

### DESCRIPTION OF A STUDY COURSE – SYLLABUS

<b>Title of a course</b>	<b>Multimedia Systems</b>				
<b>Head of course</b>	<b>PhD Ida Panev, Lecturer</b>				
<b>Study programme</b>	<b>Professional undergraduate study Telematics</b>				
<b>Status of a course</b>	Elective				
<b>Year of study</b>	2.	<b>Semester</b>	IV	<b>ECTS credits</b>	5
<b>Teaching plan (L + E + S+ Pr)</b>	L+E				
<b>Goals of a course</b>					
Learn how to interpret features of multimedia system elements. Be able to define the terms of a multimedia system and interpret the basic principles of development and evaluation of multimedia systems. Be able to create simple examples of multimedia products and classify and define the content of multimedia systems.					
<b>Conditions for enrolling course</b>					
No conditions					
<b>Learning outcomes on a level of a study programme which includes course</b>					
Outcome 4: Use computer principles and methods related to the architecture and organization of computers and computer networks. Outcome 5: Use computer principles and methods related to programming languages, databases, and operating systems. Outcome 6: Design and implement desktop, web and mobile computer applications and computer programs for microcomputers and microcontrollers, with or without a database.					
<b>Expected learning outcomes on a level of a course</b>					
<ol style="list-style-type: none"> <li>1. Interpret features of multimedia system elements.</li> <li>2. Define the concepts of a multimedia system.</li> <li>3. Interpret the basic principles of the development and evaluation of multimedia systems.</li> <li>4. Create simple multimedia product examples.</li> <li>5. Classify and define the content of multimedia systems.</li> </ol>					
<b>Content of a course</b>					
Processing of signals for media integration. Interface for the multimedia interaction between a man and a machine. Multimedia communication and networking. Multimedia security and content protection. Multimedia data bases. Multimedia computer systems and tools. Hardware and software support for multimedia systems. Multimedia systems standards. Multimedia application. Multimedia services quality.					
<b>Teaching modes</b>	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
<b>Comments</b>	<p>Students who wish to be graded through <b>continuous assessment at</b> the lectures in the agreed terms do / deliver:</p> <ul style="list-style-type: none"> <li>- Class activity</li> <li>- A theoretical colloquium</li> <li>- Task 3 (creation and defense of a multimedia presentation on a given topic)</li> </ul> <p>Students who wish to be graded through continuous assessment at the agreed dates do / submit:</p> <ul style="list-style-type: none"> <li>- Task 1 (creation of animation in raster graphics)</li> <li>- Task 2 (creating infographics using vector graphics)</li> </ul> <p>-----</p> <p>Students who wish to attend the <b>full examination period</b> are obliged to submit, before the examination term, the following:</p>				

	<ul style="list-style-type: none"> <li>- Task 3 (creation of multimedia presentation on a given topic)</li> </ul> <p>Students who wish to attend the full examination period are obliged to submit, before the examination term, the following:</p> <ul style="list-style-type: none"> <li>- Task 1 (creation of animation in raster graphics)</li> <li>- Task 2 (creating infographics using vector graphics)</li> </ul>
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### Students' obligations

Students who have decided to take the results of the **comprehensive exam** are required to prepare three practical lessons before taking the exam, with the following outcome of the course: Develop simple examples of multimedia products.

Practical tasks	Max	Threshold	ECTS
Assignment 1: Creating animation in raster graphics	15%	7,5%	0,5
Assignment 2: Designing infographics using vector graphics	20%	10%	1
Assignment 3: Create a multimedia presentation on a given topic	17%	8,5%	1
<b>Total</b>	<b>52%</b>	<b>26%</b>	<b>2,5</b>

### Grading, evaluation and monitoring of students' work continuously during lectures and exams

Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.

#### Continuous check-up:

Outcomes	Written paper	Class activity	Practical assignment	Practical assignment	Practical assignment	Threshold	Max
Outcome 1	12%					6%	12%
Outcome 2	10%					5%	10%
Outcome 3	5%	5%				5%	10%
Outcome 4			15%	20%	25%	30%	60%
Outcome 5	8%					4%	8%
<b>Percentage of ECTS</b>	<b>1,75</b>	<b>0,25</b>	<b>0,5</b>	<b>1</b>	<b>1,5</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>35%</b>	<b>5%</b>	<b>15%</b>	<b>20%</b>	<b>25%</b>	<b>50 %</b>	<b>100 %</b>

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

#### Exam term:

Outcomes	Written exam	Oral defense of project assignment 3	Max
Outcome 1	12%		12%
Outcome 2	10%		10%
Outcome 3	10%		10%
Outcome 4		8%	60%
	Student commitments made for this outcome during the class: 52% (2,5 ECTS)		
Outcome 5	8%		8%
Percentage of ECTS	2	0,5	
Total	40%	8%	100 % *

\*The sum of the students' commitments taken during the class and the success achieved in the written exam and oral defense is 100%.

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

**Grading:**

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

Range of credits (percentages)	Numerical grade	ECTS grade
90,00 – 100,00	Excellent (5)	A
75,00 – 89,99	Very good (4)	B
60,00 – 74,99	Good (3)	C
50,00 – 59,99	Sufficient (2)	D
0,00 – 49,99	Insufficient (1)	F

**Obligatory literature**

1. Materials used in lectures and exercises from the course Multimedia Systems; available on Moodle.

**Additional literature**

1. Chapman, N. & Chapman, J. Digital Multimedia, 3rd edition. John Wiley & Sons, Ltd, 2009.
2. Le, Z. & Drew, M. Fundamentals of Multimedia, Pearson Prentice Hall, 2004.
3. Vaughan, T: Multimedia: Making It Work, Osborne McGraw-Hil, 2008.

