Discipline Information

The following dates are in (dd/mm/yyyy) format.

Code: GMG5827 - 6 Type: POS
Name: Special Topics in Structural Geology
Concentration area: Geotectônica (44141)

Approval dates:
CCP: 11/12/2014 CPG: 12/12/2014 CoPGr:
Activation date: 12/12/2014 Inactivation date:

Workload:
Total: 75 h Theory: 3 h Practice: 1 h Study: 1 h
Credits: 5 Duration: 15 weeks

Professors: 915463 - Ginaldo Ademar da Cruz Campanha - 12/12/2014 until today

Objectives:

The goal of discipline is to address specific methods, techniques and approaches in Structural Geology, especially in applied and quantitative aspects, and its emphasis at each semester will depend on the demand and interest of the students and the faculty staff at the time.

Rationale:

There is a need for a discipline with a flexible structure that allows at each semester the approach of specific topics related to Structural Geology especially on quantitative aspects.

Content:

01. Principles of continuum mechanics. 02. Methods and techniques for the assessment of the deformation of rocks. 03. Methods and techniques for the assessment of the stress tensor in rocks 04. Balanced cross sections and palinspastic reconstructions 05. Computer techniques in Structural Geology and Tectonics 06. Applied Structural Geology

Bibliography:

ALLMENDINGER, R.W., CARDOZO, N., FISHER, D.M. 2012 Structural Geology Algorithms: vectors and tensors. Cambridge University Press. GERYA, T.V. 2010 Introduction to numerical geodynamic modelling. Cambridge University Press, 345 p. MALVERN, L.E.(1969) Introduction to the mechanics of a continuos medium. Englewood, Prentice-Hall . 713p. MEANS, W.D.(1976) Stress and strain: basic concepts of continuum mechanics for geologists. New York, Springer-Verlag. 339p. NYE, J.F. (1957) Physical properties of crystals: their representation by tensors and matrices. Oxford, University Press. 322p. OERTEL, G. (1996) Stress and deformation: a handbook on tensors in geology. Oxford, University Press. 292p. RAGAN, D.M. 2009 Structural Geology: An Introduction to Geometrical Techniques. Cambridge University Press (4a edição). RAMSAY, J.G. (1967). Folding and fracturing of rocks. New York, McGraw-Hill. 568 p. RAMSAY, J.G. (1976) Displacement and strain. Philosophical Transactions Royal Society London, v.283, p.3-25. RAMSAY, J.G.; GRAHAM, R.H. (1970) Strain variation in shear belts. Canadian Journal of Earth Sciences, v.7, p. 786-813. RAMSAY, J.G.; HUBERT, M.I. (1983). The techniques of modern structural geology: strain analysis.

New York, Academic Press. V.1 RAMSAY, J.G.; HUBERT, M.I. (1987) The techniques of modern structural geology: folds and fractures. New York, Academic Press. v.2 RAMSAY, J.G.; LISLE, R.J. (2000) The techniques of modern structural geology: Applications of continuum mechanics in structural geology. New York, Academic Press. v.3 TRUESDELL, C.;TOUPIN, R.A. (1960) The classical field theories. In: FLÜGGE, S. Encyclopedia of Physics - principles of classical mechanics and field theory. Springer-Verlag. v.III/I

Type of Assessment:

Exercises, reports and tests

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