

Subject programme

1. Subject name / subject module: **Physics**
2. Lecture language: **English**
3. **The location of the subject in study plans:**
 - Area or areas of the studies: Computer Engineering and Mechatronics
 - Degree of the studies: **1st degree studies**
 - Field or fields (implementation of effects standard): **Mechatronics**
4. Supervision of subject implementation:
 - The Institute / Another unit: **Institute of Informatics and Mechatronics**
 - The person responsible for the subject: **Galanciak Danuta, dr inż.**
 - People cooperating in the development of the programme of the subject:
5. The number of hours and forms of teaching for individual study system and the evaluation method

Mode of study	Teaching activities with the tutor																				Total ECTS	
	Form of classes																					
	SOW	ECTS	Lecture	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS		
Full-time studies			15	35	2																	2
Part-time studies																						
Credit rigor	...			graded assignment																		

6. Student workload – ECTS credits balance
1 ECTS credit corresponds to 25-30 hours of student work needed to achieve the expected learning outcomes including the student's own work

Activity (please specify relevant work for the subject)	Hourly student workload (full-time studies/part-time studies)
Participation in lectures	15/0
Independent study of the subject – preparing for graded assignment	33/0
Participation in an exam / graded assignment / final grading	2/0
Total student workload (TSW)	50/0
ECTS credits	2
* Student's workload related to practical forms	0/0
Student's workload in classes requiring direct participation of academic teachers	15/0

7. Implementation notes: recommended duration (semesters), recommended admission requirements, relations between the forms of classes:

None

Recommended duration of the subject is taken from the course plan.

8. Specific learning outcomes – knowledge, skills and social competence

Specific learning outcomes for the subject		Form	Teaching method	Methods for testing of (checking, assessing) learning outcomes
Outcome symbol	Outcome description			
Knowledge				
K_W01	Student knows and understands at an advanced level the methods and theories explaining the complex dependencies in the fields science necessary to formulate and solve tasks related to mechatronics.	Lecture	expository methods	Student's activity during lectures.
Skills				
K_U08	Student is able to plan and carry out experiments, including measurements and computer simulations, interpret the obtained results and draw conclusions - with particular emphasis on modern IT tools.	Lecture	expository methods	Student's activity during lectures.

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9. Assessment rules / criteria for each form of education and individual grades

0% - 50%	ndst	81% - 90%	db
51% - 70%	dst	91% - 93%	db+
71% - 80%	dst+	94% - 100%	bdb

Activity	Grades	Calculation	To Final
Activity during lectures	2,3,4,5	Arithmethical average	5

10. The learning contents with the form of the class activities on which they are carried out

Lecture

1. Measurement;
2. Motion In A Straight Line;
3. Motion in A Plane;
4. Laws of Motion;
5. Work, Energy and Power;
6. Systems of Particles And Rotational Motion;
7. Gravitation;
8. Mechanical Properties of Solids;
9. Mechanical Properties of Fluids;
10. Thermal Properties of Matter;
11. Thermodynamics;
12. Kinetic Theory;
13. Oscillations;
14. Waves.

11. Required teaching aids

Lecture - multimedia projector

12. Literature:

a. Basic literature:

- Halliday, Resnick, Fundamentals of Physics, COVER IMAGE 2007 CERN

b. Supplementary literature:

c. Internet sources:

13. Available educational materials divided into forms of class activities (Author's compilation of didactic materials, e-learning materials, etc.)

14. Teachers implementing particular forms of education

Form of education	Name and surname
1. Lecture	Gireń Bolesław, dr hab. inż., Galanciak Danuta, dr inż.