INSTITUTE OF GEOSCIENCES, UNIVERSITY OF SÃO PAULO (IGc-USP)
Official Public IGc-USP Notice Nº 20/2023
Date: May 11th, 2023

APPLICATIONS ARE NOW OPEN FOR THE SELECTION PROCESS FOR A PROFESSOR DOCTOR POSITION AT THE DEPARTMENT OF MINERALOGY AND GEOTECTONICS OF THE INSTITUTE OF GEOSCIENCES OF THE UNIVERSITY OF SÃO PAULO.

The Directorate of the Institute of Geosciences of the University of São Paulo (IGc-USP) hereby informs all interested persons that, per the decision reached at the Regular Meeting of the Congregation held on May 10th, 2023, applications are open for 60 (sixty) days, beginning at 8:00 AM (Brasília time, BRT) on May 22nd, 2023 and ending at 5:00 PM (Brasília time, BRT) on July 20th, 2023, for the selection process of titles and examinations to fill one (1) position of Professor Ph.D., in Full-Time Dedication to Teaching and Research (RDIDP in the Portuguese acronym), position Nº 1023713, with a salary of R$ 13,357.25 (thirteen thousand, three hundred and fifty-seven reais and twenty-five cents), within the subject area of Structural Geology and Geological Mapping at the Department of Mineralogy and Geotectonics, under the terms of article 125, § 1 of the General Regulations of USP and the following programmatic themes:

GMG0302 – Structural Geology and Field Practices

1. Primary and tectonic structures in sedimentary and igneous rocks; 2. Stress and deformation in rocks; 3. Brittle deformation: joints and faults; 4. Ductile deformation: folds, foliations and lineations; 5. Orientation of planes in space; 6. Apparent and true thickness and width of layers; 7. Structures on geological maps; 8. Block diagrams; 9. Field notebook notations; 10. Geological maps and profiles; 11. Elements of a geological map; 12. Strike and dip of layers; 13. Brittle and ductile structures and models; 14. Geo-orientation exercises; 15. Interpretation of geological sections; 16. Use of the geological compass; 17. Field practices related to teacher training, focusing on interdisciplinarity and the development of classes to study the environment, for formal and non-formal teaching.

GMG0337 – Structural Geology I: Brittle Regimes and Deformation

1. Definition of Stress and Deformation; 2. Introduction to rheology; 3. Measuring attitudes of planes and lines; 3. Stereographic projection and geometric exercises; 4. Fundamental principles: force and stress; 5. Definition of average, normal, shear and deviatoric stress; 6. Sign convention; 7. Mohr's Circle and its use in Structural Geology; 8. Failure criterion and the Mohr envelope; 9. Rock deformation, definition of the main deformation parameters; 10. The ellipse and the deformation ellipsoid; 11. Flinn diagram; 12. Brittle

tectonics, faults and joints; 13. Riedel system; 14. Kinematic criteria in brittle faults; 15. Deformational mechanisms and introduction to rheology.

GMG0338 – Structural Geology II: Ductile Regimes

1. Folds; 2. Basic folding mechanisms; 3. Linear structures and superposition of folds; 4. Shear zones, geometry and kinematics; 5. Shear zones, mylonites and microtectonics; 6. Structural analysis of geological maps; 7. Regional geometric analysis of deformation; 8. Balancing and restoration of geological sections; 9. Extensional regimes and crustal structures; 10. Extensional regimes and lithospheric structures; 11. Compressive regimes in the lithosphere and associated structures.

GMG0401 – Geological Mapping

1. Theoretical and practical activities about the geology of the area to be mapped, available bibliography, regional geology (magmatism, metamorphism, structural analysis, lithostratigraphy, sedimentary environments, economic geology, etc.); 2. Photointerpretation and treatment of satellite digital images, treatment of field data, petrography, outcrops record, elaboration maps and geological profiles; 3. Discussion, integration of geological information and preparation of reports; 4. Field activities, gathering geological information for the elaboration of the geological map (in a detailed or semi-detailed scale), along geological profiles normal to the area structures; 5. Outcrop description and sampling location on topographical and photographic basis.

GMG0402 – Geotectonics

1. Geotectonics: goals and historical perspective, from continental drift theory to global tectonics; 2. The interior of the Earth: seismic-petrological and rheological subdivision; 3. The boundaries between tectonic plates; definition and quantification of the forces that govern the movement of tectonic plates; 4. Continental and oceanic crustal types: structure, genesis and evolution; 5. Seismotectonics, plate kinematics and tectonic forces; 6. Paleomagnetism and supercontinents; the Wilson Cycle; 7. Sedimentary basins and global tectonics; 8. Mountain chains: accretionary, collisional and intracontinental orogens; 9. Case study of a Neoproterozoic craton and mobile belts (Field trip).

0440002 – Geological Mapping Techniques

1. Foundations of geological cartography; 2. Mapping strategies and techniques, cartographic representation of rocks and geological structures; 3. Mapping scales and map types; 3. Use of abacuses to correct layer dips and scale exaggeration, 4. Techniques for describing typical rocks in the region to be mapped; 5. Field report structure; 6. Geological maps with horizontal, vertical, inclined layers, with unconformity, faults and folds; 7. Three point method; 8. Structural outline of layers; 9. Geological sections 10. Structure of the final field report and organization of field data.

The selection process will be governed by constitutional principles, notably that of impersonality, as well as the provisions of the Statute and the General Rules of the University of São Paulo and the Rules of the Institute of Geosciences of the University of São Paulo.

1. The selection process will be carried out according to objective criteria, in two stages, through the attribution of scores in exams, divided as follows:

   1st stage (eliminatory) – written exam (weight 2)

   2nd stage:

   I) evaluation of the Curriculum Vitae with public proof of argumentation (weight 4)

   II) didactic exam (weight 4)

   § 1º - The call for applicants to take the exams will be published in the Official State Gazette.

   § 2º - Candidates who present themselves after the established time will not be able to take the exams.

   § 3º - The exams mentioned above will be obligatorily carried out in Portuguese.

2. Further information, as well as the full notice, are available in the link https://uspdigital.usp.br/gr/admissao, or in the website of the Institute of Geosciences of the University of São Paulo: https://igc.usp.br/institucional/concursos-publicos/.