BASIC INFORMATION:

	The code	The content
Organizational unit	01.07.300	Faculty of Information Technologies
Abbreviation	01.07.300	FIT
Chair		The Department of Computer Graphics and Design (KatDiz)
Course/module	1.02.02.01.008	Multimedia Content

TYPE OF COURSE:

Functional area	CORE
Level of abstraction	MIDDLE
Course type - obligation	MANDATORY

COURSE REGISTRATION:

	The code	The content
Scientific field	1.00.00	Natural Sciences
Scientific area	1.02.00	Computer and Information Sciences
Narrow scientific field	1.02.02	Information Sciences and Bioinformatics
Subdistrict	1.02.02.01	Computer Multimedia and Graphics

COURSE DESCRIPTION:

Educational and professional goals:	The main objective of this course is to acquire theoretical knowledge and practical skills in the use and differentiation of various types of multimedia content, such as different digital audio and video recordings, images, 2D animations, and 3D animations.
Competences/educational outcomes:	Students will be proficient in fully understanding the structure and nature of monomedia elements, as well as ways to combine them into multimedia forms.
Skills mastered:	Upon completing the course, students will possess theoretical and practical knowledge in manipulating multimedia files.
Course content:	 Multimedia content is broken down into basic monomedia elements, each of which is studied separately. These elements include: image, video, text, animation (interaction), and sound. The structure of multimedia data Basic objective content descriptors for images (color, texture, line orientation, shape) Understanding different image, video, and sound formats. Labeling and searching audio materials. Different types of digital video recordings and their conversion and compression. Types of 2D and 3D multimedia animations.

COURSE METRICS:

		Teac	Teaching activities (lesson) Individual work				TOTAL	
ECTS	Contact lessons R E	Exercises and trainings	Seminar and stud. papers	Pedagogical workshops	Professional and clinical practice	Individual. and group learning	Source research	hours of work

5	20	10	30				78	12	150
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Teaching languages:	English	Serbian		
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ACCESS CONDITIONS

Code	Course/Module title	Grade	Description of conditions (additional)

COURSE METHODOLOGY

- Introduction.
- Basics of the structure of multimedia data: image, video, audio, text, data.
- Basic objective content descriptors for images: color. Color spaces. Color descriptors: moments, histograms, correlograms.
- Basic objective content descriptors for images: texture. Texture characteristics. Texture descriptors based on spatial, spatial-frequency, and statistical texture properties, lines, and shapes. Object segmentation in the scene. Contour definition. Shape description.
- Objective measures of image similarity. Global and regional searching.
- Content-based image retrieval systems.
- Standard for describing image content.
- Basic characteristics of different digital audio materials.
- Methods of conversion, encoding, decoding, and compression of audio content.
- Basic characteristics of different digital video materials.
- Methods of conversion, encoding, decoding, and compression of video content.
- Types of computer-generated 2D and 3D animations.
- Methods for protecting the authenticity of multimedia material (watermarking).
- Presentation of semester (exam) projects.

STUDENT WORK EVALUATION

No.	Type of evaluation	partial/ final	elective / mandatory	Percenta ge of participat ion
01	Activity during lectures	Pre-exam obligation or requirement	Mandatory	5%
02	Attendance	Pre-exam obligation or requirement	Mandatory	5 %
03	Seminar Paper	Pre-exam obligation or requirement	Optional	10 %
04	Final Exam	Final	Mandatory	80 %

LITERATURE / SOURCES (listed in order of relevance)

Author (Last Name, First Name)	Publication title	Publisher's headquarter s	Publisher	Editio n year	Type of publicati on*
a/ Basic literature					
Dušan Starčević Velimir Štavljanin Miroslav Minović	Multimedia	Belgrade	University of Belgrade, FON	2020	Book

1. / C				-	
b/ Supplementary literature	,		T		•
Selma Rizvić, Vensada Okanović	Basic Principles of Computer Graphics	Sarajevo	TDP Sarajevo	2017	Book
c/ Other sources – journals					
Author - Surname, First name (if the source is an article)	Journal title	Publisher's headquarter	Publisher	Editio n year	Type of journal*
c/ Other sources – Internet (WEB) sources				
Site name	Site address	Title o	f work/hyperlink	R	Read