

SYLLABUS¹

1. Information about the Program

1.1 Higher education institution	Politehnica University of Timisoara
1.2 Faculty ² / Department ³	Automation and Computing / Computer and Software Engineering
1.3 Chair	-
1.4 Domain of study	Computers and Information Technology
1.5 Study level	Bachelor of science
1.6 Study program / Qualification	Computers / engineer

2. Information about the Course

2.1 Course	Multimedia Systems						
2.2 Lecturer	Prof. Dr. habil. eng. Mihai V. Micea						
2.3 Academic staff for seminars/labs	Lecturer Dr. eng. Răzvan Cioargă						
2.4 Study year	4	2.5 Semester	8	2.6 Assessment type	E	2.7 Course type	Elective

3. Total time estimated (hours/ semester of didactical activities)

3.1 Hours / week	3	of which: 3.2 lecture hours	2	3.3 seminar/lab hours	1
3.4 Total curriculum hours	94	of which: 3.2 lecture hours	28	3.3 seminar/lab hours	14
Time distribution					hours
Study using manuals, support materials, bibliography and notes					22
Supplementary documentation in library, specialty electronic platforms and on site					15
Supplementary preparation for seminars/labs, homework, reviews, portfolios and essays					15
Tutoring activities					7
Exams					3
Other					
3.7 Total - hours of individual study	52				
3.8 Total - hours per semester	104				
3.9 Credits	4				

4. Prerequisites (if appropriate)

4.1 curriculum related	• Not the case
4.2 competence related	• Competences and knowledge of digital signal processing

5. Conditions (if appropriate)

5.1 for lectures	• Medium/large sized room • Support equipment: laptop, audio boxes, video-projector, board
5.2 for seminars/labs	• Laboratory with 10-20 workstations • Multimedia acquisition and processing equipments: sound cards (10-20 pcs), photo cameras (1-2 pcs), video cameras (1-2 pcs), video capture cards (1-2 pcs), audio boxes (10-20 pcs), microphones (5-10 pcs) • Licenses of specialized software for document, presentation and multimedia production (10-20 sets): Microsoft Office, Adobe Acrobat Pro, Adobe Creative Suite • Audio-video presentation system: audio boxes, video-projector, projection screen

¹ Formularul corespunde Fișei Disciplinei promovată prin OMECTS 5703/18.12.2011 (Anexa3);

² Se înscrie numele facultății care gestionează programul de studiu căruia îi aparține disciplina;

³ Se înscrie numele departamentului căruia i-a fost încredințată susținerea disciplinei și de care aparține titularul cursului;

6. Specific competencies acquired

Professional competencies ⁴	• Operating with the scientific, engineering and IT fundamentals • Designing hardware, software and communication components • Problem solving by using computer science and engineering tools • Improving the performance of hardware, software and communication systems • Designing, managing the life cycle, integrating and managing the integrity of hardware, software and communication systems • Designing intelligent systems
Transversal competencies	• Behaving honorably, responsibly and ethical, according to the law, to ensure problem solving • Identifying, describing and executing the processes of project management, by fulfilling various roles within the team, and describing the results in the field of activity, in a clear and concise manner, verbal and in writing, using the Romanian language and an international language • Proving action and initiative spirit to get current with the knowledge at professional, economic and management levels

7. Objectives of the course (issued from the list of the competencies acquired)

7.1 General goal	• Providing the necessary knowledge to cover and understand the basic principles of multimedia productions
7.2 Specific objectives	• Learning the main media used for transmitting information (text, sound, graphics and images, animation and video sequences) • Learning the necessary elements of interactivity and design for professional multimedia presentations • Developing abilities of using specialized workstations and applications to develop multimedia productions

8. Content

8.1 Lecture	Hours	Lecturing methods
1. Introduction 1.1 What is multimedia 1.2 Media Classification 1.3 History of Multimedia	2	Lectures supported by multimedia, PowerPoint presentations and video-projections, discussions, explanations and examples
2. Text medium 2.1 Introduction 2.2 Typefaces and fonts 2.3 Typeface characteristics 2.4 Using text in multimedia	2	
3. Sound and audio 3.1 Elements of acoustics 3.2 Multimedia audio systems 3.3 Digital audio recording and editing	4	
4. Images and video 4.1 Digital images 4.2 Graphics 4.3 Animation 4.4 Generating and using video sequences	4	
5. Interactivity 5.1 Principles of interactivity 5.2 Enhanced man-machine interfaces 5.3 Integrating interactivity in multimedia productions	2	
6. Design basics 6.1 Introduction 6.2 Principles of design 6.3 Proximity, alignment, rhythm (repetition), contrast, symmetry 6.4 Elements of design 6.5 White Space 6.6 Color	4	
7. Multimedia information processing 7.1 Audio compressing techniques and digital audio formats 7.2 Image compression and image formats 7.3 Animation processing and storing 7.4 Digital video compression techniques and formats	4	

⁴ Aspectul competențelor profesionale va fi tratat cf. Metodologiei OMECTS 5703/18.12.2011. Se vor prelua competențele care sunt precizate în Registrul Național al Calificărilor din Învățământul Superior RNCIS (http://www.rncis.ro/portal/page?_pageid=117,70218&_dad=portal&_schema=PORTAL) pentru domeniul de studiu de la pct. 1.4 și programul de studii de la pct. 1.6 din această fișă.

