

## Thin Films and Surface Physics (C000838)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)  
Credits 6.0 Study time 180 h Contact hrs 52.5 h

### Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	Dutch	Gent		
			demonstration	2.5 h
			lecture	30.0 h
			self-reliant study activities	7.5 h
			seminar: coached exercises	12.5 h
			online lecture	0.0 h
			online seminar: coached exercises	0.0 h

### Lecturers in academic year 2020-2021

Depla, Diederik

WE04 lecturer-in-charge

### Offered in the following programmes in 2020-2021

[Bachelor of Science in Physics and Astronomy](#)

crdts	offering
6	A

### Teaching languages

Dutch

### Keywords

Thin films, surfaces, sputtering processes

### Position of the course

To acquire a thorough level of understanding of surface physics and the interaction of surfaces with electrons, ions and molecules. To familiarize the student with the characterization of surfaces. These subjects are applied to the study of different deposition techniques for thin films and their growth mechanisms. However, several of the subjects can be applied in different courses.

### Contents

- Surface physics: Chapter 1 : Surface Physics and Thin Films, Chapter 2 : Ultra High Vacuum and clean surfaces, Chapter 3 : Surface Crystallography, Chapter 4 : Surface Thermodynamics, Chapter 5 : The electronic structure of surfaces, Chapter 6 : Surface Chemical Analysis : XPS, Chapter 7 : Adsorption
- Thin Films: Chapter 8 : Thin film growth, Chapter 9 : Evaporation, Chapter 10 : Sputter deposition

### Initial competences

The student in the Bachelor Physics and Astronomy has enough background to follow this course.

### Final competences

- 1 The student must understand the basic subjects concerning surface physics.
- 2 The student must be able to describe the different measuring techniques and deposition techniques in a comprehensive way.

### 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

Demonstration, lecture, self-reliant study activities, seminar: coached exercises, online lecture, online seminar: coached exercises

#### Extra information on the teaching methods

Due to COVID19 , modified work forms can be rolled out if necessary.

#### Learning materials and price

A syllabus is available  
Price:€10.

#### References

#### Course content-related study coaching

- Teacher is available for individual explanation of course subject matter
- The problem solving sessions give the student the opportunity to practice the subjects taught during the classroom lecture
- Home tasks enable the student to practice the subjects individually.

#### Evaluation methods

end-of-term evaluation

#### Examination methods in case of periodic evaluation during the first examination period

Written examination with open questions, open book examination

#### Examination methods in case of periodic evaluation during the second examination period

Written examination with open questions, open book examination

#### Examination methods in case of permanent evaluation

#### Possibilities of retake in case of permanent evaluation

not applicable

#### Extra information on the examination methods

The written part (open book) tests the student's knowledge and understanding of the course material. The exam contains 6 questions (score on 10 per question). The average of the 5 best answers determines the final score.

#### Calculation of the examination mark

The examination mark is determined for 100% by the periodical evaluation.