VIDZEMES AUGSTSKOLA

FACULTY OF ENGINEERING
STUDY COURSE DESCRIPTION

Course Title:	**MOBILE PROGRAMMING ENGINEERING I**				
Course code (LAIS):	**DatZ2001**				
Study programme:	**Information technologies**				
Type of Study programme:	☐ 1st level professional higher education				
	☒ Professional Bachelor				
	☐ Professional Master				
	☐ Academical Master				
	☐ PhD level				
Type of Study programme:	☒ Compulsory course (Part A)				
	☐ Professional specialization courses (Part B, compulsory)				
	☐ Professional specialization optional courses (Part B, optional)				
	☐ Elective courses (Part C)				
Course Workload:	**Credits**	**ECTS**	**Academic hours**	**Contact hours**	**Independent work hours**
Full time	2	3	80	32	48
Part time	2	3	80	10	70
Course Author/ Tutor:	**Martins Jansevskis**				
	Mg.sc.comp., PhD student				
	martins.jansevskis@va.lv				
	Consultation: according to the schedule for each semester or per individual agreement.				
Course Form:	Full time, part time				
Study year, semester:	3rd year, 1st semester				
Language:	Latvian, English				
Prerequisites for the Course:	Basic knowledge and experience in programming languages – preferably Java programming language; knowledge / insights about development of information systems.				
Course Summary:	The aim of this course is to provide knowledge about history of mobile software development and mobile software research areas. There is given an opportunity to get familiar with platforms of mobile devices, in particular to find out more about Android environment, to get familiar with basic elements of programming in this platform, to get familiar with development of mobile applications and their user interface. A work in groups takes place during the course.				
Course Methods:	Lectures, practical activities, group work, theory tests, final assessment (project work assignment) etc. Introduction; Research areas of mobile software, performing research in chosen domain, basic skills of mobile application development using Android platform. Android Studio environment – getting familiar, configuration/basics. Mobile devices, platforms of mobile devices, types of wireless communications and data transfer, areas of mobile software development. Development of mobile application and their user interfaces, prototyping. Usage of multiple activities; intent filters, dialog windows, notifications; interface (usage of basic views [radio-buttons, etc.], layers, prototype development. Testing of prototypes, usability and mobile location, GPS, Distribution and commercialization of mobile application. SharedPreferences usage, data writing/reading in local file, SD card, SQLite, external data base.				

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<table>
<tr><td>Assessment:</td><td>Examination (project work assignment)</td></tr>
<tr><td>Requirements for Credits:</td><td>
1. Successful completion of workshops/practical work assignments (at least 60% points of totally available).
2. Passed theoretical tests.
3. Successful completion of project work assignment (at least 65% points of totally available).

Final assessment consists of: workshops/practical work assignments, group work evaluations; theoretical tests; project work assignment and project work assignment presentation.

All practical work assignments have to be accepted (i.e. at least with 60% evaluation) in order to get the final evaluation within this course. 150 points system is used to come up with final evaluation. Table below lists totally available points for each activity.

<table>
<tr><th>Work assignment or activity</th><th>Points</th></tr>
<tr><td>Practical work assignments</td><td>50</td></tr>
<tr><td>Theoretical tests</td><td>10</td></tr>
<tr><td>Participation in class work activities</td><td>10</td></tr>
<tr><td>Project work assignment (exam)</td><td>65</td></tr>
<tr><td>Project work assignment presentation (exam)</td><td>15</td></tr>
<tr><td>Total</td><td>150</td></tr>
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Final course evaluation (mark) calculation based on 150 points system is done as it follows below:

>= 93% (139-points) = 10 >= 79% (112- points) = 6
>= 90% (135- points) = 9 >= 75% (105- points) = 5
>= 87% (127- points) = 8 >= 70% (97- points) = 4
>= 83% (120- points) = 7 < 70% (97- points) = 3

Missing practical work assignment deadline: each missed day counts for subtraction of 5% from totally ava
required to acquire at least 60% from totally available points (not counting potential delay) in order to accept practical work assignment as done.
</td></tr>
<tr><td>Respect of academic ethics</td><td>
Students must observe academic and research ethics, Vidzeme University College ethics regulations, including:
- study papers must be independently developed;
- all works of other authors should be referenced in their works, references and ideas;
- appropriate data mining methods, ethics of research, independent collection of empirical data and free of falsification;
- the examination must be conducted by the student independently, without the use of auxiliary materials and consultation with other students, unless otherwise specified by the lecturer.

