

Corso di LM	Scienze e Tecnologie Geologiche
Course:	Structural Geology Techniques
CFU:	6
Semester:	first
Teacher:	Bruno Massa
Lecturers	Ada De Matteo
Office hours	On Monday 10 - 13 and by appointment
Address:	DST Via dei Mulini

PRESENTATION OF THE COURSE:

The class in STRUCTURAL GEOLOGY TECHNIQUE aimed at acquiring specific skills in geological and geophysical data survey, management and processing. A particular care will be devoted to meso-structural and seismological data, useful for the reconstruction of stress and paleo-stress fields. Some modelling techniques will be exposed.

TARGET

- ✓ Knowledge: At the end of the course, students will have acquired advanced knowledge in structural data collection and in their management and processing.
- ✓ Abilità: al termine del percorso formativo, gli studenti saranno abili nell'inversione del dato geologico-strutturale e sismologico, al fine di ricostruire i campi di stress. Saranno in grado di operare procedure di modellazione di processi geologici. They will be able to plan and run simple modelling procedures.

REQUIRED PRACTICES

It is assumed that students have acquired basic geological, structural and geophysical knowledge.

PARTICIPATION TO LESSONS

Strongly recommended. Field activities will be carried out, it would be very useful to join it.

CONTENTS

- I. The deformation of rocks.
- II. Earthquakes.
- III. Seismogenic structures and physical environment.
- IV. The representation of geological structures.

- V. Reconstruction of the stress field
- VI. Regional geology: an overview.
- VII. Modelling of geological processes.

TEACHING METHODS

Frontal lessons (about 5 CFUs) and field activities (about 1 CFU).

REFERENCES

- Cox A., Hart B. R. (1986) -Plate Tectonics: How It Works- Blackwell Publishing.
- Hubbert, M.K., (1937) -Theory of scale models as applied to the study of geologic structures. Bulletin of the geological Society of America, 48, 1459-1520.
- Kearey P. & Vine F.J. - Tettonica globale, Zanichelli.
- Lisle R.J. & Leyshon P.R. - Stereographic projection techniques, Cambridge.
- Pinter N. & Keller E. -Active Tectonics: Earthquakes, Uplift, and Landscape, Prentice Hall.
- Ranalli, G., (2001) -Experimental tectonics: from Sir James Hall to the present. Journal of Geodynamics 32, 65-76.
- Scholz C.H. - The Mechanics of Earthquakes and Faulting, Cambridge.
- Twiss & Moores -Structural Geology - Freeman & Company.
- Further information on the most suitable bibliographic sources for exam preparation will be provided during the course. The most part of the recommended bibliographic material can be found at the DST Library located at Via dei Mulini (Benevento). Online catalog at the following URL:
<http://polosbn.bnnonline.it/SebinaOpac/Opac?sysb = NAP04>

EXAMINATION

The exam will be performed in two phases. The first phase takes about ten minutes, the candidate will be required to project a complete attitude of a fragile structure, the result will be adequately commented (evaluation: admitted or not admitted to the next stage). The second phase consists of a discussion developed by the candidate in response to specific questions from the Commission, obviously on subjects summarized in the teaching program. The final evaluation will take into account the relevance of the answers, the content quality, the skill to link with other topics covered by the program, the ability to bring examples, the technical language property, and the candidate's overall expressive skills.

EXAMS DATE

Link

TECNICHE DI GEOLOGIA STRUTTURALE

Topics	Ours	References	Kind of lesson
<p>I. The deformation of rocks.</p> <p>II. Earthquakes.</p> <p>III. Seismogenic structures and physical environment.</p> <p>IV. The representation of geological structures.</p> <p>V. Reconstruction of the stress field</p> <p>VI. Regional geology: an overview.</p> <p>VII. Modelling of geological processes.</p>	45	<p>Cox A., Hart B. R. (1986) -Plate Tectonics: How It Works-Blackwell Publishing.</p> <p>Hubbert, M.K., (1937) -Theory of scale models as applied to the study of geologic structures. Bulletin of the geological Society of America, 48, 1459-1520.</p> <p>Kearey P. & Vine F.J. - Tettonica globale, Zanichelli.</p> <p>Lisle R.J. & Leyshon P.R. - Stereographic projection techniques, Cambridge.</p> <p>Pinter N. & Keller E. -Active Tectonics: Earthquakes, Uplift, and Landscape, Prentice Hall.</p> <p>Ranalli, G., (2001) -Experimental tectonics: from Sir James Hall to the present. Journal of Geodynamics 32, 65-76.</p> <p>Scholz C.H. - The Mechanics of Earthquakes and Faulting, Cambridge.</p> <p>Twiss & Moores -Structural Geology - Freeman & Company.</p>	FRONTAL INDOOR
<p>FIELDTRIP AT NAPOLI I.N.G.V.-O.V.</p> <p>FIELDTRIP AT VALLE TELESINA, MONTE CAMPOSAURO</p>	9		FIELD ACTIVITIES