GHENT UNIVERSITY

Course Specifications

From the academic year 2021-2022 up to and including the academic year

Physics for Pharmacy (J000482)

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

Credits 6.0 **Study time 180 h** **Contact hrs** 60.0h

Course offerings and teaching methods in academic year 2022-2023

A (semester 2)	Dutch	Gent	lecture	35.0h
			lecture: plenary exercises	20.0h
			guided self-study	2.5h
			demonstration	2.5h

Lecturers in academic year 2022-2023

Poelman, Dirk	WE04	lecturer-in-charge
Smet, Philippe	WE04	co-lecturer

Offered in the following programmes in 2022-2023	**crdts**	**offering**
Bachelor of Science in Pharmaceutical Sciences	6	A

Teaching languages

Dutch

Keywords

General physics, mechanics, thermodynamics, electricity, optics, radioactivity.

Position of the course

The goal of this course is to gain insight into the basic principles of physics. The aim is to stimulate and develop scientific thinking, rather than knowledge of formulas and facts.

Contents

Measurement and estimation
Kinematics
Dynamics
Work and potential energy
Fluids
Diffusion and sedimentation
Vibration, waves and sound
Calorimetry, phase transitions and heat transfer
Electric charge, electric field, electric potential
Electrical conduction and circuits
Geometric optics
Lenses and optical instruments
Interference, diffraction and polarization of light
Light absorption and scattering
Nuclear physics and radioactivity
Effects and applications of ionizing radiation

Initial competences

Basic knowledge of mathematics from secondary education is sufficient. Since the course is starting from the basics, no specific prior physics knowledge is required.

Final competences

1 To know the basic laws of physics (see the section "content") and to define all the occurring variables.
2 Apply the basic laws of physics (see the section "content") in an integrated way

to the derived problems and issues.
3 Use the correct units with formulas and with numerical results.
4 Interpret the derived formulas, apply them and, if necessary, display them in a graph.
5 Reduce physical problems to their physical essence or model (figure with indication of the relevant quantities and possibly applicable conditions).
6 Perform the various steps that lead to a certain formula from the basic laws in a mathematically correct way.
7 Have a sense of orders of magnitude.

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

Lecture: plenary exercises, Demonstration, Guided self-study, Lecture

Extra information on the teaching methods

Theory: lectures supported by demonstration tests, peer instruction, applets and audiovisual material. Exercises: under the supervision of assistants and / or the teacher. Detailed exercises are made available via Ufora. A Curios task is made available after each chapter, so that self-assessment of the acquisition of the basic knowledge is possible. The students have ample opportunity to test themselves and interact with each other (via the Ufora forum) and with the supervisors.

Learning materials and price

A handbook will be made available with selected chapters from
• D. C. Giancoli, Physics, part I: mechanics and thermodynamics.
• D. C. Giancoli, Physics, part II: electricity, magnetism, optics and modern physics.
(cost approximately € 75).

The powerpoint presentations used in the theory lessons are made available to the students in electronic form.

Formulary, made available through Ufora.

References

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 examination with multiple choice questions

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

Written examination with multiple choice questions

Examination methods in case of permanent assessment

Participation

Possibilities of retake in case of permanent assessment

examination during the second examination period is not possible

Extra information on the examination methods

Periodical evaluation: Written exam with use of (fixed) formulary; multiple choice questions with cesure. This exam includes insightful theoretical questions, numerical and non-numerical problems.

Non-periodical evaluation: Evaluation of participation in the assignments made available online via Ufora.

Calculation of the examination mark

Periodical evaluation for the theory and exercises (90%) and non-periodical evaluation: participation to the online tasks (10%).