

(faculty stamp)

**COURSE DESCRIPTION**

Z1-PU7

WYDANIE N1

Strona 1 z 2

<b>1. Course title:</b> PROGRAMMING OF MOBILE DEVICES		<b>2. Course code</b> PoMD		
<b>3. Validity of course description:</b> 2017/2018				
<b>4. Level of studies:</b> 1 <sup>st</sup> cycle of higher education				
<b>5. Mode of studies:</b> intramural studies				
<b>6. Field of study:</b> Macrofaculty		RAU		
<b>7. Profile of studies:</b>				
<b>8. Programme:</b>				
<b>9. Semester:</b> 7				
<b>10. Faculty teaching the course:</b> Faculty of Automatic Control, Electronics and Computer Science				
<b>11. Course instructor:</b> dr inż. Piotr Fabian				
<b>12. Course classification:</b> common courses				
<b>13. Course status:</b> optional course				
<b>14. Language of instruction:</b> English				
<b>15. Pre-requisite qualifications:</b> It is assumed, that the student has elementary skills in computer programming.				
<b>16. Course objectives:</b> The aim of the course is to provide techniques for developing applications for mobile devices with restricted computing power and memory. The main focus is on design and optimization of applications and user interfaces for devices like smartphones, tablet PCs, phablets. Within the course, students will acquire the ability to create applications for Android, Windows Phone, iOS.				
<b>17. Description of learning outcomes:</b>				
Nr	<i>Learning outcomes description</i>	<i>Method of assessment</i>	<i>Teaching methods</i>	<i>Learning outcomes reference code</i>
1	Knows the most commonly used in mobile devices operating systems	Written test	Lecture	K1A_W3
2	Can design a mobile application taking into account hardware limitations	Computer program	Laboratory	K1A_U10
3	Can design user interfaces of mobile applications	Computer program	Laboratory	K1A_U3
4	Can use software libraries for own mobile applications	Computer program	Laboratory	K1A_U1, K1A_U3
5	Is able to cooperate in a group, taking different roles in the design and development process	Computer program	Laboratory	K1A_U2, K1A_K3
<b>18. Teaching modes and hours</b>				
<b>Lecture / BA /MA Seminar / Class / Project / Laboratory</b>				
Sem. 7 - Lecture 15 hours, Laboratory 30 hours				
<b>19. Syllabus description:</b>				
<b>Lecture:</b>				
Introduction. Architecture of mobile devices. Differences between applications for desktop computers and mobile devices. Mobile devices based on Linux. The Android operating system. Android Studio. Event handling. Localization of programs, applets. Multithreaded applications. The Windows Phone operating system. The Universal Windows Platform. The Xamarin platform. Other mobile operating systems. Security of systems and applications.				

**Laboratory:**  
Small programming exercises and one individual programming assignment.

**20. Examination:** —

**21. Primary sources:**

1. Web Android tutorials: <https://developer.android.com/training/index.html>
2. Xamarin tutorials for developers: <https://developer.xamarin.com/>
3. Shane Conder, Lauren Darcey: Android. Programowanie aplikacji na urządzenia przenośne. Helion 2011
4. Eugene Chuvyrov, Henry LeeL. Windows Phone 7. Tworzenie efektywnych aplikacji, Helion 2011
5. Paweł Niedziński, Bartosz Polender: iPhone - programowanie dla początkujących, 2012

**22. Secondary sources:**

1. Andy Wigley, Daniel Moth, Peter Foot: Mobile Development Handbook
2. Andy Wigley, Stephen Wheelwright: .NET Compact Framework
3. Ivo Salmre: Writing Mobile Code
4. Paul Yao, David Durant: .NET Compact Framework Programming with C#

**23. Total workload required to achieve learning outcomes**

Lp.	Teaching mode :	Contact hours / Student workload hours
1	Lecture	15 / 15
2	Classes	- / -
3	Laboratory	30 / 15
4	Project	/
5	BA/ MA Seminar	/
6	Other	- / -
	Total number of hours	45 / 30

**24. Total hours:** 75

**25. Number of ECTS credits:** 3

**26. Number of ECTS credits allocated for contact hours:** 1

**27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects):** 2

**26. Comments:** —

Approved:

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(date, Instructor's signature)

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(date, the Director of the Faculty Unit signature)