Ž

MEĐIMURSKO VELEUČILIŠTE U ČAKOVCU
MEĐIMURJE UNIVERSITY OF APPLIED SCIENCES IN ČAKOVEC

COURSE SYLLABUS

ACADEMIC YEAR: 2024/2025

1. GENERAL COURSE INFORMATION				
1.1 Course name	**Physics**			
1.2 Study program/s	Undergraduate professional study of Sustainable Development			
1.3 Course status (O,E)	O	**1.6 Mode of instruction (number of hours)**	**Lectures**	30
1.4 Course code			**Exercises**	30
1.5 Course abbreviation			**Seminars**	
1.6 Semester	II		**E-learning**	Merlin
1.7 ECTS	6	**1.7 Place and time of instruction**	The premises of the Međimurje University of Applied Sciences in Čakovec, according to the schedule published on the website	
2. TEACHING STAF.F				
2.1 Course leader/s-title	Marina Grabar Branilović, PhD	**contact**	marina.grabar.branilovic@mev.hr	
		contact		
2.2 Assistant/s- title		**contact**		
		contact		
2.3 Instruction held by-title	Marina Grabar Branilović, PhD	**contact**	marina.grabar.branilovic@mev.hr	
2.4 Course leader/s-title		**contact**		
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	None			
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			
3.4 Contribution of the course to the study program	**SO1** 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.			
3.5 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.			

3.6 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								

3.7 Language of instruction	Croatian

3.8 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		Research
2,0	Midterm exams/written exam		Project		Essay
	Oral exam	1,0	Home work		

Activity specification	Percent %	Points
Assessment during instruction		
Attendance	10%	10
Continuous assessment	10%	10
Midterm exam 1	35%	35
Midterm exam 2	35%	35
Oral 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**

Ways of evaluating learning outcomes						
	Attendance	**Activity**	**Mid-term exam 1**	**Mid-term exam 2**	**Practical work**	**Total**
Outcome 1			5		5	10
Outcome 2		5	10	5	5	25
Outcome 3		5		10	5	20
Outcome 4		5			5	15
Outcome 5		5			5	20
Outcome not-related	5	5				10
Total	**5**	**20**	**15**	**15**	**25**	**100**

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

3.9 Specific features related to 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.

3.10 Students obligations

- a full-time student has the right to sit for the exam if he attends classes for a minimum of 70% of the total prescribed number of hours

	• a full-time student who attends classes from 50 to 70% of the total prescribed number of hours can exercise the right to take the exam by completing additional teaching activities in agreement with the course teacher • a full-time student who attends a certain course for less than 50% of the prescribed number of hours enrolls in the course the following academic year • a part-time student has the right to sit for the exam if he/she attends classes for a minimum of 30% of the total prescribed number of hours • a part-time student who attends classes for 20 to 30% of the total prescribed number of hours can exercise the right to sit for the exam by completing additional teaching activities in agreement with the course teacher • a part-time student who attends the classes of a certain course for less than 20% of the prescribed number of hours re-enrolls in the course the following academic year	
3.11 Written assignments		
3.12 Required reading	1	P. Kulišić: Mehanika i toplina, Školska knjiga, 2011.
3.13 Additional reading	1	Petar Kulišić i suradnici: Riješeni zadaci iz mehanike i topline, Školska knjiga,2011.

4. ADDITIONAL INFORMATION ABOUT THE COURSE	
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 Međimurje University of Applied Sciences in Čakovec.
4.2 Contact the teacher	Students can contact the teacher during the office hours and during classes. All other methods of communication are arranged with the teacher. 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 University at least 24 hours in advance.

5. ELABORATION OF THEMATIC UNITS

Week	Topic	Course outcome
1.	Introduction. Physical quantities and measurement units, kinematics	O1
2.	Dynamics, complex movements	O1
3.	Work and power	O1
4.	Fluid statics	O1
5.	Rigid body mechanics	O1
6.	Gaseous state	O1
7.	Thermodynamics	O2
8.	Midterm exam 1	
9.	Electrostatics	O2
10.	Electrodynamics	O3
11.	Magnetism	O3
12.	Mechanical waves	O4

13.	Wave optics	O4
14.	Atomic physics	05
15.	Midterm exam 2	