MODULE DESCRIPTION

Module code	full-time studies:	**Z-ZIP1-E-311b**
	part-time studies:	**Z-ZIPN1-E-311b**
Module name	**Computer Science – Android Programming**	
Module name in Polish	**Informatyka – programowanie Android**	
Valid from academic year	**2019/2020**	

MODULE PLACEMENT IN THE SYLLABUS

Field of study	**MANAGEMENT AND PRODUCTION ENGINEERING**
Level of education	**1st degree**
Studies profile	**General**
Form and method of conducting classes	**Full-time and Part-time**
Specialisation	**All**
Unit conducting the module	**Department of Computer Science Technologies**
Module co-ordinator	**Damian Krzesimowski, PhD**
Approved by:	**Dariusz Bojczuk, PhD, DSc**

MODULE OVERVIEW

Type of subject / group of subjects	**Major**
Module status	**Non-compulsory**
Language of conducting classes	**English**
Module placement in the syllabus - semester	**Semester III**
Initial requirements	**Information Technologies** **Fundamentals of Computer Science**
Examination (YES/NO)	**YES**
Number of ECTS credit points	**4**

Method of conducting classes		**Lecture**	**Classes**	**Laboratory**	**Project**	**Other**
Per semester	full-time studies:	**15**		**30**		
	part-time studies:	**9**		**18**		

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Category	Symbol	Learning outcomes	Assignations to the directional learning outcomes
Knowledge	W01	He knows and understands the basic concepts of computer science, knows the architecture, operation and limitations of mobile devices with an operating system.	ZIP1_W04
	W02	He knows and understands the specifics of programming mobile devices.	ZIP1_W04
	W03	He knows and understands the possibilities of using databases in mobile applications.	ZIP1_W04
Skills	U01	Can design an application for mobile terminals taking into account their limitations.	ZIP1_U01
	U02	Can design an application for mobile devices that uses local resources or databases.	ZIP1_U01
Social competences	K01	He understands the need and knows the possibilities of continuous improvement.	ZIP1_K01
	K02	He is ready to communicate in a team also in terms of going beyond technical issues.	ZIP1_K01

TEACHING CONTENTS

Method of conducting classes	Teaching contents
Lecture	Discussion of operating systems for mobile devices. Architecture of the Android operating system. Basics of JAVA, XML and DALVIK runtime environments (up to version 4.4.4) and ART. Application life cycle. Architecture of a typical application. Testing the application on an emulator and a physical device. Support for local resources, access to the file system and external media. Graphics and media files support on Android. The functioning of databases in the environment of operating systems for mobile terminals. Cooperation of the Android application with the SQLite relational database.
Laboratory	Practical familiarization with the basic principles of simple creation user interface and training of the ability to use basic controls available on the Android platform. The scope of the exercise includes defining the main activity of the application, use the Activity class, and the underlying controls that inherit from the View class. Using the LinearLayout and placing in it controls that inherit from the View class. Using the RelativeLayout - graphic layout and developing skills use of this layout to create a user interface. Defining a RelativeLayout layout and placing inheriting controls there after the View class. Practical familiarization with the principles of creating a menu and developing the ability to use the menu in applications. The scope of the exercise includes defining the basic types of menus (standard, submenu, extended) and the use of predefined intentions (system). Shared Preferences - private data storage in key-value pairs. Internal Storage - private data storage in the device memory. External Storage - public data storage in external shared devices. SQLite Databases - private storage of structured data. Using network access. Types of network protocols available.

METODS OF ASSESSING TEACHING RESULTS

Symbol	Methods of checking the learning outcomes *(select X)*					
	Oral exam	**Written exam**	**Test**	**Project**	**Statement**	**Other**
W01						X
W02						X
W03						X
U01		X		X		X
U02		X		X		X
K01				X		X
K02						X

FORM AND CONDITIONS OF PASSING

Form of classes	Form of credit	Passing conditions
Lecture	Exam	Obtaining at least 50% of the points on the final test.
Laboratory	Credit with grade	Obtaining at least 50% of the points on the final project.

STUDENT WORKLOAD

Balance of ECTS points													
No.	Type of student's activity	Student's workload										Unit
		full-time					part-time					
1.	Participation in the activities	Lc	C	Lb	P	O	Lc	C	Lb	P	O	h
		15		30			9		18			
2.	Other (consultation, exam)	4		2			4		2			h
3.	**Number of hours of a student's assisted work**	**51**					**33**					h
4.	**Number of ECTS credit points which are allocated for assisted work**	**2,0**					**1,3**					ECTS
5.	**Number of hours of a student's unassisted work**	**49**					**67**					h
6.	**Number of ECTS credit points which a student receives for unassisted work**	**2,0**					**2,7**					ECTS
7.	**Work input connected with practical classes**	**67**					**67**					h
8.	**Number of ECTS credit points which a student receives for practical classes**	**2,7**					**2,7**					ECTS
9.	**Total number of hours of a student's work**	**100**					**100**					h
10.	**Punkty ECTS za moduł** *1 ECTS=25 hours*	**4**										ECTS

LITERATURE

1. Burnette E. (2011), *Hello, Android*, Helion, ISBN 978-83-246-3140-7.
2. Reto M. (2012), *Professional Android 4 Application Development*, John Wiley & Sons, Inc. ISBN 978-1-118-10227-5.
3. Wei-Meng L. (2012), *Beginning Android 4 Application Development*, John Wiley & Sons, Inc., ISBN 978-1-118-19954-1.