

MODULE DESCRIPTION

Module code	
Module name	Informatyka – Programowanie Android
Module name in English	Informatics – Android Programming
Valid from academic year	2016/2017

A. MODULE PLACEMENT IN THE SYLLABUS

Field of study	Management and Production Engineering
Level of education	1st degree <i>(1st degree / 2nd degree)</i>
Studies profile	General <i>(general / practical)</i>
Form and method of conducting classes	Full-time <i>(full-time / part-time)</i>
Specialisation	All
Unit conducting the module	The Department of Production Engineering
Module co-ordinator	Sławomir Luściński, PhD
Approved by:	

B. MODULE OVERVIEW

Type of subject/group of subjects	Major <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	Non-compulsory <i>(compulsory / non-compulsory)</i>
Language of conducting classes	English
Module placement in the syllabus - semester	3rd semester
Subject realisation in the academic year	Winter semester <i>(winter / summer)</i>
Initial requirements	No requirements <i>(module codes / module names)</i>
Examination	Yes <i>(yes / no)</i>
Number of ECTS credit points	4

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	15		24		

C. TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Module target	The aim of the module is to familiarise students with design tools and programming environment to create, test, and implement applications for devices working under the control of the Android operating system. Another aim is to prepare student to create and test their own application for the Android platform.
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Effect symbol	Teaching results	Teaching methods (l/lab/p/other)	Reference to subject effects	Reference to effects of a field of study
W_01	A student understands an application's life cycle and activity mechanisms on the Android platform.	l/lab	K_W05	T1A_W03 S1A_W06
W_02	A student knows the programming environment for the Android platform.	l/lab	K_W05	T1A_W03 S1A_W06
U_01	A student can self-design and create a fully-functional application for the Android platform.	l/lab	K_U07	TA1_U01 TA1_U07 TA1_U08
U_02	A student can design a graphical user interface of an application.	l/lab	K_U07	TA1_U01 TA1_U07 TA1_U08
K_01	A student understands the necessity of continuous improvement of his/her knowledge of informatics.	l/lab	K_K01	T1A_K01

Teaching contents:

1. Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	Introduction to the Android computing platform. Configuring the programming environment. The structure of Android and its applications. Loading applications to the development environment. Project structure: basic application files and catalogues. Virtual AVD device. Creating run configuration. Running an application in an emulator. Debugging.	W_01 U_01 K_01
2	Program structure. Approaches used in programming: Java-based, XML-based, and hybrid. Using the application context. Realising tasks with the use of activity. Work with services. Receiving and broadcasting intents.	W_01 U_01 K_01
3	Defining applications with the use of a manifest file. File configuration. Managing application identity. The configuration of intents filters. System requirements. Permissions. Application resources. The types of resource values. Program storage and access to resources.	W_01 U_01 K_01
4	User interface: activities and activity life cycle. Menu in Android. Option group available under the <i>menu</i> button of a device. Menu as Icon. Submenu.	W_01 W_02 U_01 U_02 K_01
5	Android user interface controls: text, buttons, images, date, and time. Adapters: working, adapter utilisation together with Adapter View controls. Styles and themes.	W_01 W_02 U_01 U_02 K_01
6	Designing dialogue boxes. Alert boxes, prompts.	W_01 W_02 U_01 U_02 K_01
7	The selected best practices for designing and creating an application for the	W_01

	Android platform.	W_02 U_01 U_02 K_01
8	A revision before the exam.	W_01 W_02 U_01 U_02 K_01

2. Teaching contents as regards classes

Class number	Teaching contents	Reference to teaching results for a module

3. Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module
1	The fundamentals of the Java language. Notation and naming conventions. A class, an object, and a method. Data types. Variables and the scope of variables. Mathematical and logic operators. Type conversion and promotion.	W_01 U_01 K_01
2	Downloading and displaying data. Control instructions. Loops. Arrays. The elements of object-oriented programming.	W_01 U_01 K_01
3	Design and run environment. Loading and analysing a sample application. Testing on an emulator.	W_01 U_01 K_01
4	Modifying/developing a sample application. Compiling the distribution version. Installing and running a sample application on a mobile device.	W_01 U_01 K_01
5	Test 1. Designing an application individually.	W_01 W_02 U_01 U_02 K_01
6	Calculator application upgrade with the elements of a graphical user interface.	W_01 W_02 U_01 U_02 K_01
7	Calculator application development with the elements of a graphical user interface, cont. Compiling the distribution version. Installing and running a sample application on a mobile device.	W_01 W_02 U_01 U_02 K_01
8	Using application preferences. Designing an application using preferences.	W_01 W_02 U_01 U_02 K_01
9	Realising individualised design tasks with the elements of application self-design, part 1.	W_01 W_02 U_01

		U_02 K_01
10	Realising individualised design tasks with the elements of application self-design, part 2.	W_01 W_02 U_01 U_02 K_01
11	Realising individualised design tasks with the elements of application self-design, part 3.	W_01 W_02 U_01 U_02 K_01
12	Test 2 and obtaining a credit for laboratory exercises.	

4. The characteristics of project assignments

The methods of assessing teaching results

Effect symbol	Methods of assessing teaching results <i>(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)</i>
W_01	A computer-based practical examination; a written test.
W_02	A computer-based practical examination; a test and a student's own project at a computer stand.
U_01	Tests and assessing a student's initiative during laboratory classes.
U_02	Tests and assessing a student's initiative during laboratory classes.
K_01	Comments during the lectures and solving problems at computer stands during laboratory classes.

D. STUDENT'S INPUT

ECTS credit points		
	Type of student's activity	Student's workload
1	Participation in lectures	15
2	Participation in classes	
3	Participation in laboratories	24
4	Participation in tutorials (2-3 times per semester)	
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	2
8		
9	Number of hours requiring a lecturer's assistance	39 <i>(sum)</i>
10	Number of ECTS credit points which are allocated for assisted work <i>(1 ECTS point=25-30 hours)</i>	1.6
11	Unassisted study of lecture subjects	10
12	Unassisted preparation for classes	
13	Unassisted preparation for tests	10
14	Unassisted preparation for laboratories	10
15	Preparing reports	
15	Preparing for a final laboratory test	5
17	Preparing a project or documentation	5
18	Preparing for an examination	10
19		
20	Number of hours of a student's unassisted work	61 <i>(sum)</i>
21	Number of ECTS credit points which a student receives for unassisted work <i>(1 ECTS point=25-30 hours)</i>	2.4
22	Total number of hours of a student's work	100
23	ECTS points per module <i>1 ECTS point=25-30 hours</i>	4
24	Work input connected with practical classes <i>Total number of hours connected with practical classes</i>	54
25	Number of ECTS credit points which a student receives for practical classes <i>(1 ECTS point=25-30 hours)</i>	2.2

E. LITERATURE

Literature list	<ol style="list-style-type: none"> 1. Conder S., Darcey L., <i>Android : programowanie aplikacji na urządzenia przenośne</i>, Wydawnictwo Helion, Gliwice 2011. 2. Friesen J., <i>Java. Przygotowanie do programowania na platformę Android</i>, Wydawnictwo Helion, Gliwice 2011. 3. Komatineni S., MacLean D., Hashimi S., <i>Android 3 - Tworzenie aplikacji</i>, Wydawnictwo Helion, Gliwice 2012.
Module website	http://www.tu.kielce.pl/~wzimk_mat