
COURSE/MODULE: GEOLOGY I MOD. B

ACADEMIC YEAR: 2019-2020

TYPE OF EDUCATIONAL ACTIVITY: Base

TEACHER: Albina Colella

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phone:

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Language: **Italian**

ECTS: 6(lessons n. **4**;
tutorials/practice n. **2**)n. of hours: **56**(lessons n. **32**;
tutorial/practice n. **24**)Campus: **Potenza**Dept.: **Department of Sciences**
Program: **Course in Geological
Sciences (L-34)**Semester: **second****March 04, 2020 -
May 28, 2020**

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The course has the following educational goals:

- 1) Provide a general and integrated view of the Earth dynamics, and the comprehension of large-scale geological processes, such as the sedimentary basins development related to plate tectonics
- 2) The knowledge of sedimentary rocks and their genesis
- 3) The understanding of Stratigraphy and geological time
- 4) The comprehension of global processes such as Earth climate changes, sea-level changes and their records in the sedimentary processes.

Students will be able to acquire the following abilities at the end of the course:

- 1) The comprehension of some of the principal endogenous and esogenous processes of the Earth that form sedimentary basins and control the relationships between tectonics and sedimentation
 - 2) The basic knowledge of processes that form sedimentary rocks and principal depositional systems
 - 3) Describing and recognizing the sedimentary rocks, and applying the classification schemes
 - 4) The acquisition of a clear and reasoned approach to the description of rock outcrops and sedimentary successions, and to their graphical representation throughout stratigraphic logs and 2D correlations;
 - 5) Describing the large-scale stratigraphic unconformities from outcrop data, and understanding their genesis.
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PRE-REQUIREMENTSNone

SYLLABUS

- 1) Introduction on sedimentary processes and depositional systems
 - 2) Sediments and sedimentary rocks: introductory notes on processes of sediment deposition, burial and diagenesis
 - 3) Sedimentary rocks and their classification
 - 4) Rock stratification
 - 5) Sedimentary sequences
 - 6) Sedimentary basins: origin, location and classification
 - 7) Subsidence
 - 8) Relative sea-level changes: climatic and tectonic causes
 - 9) Transgression, regression
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- 10) Introductory notes on stratigraphic unconformities
 - 11) The relative and absolute geologic time
 - 12) The geologic time scale
 - 13) Stratigraphy: concept and principles
 - 14) Notes on the stratigraphic units.

TEACHING METHODS

The course will include lectures, followed by practical training in the classroom and in the field.

EVALUATION METHODS

Two mid-term written examinations on the classification of sedimentary rocks and on other topics will take place in the second half of the course. The final oral exam, regarding the theoretical topics treated in the course, will be integrated with the final examination of the course "Geology I module A". Only students that passed the mid-term examination will be allowed to access the final oral exam.

TEXTBOOKS AND ONLINE EDUCATIONAL MATERIAL

- CAPIRE LA TERRA - Grotzinger John P. & Jordan Thomas H. Terza edizione italiana condotta sulla settima edizione americana, Zanichelli (2016)
- SCIENZA DELLA TERRA. ROCCE E SUCCESSIONI SEDIMENTARIE - Bosellini A., Mutti E. & Ricci Lucchi F., UTET (1989)
- EARTH'S DYNAMIC SYSTEMS - Hamblin W.K. & Christiansen E.H. Decima Edizione, Prentice Hall, Pearson Education (2003)

Powerpoint slides, videos, rock samples and tridimensional geologic models will be used for the practical training.

INTERACTION WITH STUDENTS

Students can interact with the teacher with appointments by phone and/or mail.

EXAMINATION SESSIONS (FORECASTS)

20/01/2020, 10/02/2020, 09/03/2020, 06/04/2020, 11/05/2020, 15/06/2020, 13/07/2020, 07/09/2020, 05/10/2020, 16/11/2020.

SEMINARS BY EXTERNAL EXPERTS : NO
