

Course programme

Course code: IFI7311.DT	Ambient Computing		
ECTS credits: 4	Amount of contact lessons: 22	Teaching semester: Autumn	Assessment form: Pass/fail
Course objectives:	The course aims to provide students with an overview of the principles and hands-on experience of designing and developing ambient computing systems.		
Brief description of course content: (including the description of the independent work)	<p>The course provides an overview of ambient computing and gives students a possibility to experiment with prototyping their own ambient computing systems.</p> <p>The course will be a mixture of theory and practice and will include readings and work on a design challenge. The design challenge will foresee students addressing the topics of designing ambient computing systems for enhancing the life of elderly or enhancing the mission of cultural heritage sites. The final outcome will be a specification, a poster, and a video prototype.</p> <p>The course will consist of brief introductions to the main ambient computing concepts and practical work in groups, where students will use a range of enabling technologies to specify and prototype ambient computing systems. The course will have a specific focus on prototyping systems that support distributed user interfaces spanning devices with and without an actual display.</p> <p>The course will consist of bi-weekly lectures. Time between lectures will be devoted to lab work.</p>		
Learning outcomes:	<p>After successfully completing the course students will be aware of the:</p> <ul style="list-style-type: none"> • Main principles of ambient computing; • A range of suitable technologies for enabling ambient computing systems; • The practical nuances of implementing ambient computing systems. 		
Assessment Methods:	Student projects will be assessed in terms of skill, originality, and detail of their outcome.		

	<p>The final grade will be composed of the following:</p> <ul style="list-style-type: none"> • Skill – 20% • Originality - 20% • Detail of the outcome – 60% 			
Lecturer(s):	Ilja Šmorgun			
Course title in Estonian:	Ümbritsev arvutustehnika			
Prerequisted course(s):	-			
Compulsory literature:	There is no required literature in the sense of a physical book. All materials will be provided on the course blog available at http://ifi7311dt.wordpress.com/ .			
Replacement literature:	-			
Participation and exam requirements:	For the team project students are expected to deliver a specification of their proposed system, a poster, and a video prototype. The video prototype can be simulated, but should preferably depict an actually developed system.			
Independent work:	Students who were not able to participate in the lectures will be required to individually read through the lecture materials, contribute to the main outcomes of their group project and provide a detailed explanation of their contribution.			
Grading criteria scale or the minimum level necessary for passing the subject:	Student projects will be graded according to the following scale:			
	<i>Skill</i>	<i>Originality</i>	<i>Detail</i>	<i>Grade</i>
	Basic features used	System already exists	Shallow specification, poster is difficult to read and unattractive, all prototype functionality is simulated	0 – 50
	Basic features	Minor changes	Specification	50 – 60

	used with modification	to an existing system	is not very detailed, poster is somewhat readable, but unattractive, some things in the prototype work	
	Advanced features used	Major changes to an existing system	Specification is concise, but covers all major aspects of the system, poster is fairly easy to read and is somewhat attractive, most things in the prototype work	60 – 80
	Advanced features used with modification	Original system with other systems in existence	Specification is quite detailed, poster is easy to read and attractive, only minor bugs in the prototype	80 – 90
	Multiple features used in harmony	Original system with no analogies	Specification is very detailed and thorough, poster is easy to read and visually appealing, fully functional prototype	90 – 100
Students should grade above 71% to successfully pass the course.				
Information about the course:	Activities are organised in bi-weekly modules, each focusing on specific topics.			

(Topics by contact session, deadlines of independent works and exams/assessments times)	<i>Date</i>	<i>Time</i>	<i>Topic</i>
	08.09	08:15 – 09:45	Introduction to ambient computing
	22.09	08:15 – 09:45	Main components and enabling technologies
	06.10	08:15 – 11:45	Requirements and design methods
	20.10	08:15 – 09:45	Application domains
	03.11	08:15 – 11:45	Sensing, analysing, and using contextual information
	17.11	08:15 – 09:45	User interaction
	01.12	08:15 – 11:45	Designing for user interface distribution
	15.12	08:15 – 09:45	Final group presentations

Teaching Unit in charge:	School of Digital Technologies
Course programme is prepared by:	Ilja Šmorgun
Date:	15.08.2016

The course program is registered in the academic unit:

Date:	1.09.2016
Name of academic coordinator:	Viktoria Humal