GHENT UNIVERSITY

Course Specifications

Valid in the academic year 2024-2025

Stars and Planets (C004206)

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

Credits 6.0 **Study time 180 h**

Course offerings and teaching methods in academic year 2024-2025

A (semester 2)	Dutch	Gent	seminar
			lecture

Lecturers in academic year 2024-2025

De Rijcke, Sven	WE05	lecturer-in-charge

Offered in the following programmes in 2024-2025	**crdts**	**offering**
Bachelor of Arts in Moral Sciences	6	A
Bachelor of Arts in Philosophy	6	A
Bachelor of Science in Mathematics	6	A
Bachelor of Science in Physics and Astronomy	6	A
Micro-credential Stars and Planets	6	A

Teaching languages

Dutch

Keywords

Astronomy, stars, planets, atmospheres, observing

Position of the course

This course unit belongs to the learning pathway "Astronomy" in the Bachelor program Physics and Astronomy.
The purpose of the course is to provide a general overview of contemporary astronomy. This course is a prerequisite for more advanced courses.

Contents

- History of astronomy
- the sky/time/calendar
- optics/telescopes/observing
- magnitude scale, colors
- atmospheres of stars and planets
- climate
- the solar system (2-body problem, planetary configurations)
- exoplanets
- stellar structure
- stellar parameters
- the Herzsprung-Russell diagram

Initial competences

The course is intended for students with little or no knowledge of astronomy, but who are able to follow a scientific argument and have basic skills in calculus.

Final competences

1 The student has a scientifically sound, albeit general, knowledge of the universe, including quantitative aspects.
2 The student is able to perform order of magnitude calculations and has sufficient knowledge of astronomical instruments to be able to understand their purpose and parameters.
3 The student understands the complementarity of astronomical observations in

different parts of the electromagnetic spectrum, and understands the implications thereof on the astronomical methodology of knowledge acquisition.

4 The student has developed a critical and scientific attitude.

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

Seminar, Lecture

Extra information on the teaching methods

Exercises: tutorials.

Study material

Type: Handbook

Name: Fundamental Astronomy
Indicative price: € 60
Optional: yes
Author : H. Karttunen, P.Kroger, H. Oja, M. Poutanen, K.J. Donner

Type: Syllabus

Name: Syllabus
Indicative price: Free or paid by faculty
Optional: no
Additional information: freely available as .pdf on Ufora

References

Fundamental Astronomy, H. Karttunen, P.Kroger, H. Oja, M. Poutanen, K.J. Donner, ISBN 978-3-540-34134-7, Springer

Course content-related study coaching

Both the lecturer and his assistant are available for additional coaching if necessary.

Assessment moments

end-of-term 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

Possibilities of retake in case of permanent assessment

not applicable

Extra information on the examination methods

- Theory: written.
- Exercises: written, open book.

For students with no prior math training, a differentiated theory exam will be prepared that tests their understanding of the relevant physical principles rather than their technical and mathematical skills. The exercise exam is the same for everybody.

Calculation of the examination mark

- Theory: end-of-term evaluation. (10 points)
- Exercises: end-of-term evaluation. (10 points)