NAME OF THE COURSE	**Biophysics of Hearing and Speech**					
Code	PMP247	Year of study	GU-1			
Course teacher	Damir Kovačić, PhD, Assistant Professor	Credits (ECTS)	6,0			
Associate teachers		Type of instruction (number of hours)	L	S	E	F
			35	5	10	
Status of the course		Percentage of application of e-learning				
COURSE DESCRIPTION						
Course objectives	To familiarize students with: - fundamental concepts of biophysical mechanisms of hearing and speech production; - research methods in the field of biophysics of hearing and speech.					
Course enrolment requirements and entry competences required for the course	Enrolled one of the diploma study programs. Passed exam in General Physics III (waves).					
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	1. To define the physical parameters of sound and speech as a special sound categories. 2. To describe the properties of simple and complex sounds. 3. To explain the spectral analysis of sounds and speech. 4. To describe the main elements of the auditory system. 5. To understand the main processes responsible for the neural basis of listening. 6. To list research methods in the field of biophysics of hearing and speech. 7. To link research methods with the scientific and research issues.					
Course content broken down in detail by weekly class schedule (syllabus)	Lecture (6h): Acoustics Lecture (6h): Physiology of hearing Lecture (6h): Peripheral and central auditory system Lecture (6h): Auditory perception and production of speech Lecture (6h): Research methods of hearing and speech Seminar (2h): Methods for recording and reproduction of acoustic and speech stimuli Seminar (2h): Biophysical models of cochlear mechanics Seminar (1 h): Neuroengineering and new technologies in hearing and speech (cochlear implants) Exercises (2h): Spectral analysis of sound and speech Exercises (2h): Speech audiometry Exercises (2h): Biophysical techniques of recording neuronal activity of auditory cells and auditory neurons Exercises (2h): Demonstration of the cochlear implant Exercises (2h): Demonstration of 3D navigation transcranial magnetic stimulation					
Format of instruction	☒ lectures ☒ seminars and workshops ☐ exercises ☐ on line in entirety ☐ partial e-learning ☐ field work		☐ independent assignments ☐ multimedia ☐ laboratory ☐ work with mentor ☐ homework assignments			
Student responsibilities	The student is required to attend lectures, seminars and exercises, with a maximum of 20% of excused absences. The student has to pass the colloquium. After passing the colloquium, the student is required to write a					

	term paper with the chosen topic and present it in the form of presentation to colleagues and teacher.

Screening student work *(name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)*

Name	Ects	Name	Ects	Name	Ects
Class attendance	2	Research		Experimental work	
Oral exam		Report		Homework assignments	
Seminar essay	2	Essay			
Tests	1	Practical training			
Written exam		Project			

Grading and evaluating student work in class and at the final exam

The grade is determined based on:
- Colloquium (25% grade)
- Seminar paper (50% grade)
- Oral presentation (25% grade)

Required literature (available in the library and via other media)

Title	Number of copies in the library	Availability via other media
[1] William Yost: Fundamentals of Hearing Science.	0	

Optional literature (at the time of submission of study programme proposal)

[1] Brian C. J. Moore: Anintroduction to the psychology of hearing.
[2] Jan Schnupp, Israel Nelken&Andrew King: Auditory Neuroscience - Making Sense of Sound.
[3] James O. Pickles: An introduction to the physiology of hearing.
[4] Daniel J. Di Lorenzo and Joseph D. Bronzino: Neuroengineering.
[5] Selected research papers.

Quality assurance methods that ensure the acquisition of exit competences

1. Evaluation of results in accordance with the determined learning outcomes.
2. Feedback from students via surveys. Exam results statistics and student evaluation through an anonymous survey at the end of the course. The survey is conducted according to the regulations of the University of Split.
3. Self-evaluation of teacher
4. Institutional and non-institutional checks

Other (as the proposer wishes to add)