Course Programme

IFI7154	Developing Interactive Systems		
Study load: 5 (EAP/ECTS)	*Load of contact hours: 32*	*Study semester: S*	*Assessment: Pass/Fail*
Objectives:	The course aims to provide students with the skills necessary for developing interactive systems for the web, mobile platforms, and the desktop.		
Course outline:	The course introduces the building blocks required for developing interactive systems, integrated development environments, UI development toolkits, and source code version control. The course will include both individual and group-based activities, which will provide students with hands-on experience in building functional prototypes. Participants will be provided with support for deciding which platform to target in the development of their group project and will need to deliver a functional prototype by the end of the course. The course will consist of intensive face-to-face sessions spanning a period of 16 weeks. The initial 4 sessions will be introductory, while the remaining 4 will focus on developing the actual prototypes in groups. The course consists of the following modules: • Introduction to visual programming; • Overview of web application development; • Overview of Android and Windows application development; • Overview of iOS application development; • Developing the group project. The lecturers are there to support the work of the students, offering advice and guidance, but not providing the code needed to complete the assignments or debugging the code produced by students.		
Learning Outcomes:	After successfully completing the course students will know: • How to choose a suitable platform for developing their prototypes; • How to develop functional prototypes; • How to work in teams and distribute functionality to be developed among team members.		
Assessment Methods:	Pass/fail assessment.		
Teacher(s):	Ilja Šmorgun, MSc Fernando Loizidez, PhD		
Subject name in Estonian:	Interaktiivsete tarkvarasüsteemide loomine		
Prerequisite subject(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://ifi7154.wordpress.com. A list of non-essential recommended reading		

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	material is provided in the replacement literature section, should students want to explore a specific topic further.
Replacement Literature:	Books: • iOS App Development Essentials • Programming in iOS 8 • Android 4 App Development Essentials • Beginning Android 4 • Microsoft® Expression Blend® 4 Step by Step • Getting Started with Windows 8 Apps • Professional Visual Studio 2013 • Programming HTML5 Applications Webpages: • http://msdn.microsoft.com/library/windows/apps/hh779072.aspx • http://ux.stackexchange.com/questions/17740/how-is-mobile-information-architecture-different-from-desktop • http://msdn.microsoft.com/en-us/expression/cc197141.aspx • http://msdn.microsoft.com/en-us/library/windows/apps/dn263215.aspx • http://msdn.microsoft.com/en-us/windows/apps/br211386.aspx • https://developer.apple.com/ios8/ • https://developer.android.com/training/index.html
Participation and Exam requirements:	The final grade will consist of the following: • 10% - web development • 10% - Android development • 10% - Windows development • 10% - iOS development • 10% - GitHub activity • 40% - group project • 10% - attendance The threshold for passing the course is 51%.
Independent work:	Students who were not able to participate in the lectures will be required to: • Develop prototypes targeting the platforms covered in the course; • Develop a fully functional prototype for a platform of their choice.
Grading criteria scale or the minimal level necessary for passing the subject:	Each student will be assessed based on developing individual prototypes, their own contribution to the team project, activity on GitHub, and course attendance. For the team project students are expected to agree on the feature-set of their prototype and to distribute the features to be developed among the team members. Students will also need to assess the performance of their team members. To successfully complete the course students are required to: • Maintain and regularly update a GitHub repository for their project with source code and documentation; • Individually develop prototypes for each of the platforms covered in the course; • Develop at least one fully functional feature of their group prototype

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	and provide a detailed explanation of the source code. The web, iOS, Android, Windows development, and work on the group project will assessed in terms of functionality, skills, and originality. Functionality • Nothing works, only interface shows: 0 – 50; • Some things work: 50 – 60; • Most things work: 60 – 80; • Only minor bugs: 80 – 90; • Fully functional: 90 – 100. Skill • Basic features used: 0 – 50; • Basic features used with modification: 50 – 60; • Advanced features used: 60 – 80; • Advanced features used with modification: 80 – 90; • Multiple features used in harmony: 90 – 100. Originality • Application already exists: 0 – 50; • Minor changes to existing application: 50 – 60; • Major changes to an existing application: 60 – 80; • Original application with other applications in existence: 80 – 90; • Original application with no analogies: 90 – 100.

Information about the course:	*Date and time*	*Form of study and course content by topic*
	29.01 and 30.01	Setting up a repository and introduction to visual programming (face-to-face session).
	31.01 – 12.02	Visually programming an application prototype (individual work).
	13.02	Overview of web application development (face-to-face session).
	14.02 – 27.02	Developing a web application prototype (individual work).
	28.02	Overview of Android and Windows application development (face-to-face session).
	01.03 – 11.03	Developing Android and Windows prototypes (individual work).
	12.03	Overview of iOS application development (face-to-face session).
	13.03 – 26.03	Developing an iOS application prototype (individual work).
	27.03 – 07.05	Developing group projects (face-to-face sessions on 27.03, 09.04, 23.04 & 07.05 and individual work).