

BASIC INFORMATION:

	<i>The code</i>	<i>The content</i>
Organizational unit	01.07.300.	Faculty of Information Technologies
Abbreviation	01.07.300.	FIT
Chair		The Department of Computer Communications, Networks, and Security (KatNET)
Course/module	1.02.02.01.010	Sound processing and analysis

TYPE OF COURSE:

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

COURSE REGISTRATION:

	<i>The code</i>	<i>The content</i>
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:	To become familiar with the nature of audio signals, master techniques for collecting, manipulating, and processing digital sound.
Competences/educational outcomes:	Students who successfully grasp the material will have the ability to (1) design sound systems for open and enclosed spaces, (2) correctly position microphones for recording speech and music, (3) perform monitoring and audio signal processing, (4) assess acoustic environments and evaluate measures for room acoustic treatment, (5) perform a basic mix and mastering of music compositions.
Skills mastered:	Understanding the physical properties and nature of sound. Proficiency in manipulating digital audio recordings using current software packages (Cubase Steinberg and Adobe Audition). Integrating finalized digital sound into multimedia products.
Course content:	<p><i>Theoretical Teaching:</i></p> <p>Teaching is based on interactive lectures with a set schedule, utilizing modern presentation and demonstration tools and techniques. Through theoretical teaching, students will grasp the fundamental principles and rules of modern audio production, allowing them to approach given problems correctly and facilitating the actual implementation of assigned projects. The teaching is organized through typical lessons covering: the nature of sound, sound characteristics, hardware components, sound digitization, sound compression and formats, basics of audio material processing, audio effects, foley effects, mixing, and mastering.</p> <p><i>Practical Teaching:</i></p> <p>This is conducted in a specialized multimedia laboratory. Students will master standard sound processing applications, Adobe Audition and Cubase Steinberg, through which they will collect, process, and publish sound recordings, adhering to the standards of</p>

	<p>digital sound processing. Special attention is given to the integration of sound and video, which is also part of the practical teaching component.</p> <p>Through practical teaching, students will go through:</p> <ul style="list-style-type: none"> • Analog and digital sound • Digital sound formats and compression • Sound synchronization • Sound processing • Sound effects • DAW (Digital Audio Workstation) user interface • Setting up and processing samples • Recording • Audio PlugIn effects • Foley effects • Mixing • Mastering • Creating loop sequences/arrangements • Creating radio jingles • Audio and video synchronization
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COURSE METRICS:

ECTS	Teaching activities (lesson)					Individual work		TOTAL hours of work	
	Contact lessons		Exercises and trainings	Seminar and stud. papers	Pedagogical workshops	Professional and clinical practice	Individual. and group learning		Source research
	R	E							
5	20	10	30		16		66	8	150

Teaching languages:	English	Serbian		
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ACCESS CONDITIONS

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

COURSE METHODOLOGY

For the successful delivery of the course, modern presentation tools are used to facilitate the mastery of the outlined material. Interaction enhances the dynamics of instruction.

The prerequisite for taking the exam is the completion of a project (practical assignment) through which practical use of tools is confirmed, and through which students encounter and solve specific tasks in modern audio production.

STUDENT WORK EVALUATION

No.	Type of evaluation	partial/ final	elective / mandatory	Percentage of participation
01	Participation in contact work - interaction in lectures	Pre-exam obligation or requirement	Mandatory	5%
02	Activity in exercises/laboratory work	Pre-exam obligation or requirement	Mandatory	5 %

03	Assessment of student practical tasks	Pre-exam obligation or requirement	Mandatory	30 %
04	Student seminar work	Pre-exam obligation or requirement	Mandatory	0 %
05	Exam activities - partial test (problem-based test)	partial	Mandatory / Optional	0%
06	Exam activities - final test (problem-based test, written exam)	Final	Mandatory	60 %

LITERATURE / SOURCES (listed in order of relevance)

Author (Last Name, First Name)	Publication title	Publisher's headquarters	Publisher	Edition year	Type of publication*
a/ Basic literature					
Steinberg Media Technologies	Cubase Pro 12, Advanced Music Production System	Hamburg	Steinberg	2022	Book
b/ Supplementary literature					
Dušan Starčević Velimir Štavljanin Miroslav Minović	Multimedia	Belgrade	University of Belgrade, FON	2020	Book
c/ Other sources – journals					
Author - Surname, First name (if the source is an article)	Journal title	Publisher's headquarters	Publisher	Edition year	Type of journal*
c/ Other sources – Internet (WEB) sources					
Site name	Site address	Title of work/hyperlink		Read	
(*)Type of publication (book, script, compendium, multimedia)					