

UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze della Terra e del Mare
ACADEMIC YEAR	2022/2023
BACHELOR'S DEGREE (BSC)	NATURAL AND ENVIRONMENTAL SCIENCE
SUBJECT	PETROGRAPHY
TYPE OF EDUCATIONAL ACTIVITY	В
АМВІТ	50175-Doiscipline di scienze della Terra
CODE	05668
SCIENTIFIC SECTOR(S)	GEO/07
HEAD PROFESSOR(S)	SCOPELLITI GIOVANNA Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	98
COURSE ACTIVITY (Hrs)	52
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	2
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	SCOPELLITI GIOVANNA
	Tuesday 15:00 16:00 Via Archirafi 36, II piano, stanza II-4

PREREQUISITES	Knowledge and mastery of the Mineralogy and Geology courses contents.
LEARNING OUTCOMES	 Acquisition of the needed instruments to identify a rock, including the use of the polarized light microscope. Acquisition of basic knowledge needed to classify a rock. Ability to use a specific petrographic language. Ability to reconstruct the genetic environment of a rock starting from its macro and micro features. Ability to evaluate the results obtained from a petrographic study in terms of implications related to the mineral constituents of the rock and its history. Ability to explain the features of a rock and its petrogenetic environment also to non-experts. Ability to connect in a overview the information obtained by the petrographic features of a rock with the natural processes which it may have underwent.
ASSESSMENT METHODS	Oral exam concerning: 1) identification, under the polarized light microscope, of 1 rock thin section: definition of the texture, optical features of minerals, classification, petrogenesis; 2) discussion on the topics developed during the class by a minimum of 3 open questions (related to igneous, sedimentary and metamorphic rocks, respectively) aimed to verify: (i) the correct use of scientific-technical language; (ii) the ability to develop an autonomous and critical thinking; (iii) the conceptual connection among the different studied topics. The minimum requirements for passing the exam are: (i) identification of the rock in thin section and its geological-petrographic framework; (ii) sufficient knowledge of the three petrogenetic environments and ability to link among them the studied topics.
EDUCATIONAL OBJECTIVES	The aim of the course is to give to the student the instruments to describe and classify a rock and to be able to individuate the genetic environment allow him to evaluate the implications of its history. To this purpose will be illustrated the main methods to study rocks in laboratory and will be defined the most important igneous, sedimentary and metamorphic processes bringing to the rock formation.
TEACHING METHODS	Frontal lessons and identification under the polarized light microscope of the main igneous, sedimentary and metamorphic rocks aimed to reconstruct their genesis.
SUGGESTED BIBLIOGRAPHY	Morbidelli L Le rocce e i loro costituenti. Bardi Editore Mottana A., Crespi R. e Liborio G Minerali e Rocce. Ed. Mondatori Peccerillo A., Perugini D Introduzione alla Petrografia ottica. Morlacchi Editore

SYLLABUS

Hrs	Frontal teaching
2	Course presentation: purposes and methods.
2	The Earth: introductory concepts. Introduction to the Plate tectonics.
2	Reviews on the optical features of the main minerals useful for the rock classification.
6	The extrusive, intrusive and hypabbysal rocks: structures and texture, classification and petrogenesis.
8	Study of the main thermodynamic diagrams for the magmatic systems modelization.
4	The igneous rocks in the different geodynamic environments.
6	The sedimentary rocks: structures and texture, sedimentary environment and petrogenesis.
2	The sedimentary rocks in the study of the palaeoclimatic reconstructions.
4	The metamorphic rocks: structures and texture, kinds of metamorphism.
2	Macroscopic identification of the main igneous, sedimentary and metamorphic rocks.
2	Applied petrography overview: examples of the use of rocks in industry and environmental implications.
Hrs	Practice
2	Identification under the polarized light microscopy of the main intrusive igneous rocks.
2	Identification under the polarized light microscopy of the main extrusive igneous rocks.
2	Identification under the polarized light microscopy of the main clastic sedimentary rocks.
2	Identification under the polarized light microscopy of the main chemical, organic and organogenic sedimentary rocks.
2	Identification under the polarized light microscopy of the main metamorphic rocks from a silica and clay-rich protolith.
2	Identification under the polarized light microscopy of the main metamorphic rocks from a basic or carbonate protolith.