
COURSE: Geomorphology

ACADEMIC YEAR: 2017-2018

TYPE OF EDUCATIONAL ACTIVITY:

TEACHER: Salvatore Ivo Giano

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Language: **Italian**

ECTS: (lessons e
tutorials/practice) **8**n. of hours: (lessons e
tutorials/practice) **76**Campus: **Potenza**Dept./School: **Dipartimento di****Scienze**

Program:

Semester:

(date) **March 5 to June
15-30**

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

- *The class will treat acquisition by students of cognitive tools for the recognition of current and past landforms of landscape and related morphogenetic processes.*
 - *Students will be able to identify and classify the different natural and anthropic landforms from topographic maps, aerial photo and in the field, and will be able to relating the current and past morphogenetic processes to the landforms so generated.*
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PRE-REQUIREMENTS

Passing Exam of Physical Geography

SYLLABUS

1. Geomorphology and Earth Sciences.

- 1.1 Genesis and evolution of the landforms: basic concepts.
- 1.2 Geomorphological system: historical review and methodologies.
- 1.3 Relationships between Geology, Physical Geography and Geomorphology

2. Structural landforms.

- 2.1 Introduction to structural geomorphology.
- 2.2 Relationships between morphology and geological structures.
- 2.3 Selective erosion processes.
- 2.4 Structural surfaces and relief.
- 2.5 Unadjusted drainage.
- 2.6 Fold belt and relief types.
- 2.7 Fault scarps and slopes.
- 2.8 Land surfaces.

3. Weathering and pedogenesis.

- 3.1 The weathering factors.
- 3.2 Detrital covers, colluvium, and eluvium.
- 3.3 Weathered horizons, regolite, and soils.
- 3.4 Soil development and stratigraphy.
- 3.5 Palaeosols: geological meaning and dating techniques.

4. Slope denudation.

- 4.1 Linear, areal, and punctiform erosion.
- 4.2 Soil creep, solifluction e gelifluction.
- 4.3 Landslides and their classification.
- 4.4 Slope deposits.
- 4.5 Predictive methods of the rocky slope evolution.
- 4.6 Badlands

5. Fluvial morphology.

- 5.1 River bed and valley morphology.
 - 5.2 Longitudinal equilibrium profile.
 - 5.3 Morphometry and fluvial patterns.
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- 5.4 Fluvial capture.
- 5.5 Alluvial deposits.
- 5.6 Fluvial terraces

6. *Glacial morphology.*

- 6.1 Glacier types and glacial landforms.
- 6.2 Alimentation and ablation.
- 6.3 Glacial erosion and transport.
- 6.4 Fluvial-glacial and morenic deposits.
- 6.5 Pleistocene glaciations

7. *Karst morphology.*

- 7.1 General features.
- 7.2 Surface landforms.
- 7.3 Cave systems.
- 7.4 *Tectonic-karst landforms*

8. *Aeolian morphology.*

- 8.1 Transport and erosion in the Aeolian environment.
- 8.2 Erosion landforms.
- 8.3 Depositional landforms: desert coastal dunes
- 8.4 Relict deposits.

9. *Coastal morphology.*

- 9.1 Coastal morphogenetic processes
- 9.2 Low-sloping coasts.
- 9.3 Rocky coasts and cliffs.
- 9.4 Marine terraces.

TEACHING METHODS

Lectures – Lab. Activities – Field trip

EVALUATION METHODS

Final oral examination.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

- *Panizza M. (2014) – Geomorfologia. Pitagora Ed. (IV edition).*
- *Bartolini C. & Peccerillo A. (2002) . I fattori geologici delle forme del rilievo. Pitagora Ed.*
- *Huggett R.J. (2003) – Fundamentals of Geomorphology. Routledge Ed.*

INTERACTION WITH STUDENTS

Tutoring students will be on Thursday, or by previous appointment in other days of the week.

EXAMINATION SESSIONS (FORECAST)¹

March 14; May 16; June 20; July 12; October 3; November 14; December 14;

SEMINARS BY EXTERNAL EXPERTS YES X NO

FURTHER INFORMATION

It is advisable to consult a high-quality geographical atlas and IGMI topographic maps (1: 25,000 scale). It is recommended the study of papers and notes distributed during the course. The participation to the field trip and the practice about the geomorphological interpretation of the topographic maps are both necessary for a complete preparation.

¹Subject to possible changes: check the web site of the Teacher or the Department/School for updates.