



Discipline Information

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

Code: GMG5821 - 8 Type: POS

Name: Geochronology

Concentration area: Geotectônica (44141)

Approval dates:

CCP: 03/02/2016 CPG: 04/03/2016 CoPGr:

Activation date: 10/03/2016 Inactivation date:

Workload:

Total: 90 h Theory: 3 h Practice: 3 h Study: 3 h

Credits: 6 Duration: 10 weeks

Professors: 93269 - Marly Babinski - 10/03/2016 until today
4863887 - Maria Helena Bezerra Maia de Hollanda - 10/03/2016 until today

Objectives:

To give the basic knowledge of the main radiometric methods through case studies: interpretation and evaluation of isotope data.

Content:

Theory Part: 1. Geological time scale and general concepts (radioactivity, decay constants, half life and isotopes); 2. Analytical techniques and isotope measurements; 3. Principles of geochronology; 4. Radiometric methods: K-Ar e Ar-Ar, Rb-Sr, Sm-Nd, U-Th-Pb. Principles, interpretations and applications; 5. Isotopic Evolution (Sr, Nd and Pb) in the crust-mantle system. Practical Part: Construction of isochron, concordia and isotopic evolution (Sr, Pb e Nd) diagrams as well as age determinations; Exercises of geochronological interpretation.

Bibliography:

DE PAOLO, D.J. (1988) Neodymium Isotope Geochemistry. Cambridge, Springer Verlag, 187p. FAURE, G. (1986) Principles of isotopic geology. New York, John Wiley, 2nd ed., 589p. FAURE, G. & MENSING, T.M. (2005). Isotopes: Principles and applications. New York, John Wiley, 3rd ed., 897p. HERMAN, L. & LUDDEN, J.N. (eds.) (1991) Applications of isotope systems to problems in geology (short course handbook). Toronto, Mineralogical Association of Canada. 498p. (Mineralogical Association of Canada, v.19). DICKIN, A.P. (1995) Radiogenic isotope geology. Cambridge, University Press. 490p. ROLLINSON, H.R. (1993). Using Geochemical data: evaluation, presentation, interpretation. Longman, UK, 352p.

Type of Assessment:

Exam plus exercises, participation on debates and seminars.