critical thinking for interface analysis, and execution capabilities for characterizing and designing an interface. In addition, the aim of the course is to develop teamwork skills in international teams and English-language speaking skills in the professional field.
<b>Course language</b>	<b>The entire course will be held in English <u>In all its aspects</u>.</b> The lectures will be given in English, the course content will be in English, the discussion during the lessons will be conducted in English and the submission of assignments and the test will be done in English.

<b>International collaborative course</b>	This course is a joint effort of 2 faculty members from <a href="#">Berliner Hochschule für Technik</a> (Berlin, Germany) and <a href="#">Tel Aviv- Yaffo Academic College</a> (Israel). The students from Berlin study in a “Learning Design” course and the students in Israel study “Human- Computer Interaction (HCI)” course. The collaboration will consist of joint course lessons and a mutual project.
<b>Abstract</b>	This is a 'User Interface Design for non-designers' course. It is a practical course, based on deep relationships with the local and global Hi-tech industry, and its Product Design methodologies. The course aims to provide students with the theoretical background to develop critical design thinking, in order to examine and design different interfaces. The course follows the Product Design Lifecycle, so that students can experience the relevant methodologies of each stage. During the first quarter of the course, students will practice the research methodologies needed to define product requirements - user contextual inquiries, Stakeholder interviews and Personas. The second quarter focuses on the practical aspects of design, namely Navigation, models of interaction, Information Architecture, and other elements of User Experience. The third quarter leads towards Wireframes design, concept testing, and final Usability Testing of a working product. The last quarter expands students' horizons to different angles in the world of User Experience Design - such as Micro-copy, mobile design and so on.

<b>Prerequisites</b>	According to the guide book
<b>Course requirements / assignments</b>	<b>Submission of a project which consists of several tasks (portfolio).</b> A task Submitted up to a week after due date, will lose 20 points. If the delay is more than a week - this will be considered as "not completed his/her duties ”. <b>In addition there will be a final exam</b>
<b>Final grade</b>	Passing an exam with a grade of at least 60, and also a weighted grade of the assignments of at least 60. Final grade will compose of 60% of the weighted assignments and 40% of the exam’s grade
<b>Attendance</b>	<b><u>Attendance is compulsory (missing upto 2 lessons are allowed during the semester). Students who miss more than 2 lessons will be deducted points 10 from their final grade.</u></b> If the lesson takes place on zoom, opening cams is mandatory. <b><u>Attendance is required in the Israel-Germany joint course sessions. Failure to attend this joint meetings will deduct 5 points from the final score (for each missed meeting).</u></b> In addition, there will be a joint project where students will meet with their colleagues from Germany <b>to work together outside of course time</b> using Slack and any synchronous session software.  <b>Pay attention to what is stated in the curriculum, section 10:</b> The courses at the college are usually held using the frontal teaching method, which is ..." based on the assumption that the student attends classes, reads the background material at the required time and participates in class discussions. , Or during a class discussion, is an essential part of the study material and the student may be required to prove proficiency in this material, test, examiner, or any other assignment assigned to him.A student who does not meet all study requirements should consider the possibility of not being allowed to complete the course. The lecturer has the authority to deprive a student

who has not fulfilled the full requirements of the right to complete the course, that is, to " .... take the exam or submit the assignment for completing the course

The student attends classes, reads the background material at the required time and participates in class discussions. Thus, everything said and presented in a lesson, whether by the lecturer in his lectures, in the answers he answered to the questions presented to him, or during a class discussion, constitutes an essential part of the study material and the student may be required to prove proficiency in this material, test, or any other assignment. On him. A student who does not meet all the study requirements should consider the possibility of not being allowed to complete the course. The lecturer has the authority to deprive a student who has not fulfilled the full requirements of the right to complete the course, that is, to take the exam or submit the assignment for completing the " .... course

## The Joint Project

The joint assignment will be to "To design and construct an interaction between a social humanoid robot and a human" in multicultural groups (each group will consist of 4 students from Israel and 2 from Germany).

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**Assignment:** to construct an interaction between the robot and a human.

1. Choose the target population (e.g., 5 year old child with speech impairment, 75-80 year old lonely adult, a student with autism, etc.) - together **(25.4.22 in Slack)**
2. Choose the topic of the interaction (e.g., teach english, assist in depression, reading to the blind, etc.) - together **(25.4.22 in Slack)**
3. Perform an ethnographic research design, contextual inquiry and implementation of the research) - Israel (feedback from Germany) **(9.5.22)** (feedback by 16.5.22)  
**(Assignment 3 – 15%)**
4. Build Personas - Germany (feedback from Israel) (23.5.22) **(feedback by 30.5.22)**
5. Build a use-case (a scenario consisting of interaction and dialogue) - Germany (feedback from Israel) (i.e., paper prototype) and connect to an instructional design model **(15.6.22) (ongoing feedback will be given during these two weeks in joint sessions). (Assignment 4 – feedback of 4 and 5 - 15%)**
6. Students in Germany build groups of 4 and choose only 1 use case to be programmed in Choregraphe

