

DISCIPLINE DESCRIPTION

1. Information on the study programme

1.1 Academic institution	UNIVERSITY OF ORADEA
1.2 Faculty	FACULTY OF ENVIRONMENTAL PROTECTION
1.3 Department	Forestry and Forestry Engineering
1.4 Field of study	Forestry
1.5 Cycle of study	BACHELOR
1.6 Study programme/Qualification	Forestry Exploitations/ Forestry engineer

2. Information on the discipline

2.1 Name of discipline	Physics						
2.2 Course holder	Lecturer Phys. Eng. Alin Cristian TEUȘDEA, PhD						
2.3 Seminar/Laboratory/Project holder	Lecturer Phys. Eng. Alin Cristian TEUȘDEA, PhD						
2.4 Year of study	1	2.5 Semester	1	2.6 Type of evaluation	Ex	2.7 Regime of discipline	C

(C) Compulsory; (O) Optional; (E) Elective

3. Total estimate time (hours per semester of didactic activities)

3.1 Number of hours per week	2	out of which: 3.2 course	1	out of which 3.3 seminar/laboratory/project	0/ 1/0
3.4 Total hours in the curriculum	42	out of which: 3.5 course	28	out of which 3.6 seminar/laboratory/project	0/14/0
Time allotment					hours
Study assisted by manual, course support, bibliography and notes					18
Additional documentation in the library/ on specialised electronic platforms and in the field					18
Preparation of seminars/laboratories/ topics/reports, portfolios and essays					16
Tutorship					0
Examinations					6
Other activities.....					0
3.7 Total hours of individual study	58				
3.9 Total hours per semester	100				
3.10 Number of credits	4				

4. Prerequisites (where appropriate)

4.1 curriculum	-
4.2 competences	-

5. Conditions (where appropriate)

5.1. related to course	<ul style="list-style-type: none"> The course is based on oral presentation with video projector, notebook with MS PowerPoint software, Adobe Reader, Internet access. Students can ask questions and have the obligation to follow the course schedule. During the course students will not be present with open mobile phones.
5.2. related to seminar/laboratory/ project	<ul style="list-style-type: none"> For practical work, it is mandatory to prepare (study) each practical work a week before.

	<ul style="list-style-type: none"> • Each student will conduct an individual activity with the equipment and laboratory materials that will be completed by performing the calculations described in the laboratory guide. • During laboratory work, students are not allowed to make telephone calls within the laboratory.
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6. Specific competences acquired	
Professional competences	<ul style="list-style-type: none"> • Identify and appropriately use the main laws and physical principles in a given context: Apply physics principles and laws in solving theoretical or practical problems under qualified assistance. • To develop the ability to explain phenomena in food engineering as a consequence of applying physics laws in the context of the complexity of forestry engineering • To develop the ability to use lab techniques necessary for food engineering designing experimental design, obtaining experimental data, analyzing and interpreting them and formulating conclusions • To apply the knowledge in the physics field of both in concrete situations in related fields and in experiments, using standard laboratory equipment.
Transversal competences	<ul style="list-style-type: none"> • To demonstrate preoccupation for professional development through the use of practical thinking skills, engineering • To participate in scientific projects • Acquiring / completing the information needed to assimilate the content of disciplines in forestry engineering

7. Objectives of discipline (coming from the specific competences acquired)

7.1 General objective	<ul style="list-style-type: none"> ▪ Acquiring specific the language and the notions related to physical phenomena that arise in the field of forestry
7.2 Specific objectives	<ul style="list-style-type: none"> ▪ Acquiring specific language ▪ Acquiring insights regarding the physical phenomena that arise in the field of forestry ▪ Interpretation of physics equations and their correct application in experiments ▪ Performing experimental measurements, processing and interpreting the results ▪ Identifying applications specific to the field of forestry in which the physical phenomena were studied

8. Content*/

8.1 Course	Methods of teaching	No. of hours/Remarks
Physical sizes and their measurement.	systematic exposure, conversation, problem-solving,	2
Errors evaluation, results processing and evaluation.	systematic exposure, conversation, problem-solving,	2

