GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Physics 2: Vibration, Waves and Thermodynamics (0000188)

Course size *(nominal values; actual values may depend on programme)*

Credits 5.0 **Study time 150 h**

Course offerings and teaching methods in academic year 2024-2025

A (semester 2)	English	Incheon	lecture	
			group work	0.0h
			practical	0.0h
			seminar	

Lecturers in academic year 2024-2025

Loekman, Soebiakto	KR01	lecturer-in-charge

Offered in the following programmes in 2024-2025	**crdts**	**offering**
Bachelor of Science in Environmental Technology	5	A
Bachelor of Science in Food Technology	5	A
Bachelor of Science in Molecular Biotechnology	5	A
Joint Section Bachelor of Science in Environmental Technology, Food Technology and Molecular Biotechnology	5	A

Teaching languages

English

Keywords

Waves, Vibrations, Properties of materials, Thermodynamics

Position of the course

Give the students a thorough training in basic physics, with a focus on both basic principles and practical applications.
The purpose of the course is:

- to make the students familiar with the analysis of static equilibrium, elasticity, and fracture,
- to establish an understanding of the various states of matter,
- to gain a working understanding of both physical and chemical thermodynamics,
- to learn with respect to physical aspects how to calculate the energy transfer of processes.

Contents

1 Static Equilibrium; Elasticity and Fracture
2 Fluids
3 Oscillations and Waves
4 Sound
5 Temperature and Kinetic Theory
6 Heat
7 The Laws of Thermodynamics

Initial competences

Secondary school knowledge of physics and mathematics

Final competences

1 Independently recognize and analyze forces acting on system in equilibrium.
2 Describe and analyze mechanical vibrations and wave motion in general classical systems.
3 Describe and analyze thermodynamic processes and properties of materials.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Group work, Seminar, Lecture, Practical

Extra information on the teaching methods

Lecture: 30 hours; Practical: wet-laboratory session: 2.75 hours; Seminar: guided exercises: 24.5 hours; Group work: 2.75 hours

Study material

Type: Handbook

Name: Physics: Principles with Applications, Global Edition, 7th Edition (2015), Pearson-Prentice Hall
Indicative price: € 47
Optional: no
Language : English
Author : D.C. Giancoli
ISBN : 978-1-29205-712-5
Oldest Usable Edition : 2015
Usability and Lifetime within the Study Programme : regularly
Additional information: Chapters 9-15. Target price*: approx. 43 EUR, 68,000 KRW or 50 USD

Type: Slides

Name: Course slides
Indicative price: Free or paid by faculty
Optional: no
Additional information: A combination of notes provided in the class and power point slides available on Ufora.

References

D.C. Giancoli (2015), Physics: Principles with Applications, Global Edition, 7th Edition. Chapters 9-15, Pearson-Prentice Hall.
ISBN 13: 978-1-292-05712-5

Course content-related study coaching

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Written assessment with open-ended questions

Examination methods in case of periodic assessment during the second examination period

Written assessment with open-ended questions

Examination methods in case of permanent assessment

Participation, Written assessment, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is not possible

Extra information on the examination methods

End-of-term evaluation and continuous assessment

Calculation of the examination mark

Total of 100 points (20 out of 20) will be distributed under the following schemes:
Non-periodic evaluation (midterm) – Written examinations with open questions: max. 10 points (max. 2 out of 20) (10%)
Practical course session – wet laboratory practical (including attendance and report): max. 10 points (max. 2 out of 20) (10%)
Periodic evaluation (final term) – Written examination with open questions: 80 points (max. 16 out of 20) (80%)

Students who eschew period aligned and/or non-period aligned evaluations for this course may be failed by the examiner.