To be submitted by 15.6.22

## Course content

Week	Lecture topic	Reading chapters/Assignments
1	<b>Introduction, expectations from the course. The wallet challenge</b> <ul style="list-style-type: none"> <li>• Getting to know</li> <li>• Course Objectives</li> <li>• Course content</li> <li>• Design Thinking</li> </ul>	
2	<b>What is HCI</b> <ul style="list-style-type: none"> <li>• historical background</li> <li>• Basic Concepts</li> <li>• The business value of UX examples</li> </ul>	

	<ul style="list-style-type: none"> <li>• ISO9241-210 standard</li> </ul>	
3	<p><b>Cognitive Psychology - Perception and models of interaction</b></p> <ul style="list-style-type: none"> <li>• Perception: vision, hearing, processing memory, attention, and their consequences</li> <li>• Mental models and their adaptation to business needs</li> <li>• Design patterns - Interaction models, wizard, Forms, tabs, etc.</li> <li>• User Experience Elements - Controls and Adjustments (UX Elements)</li> </ul>	
4	<p><b>Understanding users and defining requirements</b></p> <p>Ethnographic Design Research and Contextual Inquiry</p>	
5	<p><b>Personas and Scenarios</b></p> <ul style="list-style-type: none"> <li>• Identifying personas within a target audience</li> <li>• Definition of personas and their design</li> <li>• Leading Personas</li> <li>• Scenarios</li> </ul>	<p><b>Assignment 1: In pairs 15 %</b></p> <p>Planning and conducting an ethnographic research and defining Personas and scenarios (including an interview)</p>
6	<p><b>Design for non-designers</b></p> <ul style="list-style-type: none"> <li>• Design principles</li> <li>• Metaphors</li> <li>• Hierarchy of information</li> <li>• Fonts, colors</li> <li>• Layout, grouping elements</li> <li>• White spaces</li> <li>• Banner blindness</li> </ul>	
7	<p><b>Information, navigation and architecture</b></p> <ul style="list-style-type: none"> <li>• Selection of navigation methods</li> <li>• Search vs. Browse</li> <li>• LATCH model</li> <li>• Information Architecture (IA)</li> <li>• Card sorting</li> </ul>	
8	<p><b>Wireframes and concept testing</b></p> <ul style="list-style-type: none"> <li>• Wireframes design</li> <li>• Preparation of materials for concept testing</li> <li>• Concept Testing</li> <li>• User centered design.</li> <li>• Participatory Design</li> </ul>	<p><b>Axure</b></p> <p>Designing and prototyping tool</p> <p><b>Assignment 2: in pairs 15%</b></p> <p>Wireframe and Low Fidelity prototype</p>
12.4.22 (Passover vacation)	<p><b>Social Humanoid Robots</b></p> <p><b>Group Meeting 1 :</b></p> <p><b>Lecture:</b> Social humanoid robots and how to build an interaction, Prof. Dr. Ilona Buchem (45 mins).</p> <p><b>project presentation</b> (10 min)</p>	

<b>10:00-11:30 (Israel)</b>	<b>Groups meeting</b> (35 min) - each group of 6 will meet in a breakout room to get to know each other, exchange contact details and start to discuss project ideas. the groups put their ideas in Slack	
<b>10</b>	<b>Usability Evaluation</b> <ul style="list-style-type: none"> <li>• Principles of usability</li> <li>• Performing an expert evaluation. Heuristic evaluation/Expert evaluation</li> <li>• Usability testing</li> <li>• Advanced methods of usability testing guerrilla testing</li> <li>• Eye Tracking</li> <li>• Moderated/Unmoderated testing</li> </ul>	
<b>11</b>	<b>Usability Evaluation (continue)</b> <ul style="list-style-type: none"> <li>• Principles of usability</li> <li>• Performing an expert evaluation. Heuristic evaluation/Expert evaluation</li> <li>• Usability testing</li> <li>• Advanced methods of usability testing guerrilla testing</li> <li>• Eye Tracking</li> <li>• Moderated/Unmoderated testing</li> </ul>	
<b>12</b>	<b>Micro-copy</b> <ul style="list-style-type: none"> <li>• The importance and value of text in an interface</li> <li>• The connection between text and brand perception.</li> <li>• Writing text in an interface, instructions, error messages, motivation for action, etc.</li> </ul>	
<b>2.6.22 (Semester Break) Wednesday 10:00-11:30 (Israel)</b>	<b><u>Group Meeting 2 :</u></b>  10 groups will present the process and the use case - 4-5 min each (1 hour) Course evaluation and feedback (30 min)	<b>Assignment 5:in pairs 40%</b>  Planning and conducting usability research.Planning and designing a functional prototype

## Resources

Required reading list and other sources:

The Design of Everyday Things, Revised and Expanded Edition. Norman, D. (2013). Basic Books
The Inmates Are Running the Asylum, 1 <sup>st</sup> edition. Cooper, A. (2004). Sams - Pearson Education
Hooked: How to Build Habit-Forming Products, 1 <sup>st</sup> Edition , Eyal, N. (2014). Portfolio