

THE INSTITUTE OF GEOSCIENCES, UNIVERSITY OF SÃO PAULO (IGc-USP)**IGc-USP (ATAC) Notice nº 27/2023 on 30/06/2023.**

(Published in DOE (Official Gazette of the State of São Paulo) on 03/July/2023, Executive III, pages. 119 and 120)

APPLICATIONS ARE NOW OPEN FOR THE SELECTION PROCESS FOR A PROFESSOR DOCTOR POSITION AT THE DEPARTMENT OF SEDIMENTARY GEOLOGY AND ENVIRONMENT 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) at this moment informs all interested persons that, per the decision reached the Regular Meeting of the Congregation held on 29/June/2023, applications are open for 90 (ninety) days, beginning at 8:00 AM (Brasília time, BRT) on 06/July/2023 and ending at 5:00 PM (Brasília time, BRT) on 03/October/2023, for the selection process of titles and examinations to fill one (1) position of Doctor (Ph.D.) Professor, in Full-Time Dedication to Teaching and Research (RDIDP in the Portuguese acronym), position Nº 1021818, with a salary of R\$ 14.761,10 (May 2023), within the subject area of Hydrogeology and Management of Contaminated Area, under the terms of article 125, § 1 of the General Regulations of USP and the following programmatic themes:

GSA0312 - HYDROGEOLOGY AND WATER RESOURCES: 1. Basic concepts in hydrogeology: hydraulic properties of soils, sediments, and rocks; types and classification of aquifers. 2. Groundwater movement and Darcy's Law: energies involved in water movement; groundwater flow concept; type of permeability and porosity; water in the unsaturated zone. 3. Hydrogeological cartography: regional and local flow systems; surface water bodies-aquifer interaction; recharge and discharge zones; anthropic and natural interferences in water flow in aquifers. 4. Design, construction, and maintenance of deep tubular wells and quantity and quality monitoring wells: stages of underground collection implementation, well drilling methods, health care, and well contamination. 5. Aquifer tests and hydraulic characterization of abstraction work estimation techniques of the hydraulic characteristics of wells and aquifers, principles of hydraulic drawdown, interference between abstractions, and establishment of optimal flow in wells. 6. Management of the quantity and exploitation of aquifers: aquifer recharge estimates; base flow; hydrological balance of basins; saline intrusion; monitoring of aquifer exploitation, intensive exploitation, and sustainable flow; capture grant. 7. Groundwater geochemistry: physical-chemical water characteristics, water-rock ratio, potability standard, sample collection, and analysis methods. 8. Transport and behavior of subsurface contaminants: sources of contamination, phenomena that control the behavior and transport of chemical substances in miscible and immiscible phases in soils and groundwater. 9. Quality management of groundwater resources: vulnerability of aquifers to contamination, registration of polluting sources, human

and environmental risks, soil and aquifer remediation, monitoring of water and soil quality, groundwater protection strategies, and resource management groundwaters.

GSA0421 – CONTAMINATION OF GROUNDWATER RESOURCES: Hydrological cycle and its environmental, social, and economic functions. Concept of contamination and human activities as sources of contamination of soils, aquifers, and surface water bodies. The transport and behavior of subsurface contaminants include advection, dispersion, retardation, and degradation. The behavior of contaminants in multiphase flows (DNAPL, LNAPL, and salt/freshwater). Traditional and advanced techniques for characterizing contaminated sites. Objectives and strategies for the local and regional characterization of aquifers through monitoring networks. Groundwater and water resource protection management. Valuation of losses in environmental services and groundwater resources.

GSA0423 – HYDROGEOCHEMISTRY: 1. Basic concepts of hydrochemistry: water and its chemical constituents; concentration units. 2. Origin of chemical compounds in water and mineralization mechanisms. 3. Chemical composition of rainwater, surface water, unsaturated zone, and groundwater. 4. Mineral waters: types, classification, and occurrence. 5. Techniques for collecting representative water samples for chemical analysis. 6. Analytical methods, concepts of limits of detection and quantification, quality control, and validation of results. 6. Water quality standards (drinking and environmental). 7. Treatment, representation, and interpretation of analytical data for developing conceptual hydrogeochemical models. 8. Sources of soil and water contamination. 9. Hydrogeochemistry of organic and inorganic contaminants.

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.

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 (eliminary) – 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 DOE (Official Gazette of the State of São Paulo).

§ 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.

§ 4º - In case of doubt or information conflict, the original term published in the DOE will be valid.

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