

CALL FOR APPLICATIONS FOR A POSITION OF ASSISTANT PROFESSOR (PROFESSOR DOUTOR) IN THE DEPARTMENT OF COMPUTER SCIENCE OF THE INSTITUTE OF MATHEMATICS AND STATISTICS OF THE UNIVERSITY OF SÃO PAULO. KNOWLEDGE AREA: **DATA ENGINEERING AND DATABASES**

(NOTE: This is a call for applications, not an official document. The official and legally binding document can be obtained at:

https://drive.google.com/file/d/1S2XdYr6DWGbDXp99Fu03tkBD50sJGMhp/view?usp=drive_link

Applications are open, for a period of 90 (ninety) days, starting at 9:00 a.m. (Brasília time) on 07/02/2025 and ending at 5:00 p.m. (Brasília time) on 09/29/2025, for the public competitive examination for the provision of 01 (one) position of Assistant Professor, with a salary of R\$ 16,353.01 (sixteen thousand, three hundred and fifty-three reais and one cent), at the Department of Computer Science, in the area of **Data Engineering and Databases**, under the terms of Art. 125, paragraph 1, of the USP General Regulations.

The selection process will consist of three parts.

1. **The written examination**, which be based on the syllabus of the course **MAC5861 - Database Modeling**, with the following content: **Data abstraction: classification, composition, aggregation, and generalization. Conceptual, logical, and physical design of structured databases. Active databases. Multidimensional data models. Semi-structured data models. Graph-based data models. Data processing flows. Models for distributed storage and processing of data.**
2. **The teaching examination**, which will be based on the course **MAC0426 - Database Systems** with the following syllabus: **Fundamentals of relational database management system architecture: data storage and indexing; query processing and optimization; transaction management, concurrency control, and recovery from failures. Semi-structured data (e.g., XML and JSON); query languages for semi-structured data. Parallel and distributed databases: basic concepts and distributed transaction processing (three-phase commit protocol). Introduction to non-relational databases, their data models and implementations: key-value databases; column-oriented databases; document-oriented databases; graph-oriented databases. New technologies for managing large-scale data.**
The curriculum (memorial) examination: an oral examination on the candidate's curriculum and research plans

The competition shall be governed by the constitutional principles, notably **the principle of impersonality**, as well as by the **Statute and General Bylaws of the University of São Paulo**, and the **Internal Bylaws of the Institute of Mathematics and Statistics (IME-USP)**.



Application Procedure and Required Documents

Applications must be submitted exclusively online through the portal <https://uspdigital.usp.br/gr/admissao> during the registration period stated above.

Applicants must complete the required personal information and upload the following documents in digital format:

I.A detailed academic and professional curriculum (memorial), including proof of published works, academic activities relevant to the competition, and any other materials that may support the evaluation of the applicant's qualifications.

II.Proof of PhD degree awarded by USP, recognized by USP, or with national validity.

- (Candidates who require recognition of a foreign PhD for functional equivalence must request it in advance from the Graduate Committee of IME-USP, in order to present the valid document before the application deadline.) Contact the Computer science department (secmac@ime.usp.br) for more information

III.Proof of compliance with military service obligations, for Brazilian male candidates.

IV.Electoral compliance certificate or equivalent document issued by the Electoral Court within **30 days** prior to the start of the application period. For Brazilian candidates.

V.Official photo identification document.(valid passport for foreigners)



Additional Notes and Legal Clauses

(§1) Physical materials that cannot be digitized (e.g., models, artworks) must be delivered **by the last business day before the competition begins**.

(§2) **Dropbox, Google Drive**, or similar links will **not** be accepted as proof for curriculum items.

(§3) Defense transcripts without confirmation of PhD degree award (when required by the awarding institution) will **not** be accepted.

(§4) Current USP faculty members are **exempt** from submitting military and electoral compliance documents if already provided upon initial appointment.

(§5) Foreign candidates are **exempt** from items 3 and 4 but must **prove legal status in Brazil**.

(§6) If selected, foreign candidates **must hold a temporary or permanent visa** that allows paid work in Brazil prior to take office.

(§7) Candidates with disabilities must request any necessary adaptations at the time of application.

(§8) It is the **applicant's sole responsibility** to upload all required documents to the correct fields on the online system.

Improper uploads or uploads in the wrong order will result in **disqualification**.

(§9) All documents must be complete (front and back) and fully legible. Incomplete or illegible documents not corrected before the deadline will result in **disqualification**.

(§10) Late submission of documents will **not** be accepted, even on appeal.

(§11–§17) **Affirmative action** policies apply: self-declared **Black, Brown (Pardo), or Indigenous** candidates may opt to participate in the **differentiated scoring system**, subject to verification by an official **racial identification panel (heteroidentification)**.

Specific documentation is required, including the **RANI** (Indigenous Birth Registry) or equivalent declarations, as detailed in the USP General Secretariat's website: [link](#).

(§18) Military compliance documents follow Federal Decree No. 57.654/1966. Male candidates over 45 years old as of Dec 31 of the previous year are exempt.

(§19) Candidates may opt to **take the exams in English**, as per article 37, paragraph 2, of the IME-USP Internal Bylaws.

The exam content will be **identical in both English and Portuguese**.

5. Examination Details

Examination will be conducted in two phases.

Phase I: Written exam (eliminary) - weight 25

Phase II

Written exam - weight 50

Curriculum exam (oral) - weight 25

All candidates should be present at the allocated time. Fail to do so will incur in automatic elimination

5.1 Written Exam:

Candidates will be presented with a list of ten topics, drawn from the official syllabus, 24 hours before the exam. One topic will be randomly selected; candidates will have five hours to complete the exam. A one-hour consultation period with books and reference materials will be permitted at the beginning. Notes made during consultation must be signed by the committee and attached to the final answer. The written exam must be read aloud by the candidate in a public session. Only candidates approved in this phase will be allowed to take the next one.

