**Course programme**

| Course code: IFI7154.DT | COURSE TITLE: Developing Interactive Systems | | |
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| ECTS credits: 5 | Amount of contact lessons: 30 | Teaching semester: Spring | Assessment form: Pass / fail |
| Course objectives: | The course aims to provide students with the skills necessary for developing interactive systems for a range of platforms, including:<br><br>• Smartwatches;<br><br>• Smartphones and tablets;<br><br>• Smart TVs. | | |
| Brief description of course content:<br><br>(including the description of the independent work) | 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 of building functional prototypes. Course 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.<br><br>The course will consist of intensive face-to-face sessions spanning a period of 16 weeks. The face-to-face sessions will be devoted to exploring the foundations of developing interactive systems and applying them in practice. Between the lectures students will be expected to work on their group projects and time slots in the lectures will be devoted to providing feedback and assessing ongoing progress of every group.<br><br>The course consists of the following modules:<br><br>• Building blocks of interactive systems;<br>• Development for smartphones and tablets;<br>• Development for smartwatches and smart TVs. | | |
| Learning outcomes: | After successfully completing the course students will know:<br><br>• How to choose a suitable platform for developing interactive systems;<br><br>• How to develop functional prototypes; | | |

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| | • How to work in teams and distribute functionality to be developed among team members. |
| Assessment Methods: | Each student will be assessed based on their contribution to the team project as reflected by their GitHub activity. 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.<br><br>To successfully complete the course students are required to:<br><br>• Maintain and regularly update a GitHub repository for their project with source code and documentation;<br>• Develop at least one fully functional feature of their group prototype and provide a detailed explanation of the source code. |
| Lecturer(s): | Ilja Šmorgun, Sonia Sousa |
| Course title in Estonian: | Interaktiivsete tarkvarasüsteemide loomine |
| 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 https://ifi7154dt.wordpress.com. A list of non-essential recommended reading material is provided in the replacement literature section, should students want to explore a specific topic further. |
| Replacement literature: | • iOS 8 App Development Essentials<br>• iOS 9 App Development Essentials<br>• WatchKit App Development Essentials<br>• watchos 2 App Development Essentials<br>• Developing for Apple TV using tvOS and Swift |
| Participation and exam requirements: | The final grade will consist of the following:<br><br>• 25% - Functionality<br><br>• 25% - Skill<br><br>• 25% - Originality |

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| | • 25% - GitHub Activity |
| Independent work: | Students who were not able to participate in the lectures will be required to develop at least one fully functional feature of their group prototype and to provide a detailed explanation of the source code. |
| Grading criteria scale or the minimum level necessary for passing the subject: | Work on the group project will assessed in terms of functionality, skill, originality, and GitHub activity. The scale for each of these criteria is as follows:<br><br>Functionality<br><br>• Nothing works, only interface shows: 0 – 50;<br>• Some things work: 50 – 60;<br>• Most things work: 60 – 80;<br>• Only minor bugs: 80 – 90;<br>• Fully functional: 90 – 100.<br><br>Skill<br><br>• Basic features used: 0 – 50;<br>• Basic features used with modification: 50 – 60;<br>• Advanced features used: 60 – 80;<br>• Advanced features used with modification: 80 – 90;<br>• Multiple features used in harmony: 90 – 100.<br><br>Originality<br><br>• Application already exists: 0 – 50;<br>• Minor changes to existing application: 50 – 60;<br>• Major changes to an existing application: 60 – 80;<br>• Original application with other applications in existence: 80 – 90;<br>• Original application with no analogies: 90 – 100.<br><br>GitHub Activity<br><br>• Committed code occasionally: 0 - 50;<br>• Committed code on a regular basis: 50 - 60; |

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|  | - Committed code often and opened tickets: 60 - 80;<br>- Committed code, opened tickets, and discussed things: 80 - 90;<br>- Committed code, opened tickets, discussed things, wrote documentation, used branching: 90 - 100.<br><br>The threshold for passing the course is 51%. |
| Information about the course:<br><br>(Topics by contact session, deadlines of independent works and exams/assessments times) | 5.02 - Providing an overview of the foundations of developing interactive systems.<br><br>19.02 - Mobile application development.<br><br>4.03 - Smartwatch and smart TV application development.<br><br>17.03 - Individual meetings with teams.<br><br>31.03 - Individual meetings with teams.<br><br>14.04 - Individual meetings with teams.<br><br>28.04 - Individual meetings with teams.<br><br>12.05 - Presentation of the final projects. |

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| Teaching Unit in charge: | School of Digital Technologies |
| Course programme is prepared by: | Ilja Šmorgun |
| Date: | 15.01.2016 |

The course program is registered in the academic unit:

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| Date: | 18.01.2016 |
| Name of academic coordinator: | Ingrid Sander |