Mechanics - general problems. Vector computation.	systematic exposure, conversation, problem-solving,	2
Kinematics. Speed and acceleration. The circular motion. The relative movement of the material point.	systematic exposure, conversation, problem-solving,	2
Dynamics and static of the material point. The principles of dynamics. Movement of the material point under the action of forces. The kinetic moment theorem. The Law of Kinetic Moment Conservation. Mechanical work and power. Kinetic energy. Potential energy. Total energy. The Law of Total Energy Conservation.	systematic exposure, conversation, problem-solving,	8
Oscillations and waves. Dynamics of harmonic oscillatory motion. Composition of harmonic oscillations. Mechanical waves.	systematic exposure, conversation, problem-solving,	2
Thermodynamic elements. The postulates of thermodynamics. The Consequences of Thermodynamics Principles	systematic exposure, conversation, problem-solving,	2
Electricity and magnetism. Maxwell's equations. Electromagnetic waves	systematic exposure, conversation, problem-solving,	2
Geometric Optics. Spherical diopter, lenses. Optical systems centered, their composition. Optical instruments.	systematic exposure, conversation, problem-solving,	2
Wave optics. Interference of light. Light diffraction.	systematic exposure, conversation, problem-solving,	2
Electromagnetic Optics. Light polarization. Applications.	systematic exposure, conversation, problem-solving,	2
Obs: * Oral exposures, videoprojector presentations, simulations		
Bibliography		
<ol style="list-style-type: none"> 1. Creangă Ileana, Fizică (I), Ed. Matrix Rom, București, 2005. 2. Creangă Ileana, Fizică (II), Ed. Matrix Rom, București, 2014. 3. Boer A., Optică, Ed. Matrix Rom, București, 2006. 4. Demșoreanu B., Mecanică teoretică, Tipografia Universității Timișoara, 1991. 5. Irina Nicoară, Introducere în optică, Tipografia Universității Timișoara, 1990. 6. I. Luminosu, Fizică, Tipografia Universității Tehnice "Politehnica" Timișoara, 1991. 7. Alin C. Teușdea, Fizică generală prin aplicații practice, Ed. Universității din Oradea, ediția a 2-a, 2012, ISBN 978-606-10-0778-3; 53(075.8). 8. Alin C. Teușdea, Elemente de biofizică în tehnică, Curs, 2012. 		
8.2 Seminar		
8.3 Laboratory	Methods of teaching	No. of hours/Remarks
Liquids density determination by the pycnometer method.	systematic exposure, conversation, problem-solving,	2 /experiment
Surface tension coefficient determination with stalagmometer.	systematic exposure, conversation, problem-solving,	2 /experiment

Measuring viscosity of liquids with Ostwald viscometer.	systematic exposure, conversation, problem-solving,	2 /experiment
Solids specific heat determination by calorimetric method.	systematic exposure, conversation, problem-solving,	2 /experiment
The refractive index of liquids determination with Abbe refractometer.	systematic exposure, conversation, problem-solving,	2 /experiment
Wheatstone Bridge. Measurement of electrical resistances.	systematic exposure, conversation, problem-solving,	2 /experiment
Light intensity study using photocell (air absorption coefficient).	systematic exposure, conversation, problem-solving,	2 /experiment
8.4 Project	-	-

Bibliography

1. Creangă Ileana, Fizică (I), Ed. Matrix Rom, București, 2005.
 2. Creangă Ileana, Fizică (II), Ed. Matrix Rom, București, 2014.
 3. Boer A., Optică, Ed. Matrix Rom, București, 2006.
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- Alin C. Teușdea, Elemente de biofizică în tehnică, Curs, 2012.

* The content, respectively the number of hours allocated to each course / seminar / laboratory / project will be detailed during the 14 weeks of each semester of the academic year.

9. Corroboration of discipline content with the expectations of the epistemic community, professional associations and representative employers from the field corresponding to the study programme

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10. Evaluare

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the final grade
10.4 Course	Written exam	Written paper	50%
10.5 Seminar	-	-	-
10.6 Laboratory	Practical colloquium	Executing a practical work/experiment	50%
10.7 Project	-	-	-

10.8 Minimum standard of performance:

Each of the two components of the final mark must be passed with a minimum grade of 5 (five).

Date of completion

Signature of **course holder****

Signature of ~~seminar~~
laboratory/project holder **

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Alin C. Teușdea, PhD
ateusdea@uoradea.ro,
ateusdea@gmail.com,

Alin C. Teușdea, PhD
ateusdea@uoradea.ro
ateusdea@gmail.com

Date of approval in the department

Signature of the Head of Department

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Prof. Eng. Ioan Vlad, PhD

Dean signature

Prof. Eng. Ioan Chereji, PhD