5.2 Teaching Exam:

Candidates will draw one topic from a list of ten prepared by the committee, based on the official syllabus. They will have 24 hours of preparation before delivering the lecture.

Duration: minimum 40 minutes, maximum 60 minutes. Exceeding time limits will result in penalties (zero if shorter than 40 minutes; interrupted at 60 minutes). The lecture will be open to the public

5.3 Curriculum exams: The evaluation of the candidate's curriculum, expressed as an overall assessment (including both presentation and review), shall reflect the candidate's academic merit. In its evaluation, the committee will take into account:

- scholarly, literary, philosophical, or artistic contributions;
- university teaching experience;
- engagement in community service and outreach;
- professional or other relevant activities, when applicable;
- academic degrees and other honors or distinctions.

6. More examination details

The teaching demonstration will be public, lasting no less than forty and no more than sixty minutes. It shall address topics from the official syllabus of the relevant field of knowledge, in accordance with Article 137 of the General Statute of the University of São Paulo (USP).

- Based on the official syllabus, the examining committee will prepare a list of ten topics, from which candidates will draw lots immediately before the assignment.
- Candidates may challenge a selected topic if they believe it falls outside the official syllabus; the committee will rule on such challenges immediately.
- The teaching demonstration will take place 24 hours after the drawing of topics. During this period, candidates are free to prepare and will not be required to engage in other activities.
- Candidates may use any teaching materials they deem necessary.
- If the number of candidates requires it, they may be divided into groups of up to three (in order of registration) for the purposes of drawing topics and presenting.

- The committee must interrupt the presentation once sixty minutes have elapsed.
- Presentations that conclude before forty minutes will automatically receive a failing grade for that component.

At the conclusion of the examinations, each examiner will assign a final grade to each candidate, calculated as the weighted average of scores from the two phases of evaluation, applying the weighting specified in Section 3 and the differentiated scoring policy described in Section 11 of this announcement.

Grades will range from 0.0 to 10.0, with rounding to one decimal place.

Differentiated scoring (affirmative action) will be applied to self-declared Black, Brown, and Indigenous candidates, as specified below.

1. The adjustment factor (*PD*) is calculated as: $PD = (MCA - MCPPI)$

Where:

- *MCA* is the mean score of the broad competition group (all candidates who passed the minimum requirements and did not opt into the affirmative action category).
 - *MCPPI* is the mean score of candidates who self-declared as Black, Brown, or Indigenous (PPI) and opted into the affirmative action category, excluding ineligible candidates.
 - *PD* is the differentiated score increment applied to each phase for all eligible PPI candidates.
2. Calculations will consider two decimal places. Fractions equal to or greater than 0.5 will be rounded up to the next whole number.
 3. Differentiated scoring applies only to candidates who achieved the minimum required grade.
 4. If no eligible PPI candidates remain after minimum grade requirements, the differentiated scoring will not be applied.
 5. Differentiated scoring will also not apply in cases where *MCPPI* is greater than *MCA*.

7. Results and Appointment

The results of the competition will be announced publicly by the examining committee immediately after the conclusion of evaluations.

Candidates will be considered qualified if they obtain a minimum final grade of seven (7.0) from a majority of examiners.

Each examiner will indicate their choice of candidate based on the grades assigned. The candidate receiving the greatest number of recommendations from the committee will be proposed for appointment.

Appointment is subject to medical clearance by the State Medical Board (DPME), in accordance with Article 47, VI of Law No. 10,261/1968.

Appointments and related administrative procedures will follow Resolution No. 7271 of 2016.

Faculty hired under the *RDIDP* regime (exclusive dedication) must maintain full-time exclusive employment with USP, in accordance with Article 197 of the General Statute.

The competition will have immediate effect, and only the recommended candidate will be nominated for the advertised position.

The appointment will be officially published in the *Diário Oficial do Estado* (State Official Gazette).

For further information, as well as access to all regulations governing this competition, candidates may contact the Academic Affairs Office of the Institute of Mathematics and Statistics at the University of São Paulo, Rua Matão, 1010 – Block A – Ground Floor, Room 33, São Paulo, SP, Brazil.

Telephone: +55 (11) 3091-6104 | Email: ataac@ime.usp.br

Official announcement available at: www.ime.usp.br/concursos

7. Additional Information

The official announcement of examination dates and results will be published in the Official Gazette of the State of São Paulo.

The competition will take place within 30 to 120 days after the approval of applications.

Inquiries may be addressed to the Academic Technical Office of IME-USP:

Address: Rua Matão, 1010 – Block A – Ground Floor, Room 33

Phone: +55 (11) 3091-6104

Email: ataac@ime.usp.br

Website: www.ime.usp.br/concursos

Annex – Justification for the Position

Current Situation of the Department/Area

The Department of Computer Science requires faculty with strong expertise in software development and programming languages. These areas are critical for training students to design modular, adaptable, and testable systems, as well as to work effectively in collaborative environments. The increasing role of Generative Artificial Intelligence further reinforces the demand for solid knowledge in programming languages and engineering practices. Currently, the department lacks sufficient faculty to fully cover this essential area.

General Objective of the Appointment

The selected professor is expected to strengthen research and teaching in software development and programming language design and implementation, filling a critical gap in the department's curriculum. Responsibilities include teaching, supervising students, producing educational materials, conducting research, securing research funding, and engaging in outreach activities.