

FACULTY of Computer Science and Management / DEPARTMENT

**SUBJECT CARD****Name in Polish** Multimedialne Systemy Wbudowane**Name in English** Multimed Embedded Systems**Main field of study (if applicable):** Computer Science**Specialization (if applicable):** .....**Level and form of studies:** 1st/ ~~2nd~~\* level, full-time / ~~part-time~~\***Kind of subject:** obligatory / optional / university-wide\***Subject code** INZ0265W1**Group of courses** YES / ~~NO~~\*

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30		30		
Number of hours of total student workload (CNPS)	90		60		
Form of crediting	<del>Examination</del> /crediting with grade*	Examination /crediting with grade*	<del>Examination</del> /crediting with grade*	Examination /crediting with grade*	Examination /crediting with grade*
For group of courses mark (X) final course	X				
Number of ECTS points	3		2		
including number of ECTS points for practical (P) classes			2		
including number of ECTS points for direct teacher-student contact (BK) classes	1,8		1,2		

\*delete as applicable

**PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES**

1. Web-based systems programming.
2. Knowledge in computer science basics.

**SUBJECT OBJECTIVES**

C1 Acquisition of the basic knowledge in Digital Multimedia

C2 Acquisition of the basic knowledge in Embedded Systems Design

C3 Skill in Multimedia Embedded Systems Implementation and Evaluation

**SUBJECT EDUCATIONAL EFFECTS**

relating to knowledge:

PEK\_W01 student has a basic knowledge in the field of Multimedia Embedded Systems applications and design

PEK\_W02 student has a basic knowledge in the field of Multimedia Embedded Systems implementation and usability verification

relating to skills:

PEK\_U01 student is able to design a simple multimedia embedded system

PEK\_U02 student is able to implement and verify a simple multimedia embedded system

relating to social competences:

PEK\_K01 student is able to use the course literature and find relevant information using other sources

PEK\_K02 student is able to cooperate with other students within a project team

## PROGRAMME CONTENT

Form of classes – lecture		Number of hours
Lec 1	Introduction to the multimedia systems.	2
Lec 2	Multimedia embedded systems applications.	2
Lec 3	Platforms of multimedia embedded systems.	2
Lec 4	Computer graphics.	2
Lec 5	Video, animation and sound.	2
Lec 6	Text and hypertext.	2
Lec 7	Visual design and interactivity.	2
Lec 8	XML and scripting.	2
Lec 9	Multimedia embedded systems design.	2
Lec10	Developing iOS and Android applications	2
Lec11	HTML 5.	2
Lec12	jQuery mobile.	2
Lec13	Designing of mobile applications – practice and new trends.	2
Lec14	Usability tests.	2
Lec15	Multimedia embedded systems perspectives.	2
	Total hours	30
Form of classes – class		Number of hours
Cl 1		
Cl 2		
Cl 3		
Cl 4		
..		
	Total hours	
Form of classes – laboratory		Number of hours
Lab 1	Mobile application usability examination.	2
Lab 2	Mobile application usability examination.	2
Lab 3	Embedded system mock-up preparation	2
Lab 4	Embedded system mock-up preparation	2
Lab 5	Embedded system prototype implementation with final version of texts	2

Lab 6	Embedded system prototype implementation with final version of images	2
Lab 7	Comparison of interaction of the design application with other similar commercial applications	2
Lab 8	Embedded system implementation of the basic application elements	2
Lab 9	Embedded system implementation of the basic application elements	2
Lab10	Embedded system implementation of the interactive application elements	2
Lab11	Embedded system implementation of the interactive application elements	2
Lab12	Embedded system implementation of the advanced application elements	2
Lab13	Embedded system implementation of the advanced application elements	2
Lab14	Embedded system implementation verification	2
Lab15	Embedded system implementation improvement	2
	Total hours	30

Form of classes – project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	

Form of classes – seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	

TEACHING TOOLS USED	
N1. Lecture with presentations N2. Consultations N3. Literature studies N4. Laboratories at the computer laboratory N5. Students self work and laboratory preparation N6. Reports preparation N7. Tests with eLearning tool	

#### EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at	Educational effect numer	Way of evaluating educational effect achievement

semester end)		
F- laboratory	PEK_U01, PEK_U02, PEK_K01, PEK_K02	Laboratories completion and reports preparation.
P- lecture	PEK_W01, PEK_W02 PEK_K01,	Final test
C		
<b>PRIMARY AND SECONDARY LITERATURE</b>		
<b><u>PRIMARY LITERATURE:</u></b>		
[1] Chapman N., Chapman J., <i>Digital media. Third edition.</i> Ontario: John Wiley & Sons Ltd., 2009. [2] Mark Pearrow, <i>Web Site Usability. Handbook.</i> Charles River Media 2004. [3] Maximiliano Firtman, <i>jQuery Mobile: Up and Running.</i> O'Reilly Media 2012. <a href="http://proquestcombo.safaribooksonline.com/book/-/9781449331085">http://proquestcombo.safaribooksonline.com/book/-/9781449331085</a> [4] C Bala Kumar , Paul Kline , Tim Thompson, <i>Bluetooth Application Programming with the Java APIs.</i> The Morgan Kaufmann Publ. 2004. [5] Mohammad Ilyas, Imad Mahgoub, (ed.), <i>Mobile computing handbook.</i> Boca Raton: Auerbach Publications, cop. 2005. [6] Martin J. Wells, <i>J2ME Game Programming (Game Development).</i> Premier Press 2004. [7] Peter Marwedel, <i>Embedded System Design: Embedded Systems Foundations of Cyber-Physical.</i> Springer 2011 <a href="http://www.springer.com/engineering/circuits+%26+systems/book/978-94-007-0256-1">http://www.springer.com/engineering/circuits+%26+systems/book/978-94-007-0256-1</a>		
<b><u>SECONDARY LITERATURE:</u></b>		
[1] Jon Reid, <i>jQuery Mobile.</i> O'Reilly Media 2011. [2] J.D. Gibson (ed.), <i>Multimedia Communications. Directions &amp; Innovations.</i> San Diego: AP 2001.		
<b>SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)</b>		
Janusz Sobecki, <a href="mailto:janusz.sobecki@pwr.wroc.pl">janusz.sobecki@pwr.wroc.pl</a>		

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR  
SUBJECT

AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY

AND SPECIALIZATION

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
<b>PEK_W01 (knowledge)</b>	K1INF_W09	C1,C2	Lec1-Lec8,Lec15	N1-N3, N7
<b>PEK_W02</b>	K1INF_W09	C1,C3	Lec9-Lec14	N1-N3, N7
<b>PEK_U01 (skills)</b>	K1INF_U06, K1INF_U14	C1,C2	Lab3-Lab7	N2-N6
<b>PEK_U02</b>	K1INF_U04, K1INF_U06, K1INF_U14	C1,C3	Lab1, Lab8-Lab15	N2-N6
<b>PEK_K01 (competences)</b>		C1,C2	Lab1-Lab15	N2, N7
<b>PEK_K02</b>		C3	Lab2-Lab15	N2-N6

\*\* - enter symbols for main-field-of-study/specialization educational effects

\*\*\* - from table above