

1.3. Module/ course form

To be completed by Course Team	Module name : PROGRAMMING					Module code:M7	
	Course name: Mobile devices programming					Course code:	
	Faculty: Institute of Applied Informatics						
	Field of study: Informatics						
	Mode of study : Full-time		Learning profile: PRACTICAL			Speciality:	
	Year/ semester: 3/6		Module/ course status: mandatory			Module/ course language: Polish/English	
	Type of classes	lecture	lessons	lab	project	tutorial	other (please specify)
	Course load	15		15	15		

Module/ course coordinator	Jacek Paluszak, PhD Eng.
Lecturer	Jacek Paluszak, PhD Eng.
Module/ course objectives	After completing the course the student should understand the architecture of internet applications based on the application server; know popular servers, be able to start and configure them for the needs of their own applications; create your own web applications using accepted patterns and using selected frameworks
Entry requirements	Ability to read and write programs in Java; use of library classes, use of tables and collections, error handling; understanding of the basic ideas of object-oriented programming: inheritance and polymorphism.

LEARNING OUTCOME		
Nr	LEARNING OUTCOME DESCRIPTION	Learning outcome reference
1	He knows the specifics of creating applications for the Android platform	K_W11, K_W15
2	Lists the elements that make up the mobile application	K_W06, K_W11
3	Understands what is called activity of the mobile application and knows its life cycle	K_W11
4	Creates simple mobile applications containing several related screens	K_U01; K_U12 K_U16; K_U19
5	Designs applications taking into account the different sizes and capabilities of the devices on which the application will run	K_U01; K_U07 K_U12; K_U16; K_U19

6	He can use the multimedia capabilities of the device and integrate them in the applications he creates	K_U01; K_U12 K_U13; K_U16; K_U19
7	Is able to use data from the network and local data in his applications	K_U01; K_U12 K_U16; K_U19
8	In a group, he works on a project task	K_U02
9	He works independently, looking for solutions to encountered problems in documentation and on Internet forums	K_K01

CURRICULUM CONTENTS	
Lecture	
1. Introduction to creating Android applications: work environment, project structure, manifest file, views, activities (2h)	
2. Defining views (screens): layouts, controls, ensuring portability of the interface (4h)	
3. Creating network connections and background tasks (2h)	
4. Local data saving (3h)	
5. Using multimedia and location information (4h)	
Tutorial	
1. Tasks related to creating views using layouts such as LinearLayout and RelativeLaout (2h)	
2. Performing several exercises on Grid and Frame layouts. Task with nested layouts (2h)	
3. Students make simple applications using activity and intention. Modifications: passing parameters between activities, recording the activity status, etc. (2h)	
4. Tasks using ListView. Students try to create their own adapter for the list. (1h)	
5. Tasks with a ListView list storing pictures and checkboxes. (2h)	
6. Making several drawings using Canvas. (3h)	
7. Tasks using the SQLite database (2h)	
8. The task combining the previously learned techniques (e.g. mini gmail) (1h)	
Project	
Working individually or in teams of two, students will design and implement a application using independently defined data sources. The application functionality is approved by the lecturer and is wider in the case of a team task.	
Students will build an application and implementing the assumed functionality.	

Basic literature	https://developer.android.com/
Additional literature	

Teaching methods	Lecture with a multimedia presentation discussing problem issues. Research laboratories with discussion of obtained results. Laboratory classes related to learning practical IT phenomena using the project method and server programming.
Assessment method	Learning outcome number

Task at the beginning of the class	04,05,06,07
Project	04,05,06,07,08,09
Form and terms of an exam	Lecture: colloquium on theoretical knowledge (10%), laboratory: assessment based on homework assignments (10%), project: public presentation of the project and its defense (questions from the teacher and the group regarding the solutions used) (80%)

STUDENT WORKLOAD		
	Number of hours	
	In all	including practical
Participation in lectures	15	
Independent study of lecture topics	5	
Participation in tutorials, labs, projects and seminars	30	30
Independent preparation for tutorials*	10	10
Preparation of projects/essays/etc.*	35	35
Preparation/ independent study for exams	5	
Participation during consultation hours	2	2
Other		
TOTAL student workload in hours	102	77
Number of ECTS credit per course unit	4 ECTS	
Number of ECTS points assigned to the scientific discipline	Technical informatics and telecommunications 4 ECTS	
Number of ECTS credit associated with practical classes	3 ECTS	
Number of ECTS for classes that require direct participation of professors	1,8 ECTS	