GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2020-2021

Optical Mineralogy & Petrography (C001505)

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 5.0 **Study time 150 h** **Contact hrs** 62.5 h

Course offerings and teaching methods in academic year 2021-2022

A (semester 1)	Dutch	Gent	online lecture	0.0 h
			practicum	40.0 h

Lecturers in academic year 2021-2022

Cnudde, Veerle	WE13	lecturer-in-charge
Van Stappen, Jeroen	WE13	co-lecturer

Offered in the following programmes in 2021-2022	**crdts**	**offering**
Bachelor of Science in Geology	5	A
International Master of Science in Sustainable and Innovative Natural Resource Management	5	A
Preparatory Course Master of Science in Geology	5	A

Teaching languages

Dutch

Keywords

Microscopy, mineralogy, petrography, petrology

Position of the course

Acquiring theoretical and practical knowledge and understanding of the optical behaviour of minerals.
Learning to identify the most important rock-forming minerals by using a petrographical microscope.
Learning to recognise and describe microtextural characteristics of sedimentary and crystalline rocks.

Contents

Importance of optical mineralogy and petrography in the earth sciences
Preparation of grain mounts and thin sections
Optical behaviour of minerals
Determination of optical properties of minerals
Relationship between optical and crystallographic orientations
Study of minerals in grain mounts
Study of minerals in rock thin sections
Textural features of magmatic and metamorphic rocks
Textural features of sedimentary rocks
Special optical techniques

Initial competences

Basic knowledge of mineralogy, crystallography and petrology: The student should have followed the courses Introduction to Mineralogy and Introduction to Petrology (first year BSc Geology).

Final competences

1 Using a petrographical microscope for the study of the most important rock-forming minerals and the most common rock types.

2 Identifying the common rock-forming minerals in thin section.
3 Insight in the relationships between chemical, crystallographic and optical characteristics of minerals.
4 Accurately describing and interpreting structures and textures.
5 Making the link between petrogenetic processes on the one hand, and mineralogical and textural characteristics of rocks on the other.

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

Guided self-study, lecture, practicum, self-reliant study activities, online lecture

Extra information on the teaching methods

Exercises: study of grain mounts and thin sections using a petrographical microscope.

Learning materials and price

Lecture notes compiled by the lecturer, on Ufora.
Powerpoint files of lectures, on Ufora.

References

MacKenzie, W.S. & Adams, A.E., 1993. A colour atlas of rocks and minerals in thin section. Manson Publishing, London, 192 pp.
Melgarejo, J.C., 1997. Atlas de asociaciones minerales en lamina delgada. Edicions Universitat de Barcelona, Barcelona, 1076 pp.

Course content-related study coaching

Intensive guidance of students during microscopy exercises.
Availability of reference works during microscopy exercises.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Written examination with open questions

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

Written examination with open questions

Examination methods in case of permanent evaluation

Participation, assignment, job performance assessment

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

Weekly evaluation (during practice and based on ufora activity). Attenting the weekly practice course is obliged.

Calculation of the examination mark

The student must pass both the theoretical (40% of the total score) as well as the practical exam (60% of the total score) in order to be succesfull and to meet the final competences. When the student scores less than 10/20 for at least one of the components, he/she can no longer pass the entire course unit. If the total score is a mark of ten or more out of twenty, then this is reduced to the highest failing mark (9/20).