

Optical Mineralogy & Petrography (C001505)

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

Credits	5.0	Study time	150 h	Contact hrs	62.5 h
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Course offerings and teaching methods in academic year 2017-2018

A (semester 1)	Dutch	lecture	22.5 h
		practicum	40.0 h

Lecturers in academic year 2017-2018

Cnudde, Veerle	WE13	lecturer-in-charge
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Offered in the following programmes in 2017-2018

	crdts	offering
Bachelor of Science in Geology	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 The student knows how to use a petrographical microscope for the study of the most important rock-forming minerals and the most common rock types.
- 2 The student can identify the common rock-forming minerals in thin section.
- 3 He/she shows insight in the relationships between chemical, crystallographic and optical characteristics of minerals.
- 4 The student can accurately describe and interpret structures and textures.
- 5 He/she appreciates 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

Lecture, practicum

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 Minerva.

Powerpoint files of lectures, on Minerva

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

Assignment, job performance assessment

Possibilities of retake in case of permanent evaluation

not applicable

Calculation of the examination mark

The student must pass both the theoretical as well as the practical exam in order to be successful.