Failure to comply with academic and research ethics will result in the imposition of a penalty in accordance with ViA's Code of Ethics, and the course must be re-enrolled unless the penalty is an ex-matriculation.
</td></tr>
<tr><td>Learning Outcomes; the evaluation methods and criteria</td><td>
<table>
<tr><th>Learning Outcomes</th><th>The evaluation methods and criteria</th></tr>
<tr><td colspan="2">Knowledge</td></tr>
<tr><td>Knowledge on mobile solutions research/ development areas and types of idea generation</td><td>Development of particular mobile technology solution concept. Passed theoretical test.</td></tr>
<tr><td>Knowledge about Android Studio and Android user interface (UI) foundations.</td><td>Development of particular mobile technology solution concept. Passed theoretical test.</td></tr>
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	Knowledge about prototyping, its application and types; as well as knowledge about mobile solutions ways of distribution and commercialization.	Development of particular mobile technology solution concept. Passed theoretical test.
	Skills	
	To develop mobile technology solution prototype and to prepare accordant solutions development documentation.	Developed practical group work.
	To develop mobile technology solution's foundations level user interface (UI).	Developed practical group work.
	To develop mobile technology solution by using local storage options.	Developed practical group work.
	Competency	
	Use correct mobile technology solutions terminology. To choose appropriate technological approaches for particular assignment implementation.	Course project development and presentation.
	Independently perform mobile technology solutions development design and architecture.	Course project development and presentation.
	To solve mobile technology solutions basic issues.	Course project development and presentation.
Course Compulsory literature:	1. J. F. DiMarzio. Beginning Android Programming with Android Studio, 4ed, Wrox, 2016.	
Course additional literature:	1. D. Smith, E. Hellman. Android Recipes: A Problem-Solution Approach, 5th ed. APress. 2016. 2. Smyth N. Android Studio 3.0 Development Essentials - Android 8 Edition, 1st ed. PayLoad Media 2017	
Course confirmation date:	31.08.2017.	
Date of course description update:	05.04.2020.	

Full time Study Course Plan:

Date	Theme	Academic hours		Study Form
		Contact hours	**Independent work hours**	
Specified before course	Introduction; Research areas of mobile software, performing research in chosen domain, basic skills of mobile application development using Android platform. Android Studio environment – getting familiar, configuration/basics; first application development.	4+4	8	Theoretical lecture. Several topics covering practical work. Group work
	Mobile devices, platforms of mobile devices, types of wireless communications and data transfer, areas of mobile software development. Development of mobile application and their user interfaces, prototyping. Usage of multiple activities; intent filters, dialog windows, notifications; interface (usage of basic views [radio-buttons, etc.], layers, usage of internal applications); prototype development.	4+4	8	Theoretical lecture. Several topics covering practical work. Group work

	Testing of prototypes, usability and mobile location, SQLite. Distribution and commercialization of mobile application. GPS, SharedPreferences usage, data writing/reading in local file, SD card, SQLite, external data base. Support for development of course project assignment.	4+4+4	8	Theoretical lecture. Several topics covering practical work. Group work
	Final examination	4	24	Course project development and presentation.
	Total:	***32***	***48***	

Part time Study Course Plan:

Date	**Theme**	**Academic hours**		**Study Form**
		Contact hours	**Independent work hours**	
Specified before course	Introduction; Research areas of mobile software, performing research in chosen domain, basic skills of mobile application development using Android platform. Android Studio environment – getting familiar, configuration/basics; first application development.	4	23	Theoretical lecture. Several topics covering practical work. Group work
	Mobile devices, platforms of mobile devices, types of wireless communications and data transfer, areas of mobile software development. Development of mobile application and their user interfaces, prototyping. Usage of multiple activities; intent filters, dialog windows, notifications; interface (usage of basic views [radio-buttons, etc.], layers, usage of internal applications); prototype development. Testing of prototypes, usability and mobile location, SQLite. Distribution and commercialization of mobile application. GPS, SharedPreferences usage, data writing/reading in local file, SD card, SQLite, external data base. Support for development of course project assignment.	4	23	Theoretical lecture. Several topics covering practical work. Group work
	Final examination	2	24	Course project development and presentation.
	Total:	***10***	***70***	