

Introduction à la pétrologie

Lecturer

Nadine MATTIELLI (Coordinator)

Course mnemonic

GEOL-F211

ECTS credits

5 credits

Language(s) of instruction

French

Course period

Second term

Course content

Introduction to Magmatic Petrology (magma *vs.* melt, extrusive *vs.* intrusive rocks, modal *vs.* normative compositions, alkaline *vs.* tholeiitic *vs.* calco-alkaline series, ...); Emplacement and field relationships of Igneous structures; Introduction to Magmatic Differentiation (relationships between two- or three-component systems and crystallisation sequences and textures); Introduction to Metamorphic Petrology (metamorphic agents, limits of metamorphism, types of metamorphism, ...); Introduction to Silicate Mineralogy; Introduction to Optical Microscopy.

Objectives (and/or specific learning outcomes)

Main objectives (Course and labworks): Knowledge of the Earth's Interior; knowledge of the main types of volcanic and plutonic bodies; knowledge of the main physical and chemical properties of a magma; Ability for characterizing and distinguishing volcanic, plutonic and metamorphic Rocks/Series; Ability to use diagrams of Two-Component and Three-Component Systems; Knowledge of the main Silicate minerals; Ability to identify minerals in thin sections.

Pre-requisites and co-requisites

Courses having this one as pre-requisit

GEOL-F305 | Géodynamique et Pétrologie Magmatique et Métamorphique | 10 crédits and GEOL-F319 | Introduction à la métallogénie et industrie minérale | 5 crédits

Course having this one as co-requisit

GEOL-F301 | Minéralogie | 5 crédits

Teaching method and learning activities

The course is associated to labworks and one day fieldtrip. During the labworks, the students perform exercices, and macroscopic and microscopic observations of rock samples, and studies of thin sections with polarizing microscope (additional reference books are also used).

References, bibliography and recommended reading

Robin Gill, Igneous Rocks and Processes, 2010, Wiley-Blackwell, 428pp. - ISBN: 978-0-6320-6377-2

Other information

Contact(s)

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Evaluation method(s)

Other

Evaluation method(s) (additional information)

Course exam: oral exam

Labworks: determination of minerals and rocks in thin sections with the polarizing microscope

Determination of the mark (including the weighting of partial marks)

Course exam: 60%

Labworks and excursion: 40%

Main language(s) of evaluation

French

Programmes

Programmes proposing this course at the faculty
of Sciences

BA-GEOG | Bachelor in Geography : General | unit 2 and unit 3 and

BA-GEOL | Bachelor in Geology | unit 2

