POLYTECHNIC OF MEĐIMURJE IN ČAKOVEC

COURSE SYLLABUS

ACADEMIC YEAR: 2022/2023

1. GENERAL COURSE INFORMATION

1.1 Course name	**PHYSICS**			
1.2 Study program/s	Undergraduate professional study of Computer Science			
1.3 Course status (O,E)	O	**1.6 Mode of instruction (number of hours)**	**Lectures**	30
1.4 Course code	5002		**Exercises**	30
1.5 Course abbreviation	FIZ		**Seminars**	
1.6 Semester	I		**E-learning**	
1.7 ECTS	6	**1.7 Place and time of instruction**	Premises of The Polytechnic of Međimurje in Čakovec, according to the schedule published on the website.	

2. TEACHING STAFF

2.1 Course leader/s-title	PhD. Marina Grabar Branilović, lecturer	**contact**	marina.grabar.branilovic@mev.hr
		contact	
2.2 Assistant/s- title		**contact**	
		contact	
2.3 Instruction held by-title	PhD. Marina Grabar Branilović, lecturer	**contact**	marina.grabar.branilovic@mev.hr

3. COURSE DESCRIPTION

3.1 Course goals	Students will learn about physical quantities and measurement units. The course will enable students to understand basic physical laws and phenomena, and to apply this knowledge in other courses they will encounter during their studies, as well as in practical work.
3.2 Prerequisites	There are no conditions.
3.3 Course outcomes	After successfully completing the course, participants will be able to: O1 – distinguish and analyze types of movement O2 – distinguish and apply physical quantities from the field of heat and thermodynamics O3 – analyze electric circuits and the influence of the electric field on the magnetic field and vice versa O4 – explain wave motion O5 – understand and apply the laws of radiation and the law of radioactive decay
3.4 Course content	The course presents content related to matter, motion, energy and interaction. The content is based on physical laws from the fields of mechanics, thermodynamics, statistical physics, electromagnetism, harmonic oscillations and waves, optics, atomic and quantum physics, and nuclear physics.

3.5 Types of coursework

x	Lectures	x	Exercises		Blended e-learning	x	Individual activities		Laboratory
	Seminars and workshops	x	Distant learning		Field classes		Multimedia and network		Mentorship
	Other								

3.6 Language of instruction

Croatian

3.7 Monitoring students' work (enter the number of ECTS credits for each activity so that the total number of ECTS credits is equal to the total ECTS value of the course, 1 ECTS = 30 hours)

2,0	Class attendance		Seminars		Essay
	Class activity		Project		Report/paper
3,0	Exams (Midterm exams, Written exam, Oral exam)		Practical task		Continuous knowledge check
			Experimental work	1,0	Homework
			Research		

3.8 Assessment and evaluation of students' work during classes and at the final exam

Activity specification	Percent %	Points
Assessment during instruction		
Attendance	10%	10
Class activity	10%	10
Midterm exam 1	35%	35
Midterm exam 2	35%	35
Oral part of the exam	10%	10
Exam assessment for the students who failed to fullfil all the obligatory requirements during the semester		
Written exam	*60%*	*60*
Oral exam	*20%*	*20*
Total:	**100%**	**100**

3.9 Assessment criteria – analysis per learning outcomes

Ways of evaluating learning outcomes						
	Attendance	**Activity**	**Mid-term exam 1**	**Mid-term exam 2**	**Practical work**	**Total**
Outcome 1			20		2	22
Outcome 2			20		2	22
Outcome 3				20	2	22
Outcome 4				10	2	12
Outcome 5				10	2	12
Outcome not-related	5	5				10
Total	5	5	40	40	10	100

Grading of outcomes (in order to pass the mid-term exam/exam the student must achieve at least 50% points for each learning outcome)

Points	Grade
89 – 100	excellent (5)
76 – 88	very good (4)
63 – 75	good (3)
50 – 62	pass (2)
0 – 49	fail (1)

3.10 Specific features related with taking the course

In order to pass the course, the student must achieve a minimum of 50% of the points available for each learning outcome. If a student does not achieve a sufficient number of points on the 1st midterm exam (minimum 50% of the total number of points), he/she cannot take the next midterm exam. The points earned on the midterm exams for each learning outcome are no longer deleted, except in the case that the student himself/herself decides to improve the result for a particular learning outcome, in which case the points earned until then are deleted and the newly achieved points for that learning outcome are

	entered. The final grade is obtained at the exam period and is the sum of the points achieved during the class. Students who did not pass the colloquy take the written and oral part of the exam, where all learning outcomes are checked.	
3.11 Students obligations	Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam. Attendance can be offset by online tuition, organised webinars and added assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit is counted as one absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.	
3.12 Written assignments		
3.13 Required reading	1.	J. D. Cutnell, K.W. Johnson: Physics, John Wiley and Sons; 9th edition, 2012.
	2.	A. A. Kamal: 1000 solved problems in classical physics, an exercise book, Springer 2011.
3.14 Additional reading	1.	S. Weinberg: Foundations of modern physics, Cambridge University Press, 2021
	2.	Young&Freedman: University Physics with Modern Physics, 2016.
4 ADDITIONAL COURSE INFORMATION		
4.1 Quality control	The quality of the program, teaching process, teaching skills and level of mastery of the material will be established by conducting a written evaluation based on questionnaires, and in other standardised ways and in accordance with the by-laws of the Polytechnic of Međimurje in Čakovec.	
4.2 Contact the teacher	Students can contact the teacher during the office hours and during classes, while for short questions and explanations they can contact him/her any day during working hours by coming in person or by landline. It is also possible to ask questions by e-mail, which will be answered in 48 hours at the latest. It is desirable for students to come as often as possible for any possible questions during the teacher's office hours.	
4.3 Information about the course	It is the obligation of each student to be regularly informed about the course. All notifications about the classes or possible postponement of classes will be posted on the bulletin board and on the website of the Polytechnic at least 24 hours in advance.	

4.4 Course contribution to the study program	Apply the acquired learning skills, basic knowledge of the profession and problem solving necessary for continuing studies at a higher level. Apply communication and professional ethics.