8. Multimedia systems and applications 8.1 Specialized multimedia production equipments 8.2 Multimedia operating systems 8.3 Applications for multimedia production 8.4 Presentation systems	2	
9. Intellectual property 9.1 Intellectual property (IP). Types of IP 9.2 Copyright 9.3 IP Infringement. Plagiarism 9.4 Ethics and Deontology	4	
Bibliography • M. V. Micea, "Multimedia Systems: Course Support", 2nd Edition, Sep. 2010. Online: http://dsplabs.cs.upt.ro/~micha/courses/SM/support/index.html. • T. Vaughan, "Multimedia: Making it Work", 6th Edition, McGraw-Hill Osborne Media, 2003. • R. Williams, "The Non-Designer's Design Book", 2nd Edition, Peachpit Press, 2004. • R. Steinmetz, K. Nahrstedt, "Multimedia: Computing, Communications and Applications", Prentice-Hall, 1995.		
8.2 Seminar/lab	Hours	Instruction methods
1. Text, hypertext: development of a presentation booklet for a product of choice; studying and establishing an appropriate style: typeface, size, color; choosing the necessary text for the presentation booklet	2	Presentation of the workshop, discussions, questions and answers, implementation of the specifications, testing and debugging
2. Sound and audio: selecting or recording the necessary sound sequences for the presentation of a product	1	
3. Processing the audio sequences to meet certain specifications regarding size, quality, etc.	1	
4. Images: selecting or acquiring the necessary images for the presentation of a product	1	
5. Processing the images to meet certain specifications regarding size, quality, etc.	1	
6. Video: selecting or acquiring the necessary video sequences for the presentation of a product	1	
7. Processing the video files, composing and arranging the video sequence, audio track integration and synchronization	2	
8. Creating a multimedia application, able to integrate the selected media components, for the presentation of a product; required media: images, audio, video and descriptive text	3	
9. Finalizing and storing the resulting multimedia product. Presentation of the multimedia product	2	
Bibliography • M. V. Micea, "Multimedia Systems: Course Support", 2nd Edition, Sep. 2010. Online: http://dsplabs.cs.upt.ro/~micha/courses/SM/support/index.html. • T. Vaughan, "Multimedia: Making it Work", 6th Edition, McGraw-Hill Osborne Media, 2003. • R. Williams, "The Non-Designer's Design Book", 2nd Edition, Peachpit Press, 2004. • R. Steinmetz, K. Nahrstedt, "Multimedia: Computing, Communications and Applications", Prentice-Hall, 1995.		

9. Correlation between the course content and the requirements of the specialists in the field and the expectations of the main employers

• This course provides fundamental knowledge and skills, required in a large area of domains, involving creating and presenting information by using various media. An important segment of activities targeted by this course includes the design and creation of professional websites.

10. Assessment

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in final mark
10.4 Lecture	Solving of a module with questions and problems derived from the examples discussed during the lectures and lab workshops	Written examination; length: 3 hours	50%
10.5 Seminar /labs	Carrying out the lab workshops, according to the specifications	Presentations of the results, questions and answers	45%
	Attendance	Attendees list	5%
10.6 Minimal performance standards (minimal specific knowledge required for passing the exam, the means to assess mastering the specific knowledge)			
• Knowing the main media for communicating information; Knowing the basic ways to use these media for multimedia presentations; Basic structure of technical and scientific documentations; Principles of design; Basic elements of a multimedia presentation – written examination;			

- Basic skills of designing, implementing, integrating, testing and debugging multimedia presentations using specialized workstations and software – practical presentation, questions and answers.

11. International compatibility

- Illinois Institute of Technology, SUA, Information Technology, Undergraduate Program: "Fundamentals of Multimedia" (ITM 460)
- London Metropolitan University, UK, BSc Multimedia Program: "Multimedia concepts" (MM1001), "Introduction to multimedia coding" (MM1002), "Interactive multimedia authoring 1" (MM2005)
- Indiana University - Purdue University - Indianapolis, SUA, Department of Computer and Information Science, Undergraduate Program: "Introduction to Multimedia Programming" (N351, V. Kilmer)

Date

Signature of the course instructor

Signature of the academic staff for
seminars/labs

Prof. Dr. habil. eng. Mihai V. MICEA

Lecturer Dr. eng. Răzvan CIOARGĂ

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Date of approval in the Department

Signature of the Department Director

Prof. Dr. eng. Vladimir CREȚU

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