



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze della Terra e del Mare
ACADEMIC YEAR	2023/2024
MASTER'S DEGREE (MSC)	GEORISKS AND GEORESOURCES
SUBJECT	SEDIMENTARY PETROGRAPHY
TYPE OF EDUCATIONAL ACTIVITY	C
AMBIT	21015-Attività formative affini o integrative
CODE	05676
SCIENTIFIC SECTOR(S)	GEO/07
HEAD PROFESSOR(S)	SCOPELLITI GIOVANNA Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	94
COURSE ACTIVITY (Hrs)	56
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

DOCENTE: Prof.ssa GIOVANNA SCOPELLITI

PREREQUISITES	It is required familiarity with the use of polarized light microscope and knowledge of the optic features of the main minerals.
LEARNING OUTCOMES	Acquisition of the needed instruments to identify and classify a sedimentary rock. Ability to use a specific petrographic language. Ability to reconstruct the genetic environment of a sedimentary rock starting from its macro and microscopic features integrated by the geochemical data. Ability to explain the features of a rock and its petrogenetic environment also to non-experts. Ability to connect in an overview the information obtained from the study of a sedimentary rock with the potential economic and industrial applications and within the profession of geologist.
ASSESSMENT METHODS	Oral exam concerning: 1) identification under the polarized light microscopy of 1 thin section of sedimentary rock; 2) discussion on the topics developed during the class by a minimum of 2 open questions 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; (ii) sufficient knowledge of the petrogenesis of the sedimentary rock and ability to link the studied topics.
EDUCATIONAL OBJECTIVES	The aim of the course is to give to the students a wide overview of the sedimentary rocks that are very important for a geologist due their abundance on the Earth surface. During the course will be supply the instruments to describe and classify a sedimentary rock and to reconstruct the petrogenetic environment. To this purpose macro and micro textural features and chemical-mineralogical aspects will be illustrated with the aim to define the main processes involved during their history. Furthermore, the students will be involved in practical activities in classroom and, if possible, in field.
TEACHING METHODS	Frontal and laboratory lessons and, compatible with the CdS economic resources, some laboratory hours (4 to 6) will be used for field activity in form of didactic excursions.
SUGGESTED BIBLIOGRAPHY	Tucker E.M., 2010 – Geologia del sedimentario (tradotto da: Sedimentary Petrography). Flaccovio Editore, Palermo. Tucker E.M., 1996 – Rocce sedimentarie. Flaccovio Editore, Palermo. Adams A.E., Mackenzie W.S., Guilford C., 1988 – Atlante delle rocce sedimentarie al Microscopio. Zanichelli , Bologna. Adams A.E., Mackenzie W.S., 1998 – Carbonate Sediments and Rocks Under the Microscope.

SYLLABUS

Hrs	Frontal teaching
6	Course introduction; hints on the study methods and analytical approach.
4	Sedimentary processes: physical and chemical weathering, sedimentary composition, textures and structures, early and late diagenesis.
2	Soils and residual rocks: chemical features of the formation environment and of the involved substances, classification. Case studies.
6	Clastic rocks as tool for palaeoenvironmental reconstructions and in the evaluation of the anthropogenic impact in recent sediments.
6	Organic rocks and oil-source rocks: characterization, petrogenesis and economic importance.
2	Sedimentary rocks as tool for the study of global perturbation events in the carbon cycle related to the Climate change.
4	Carbonate and siliceous organogenic rocks: diatomite, radiolarite, bioclastic arenite.
4	Chemical rocks: evaporite and travertine. Outline of CO ₂ storage in carbonate sediments.
6	Stromatolites and biomineralizations: composition and formation environments, bacterial mediation processes, linkage with study on the life out the Earth.
Hrs	Workshops
8	Textural features under the polarized light microscope of the main sedimentary rocks.
8	Practice exercises on data processing and, compatible with the CdS economic resources, 4 to 6 hours will be used for field activity in form of didactic excursions.