

**PUBLIC NOTICE ATAc/ICMC/USP Nº. 037/2017**

Applications are invited for public examinations and tests for the position of “Professor with a Doctoral Degree (LEVEL) 1, Reference Ms-3.1, RDIDP (“Integral Scheme Dedication to Teaching and Research”) at the Department of Computer Systems (SSC), at the Institute of Mathematics and Computer Sciences (ICMC) at the University of São Paulo (USP).

The Director of the Institute of Mathematical and Computer Sciences, University of São Paulo hereby informs all those interested that, according to the decision made by the ICMC Congregation on 28.04.2017, will be open from 08:30 a.m. on 08.05.2017 at 5:00 pm on 06.07.2017 applications for the examinations for position of “Professor with a Doctoral Degree (Level) 1, Reference MS-3.1, position/course nº 1233440, with a salary of R\$ 10.670,76 (month/ year), for the Department of Computer Systems, at the ICMC-USP, for the area of knowledge: Area VI: Computer Architecture; Area VII: Hardware Project; Area X: Embedded Systems, in one of lectures SSC0114 – Computer Architecture; SSC0117 – Introduction to Digital Logic; SSC0118 – Digital Systems; SSC0180 – Electronics for Computer Science and SSC0512 – Elements of Digital Logic, in accordance with the General Regulations of USP, the internal Regulations of ICMC and the respective program that follows:

- SSC0114 – Computer Architecture: *Advanced Technologies for processors; RISC and CISC processors; superscalar, vector and pipeline processors; Parallel Architecture: taxonomy, SIMD and MIMD computers, shared and distributed memory, non conventional architectures; Performance of computer architectures.*
- SSC0117 – Introduction to Digital Logic: *Combinatorial circuits, logic functions, logic circuits, algebraic simplification, conjunctive and disjunctive normal forms, Karnaugh maps, decoders, numeric representations, circuits of adders, subtractors and multipliers, multiplexer and demultiplexer.*
- SSC0118 – Digital Systems: *Sequential circuits, flip-flops, registers, serial/parallel and serial/serial converters, synchronous and asynchronous counters, and memory. Finite state machines - FSM. Finite state machine optimization techniques. Design of sequential logic circuits for the execution of binary instructions.*
- SSC0180 – Electronics for Computer Science: *The course is fundamentally experimental and should explore the circuit implementation and measurement of voltage and current values, as well as make use of electric circuit simulators to visualize wave forms. The students will study the effects of the application of current and voltage sources on electric circuits with resistors and the implementation of filtered direct current power sources. The application of transistors as binary switches will be studied, as well as the design of logic functions, such as NOT, AND OR and XOR gates. Transitory effects on the propagation of electrical signals in digital logic circuits will also be considered, such as rising and falling time, fan-out effects, and their waveforms, as well as logic gate and interconnection line signal delays due to associated capacitive values. NMOS and CMOS circuits will be presented and characterized, as well as the effects of frequency and voltage variation.*
- SSC0512 – Elements of Digital Logic: *Number systems and representations; Boolean Algebra and logic gates. Simplification of logical expressions (Karnaugh map) and implementation of the circuits. Notions of combinational and sequential circuits. Logical subsystems: multiplex, demultiplex, decoder, memory, latch, flip-flops, registers and counters.*

Applications will be made exclusively by the link <https://uspdigital.usp.br/gr/admissao>, within the above period. The candidate must submit their application to the Director of ICMC (available to download at [icmc.usp.br/e/f2491](http://icmc.usp.br/e/f2491)) with the following documents:

- I. detailed memorial in which published works must be proved, as well as activities carried out relevant to the public examination and other information which shows assessment of merits, in digital format;
- II. proof that the candidate holds a Doctor's degree, awarded by USP or recognized by USP;
- III. proof of discharge from military service for male candidates;
- IV. voter registration;
- V. voting slip from the last election, proof of payment of a respective fine or proper justification;
- VI. Research project, in digital format, elaborated in the specialties belonging to the "Computer Systems" knowledge area, in one of the following topics: Area VI: Computer Architecture; Area VII: Hardware Project; Area X: Embedded Systems.

Paragraph 1 - Evidential elements of the memorial referred to in item I, such as models, works of art or other materials that can not be digitized, shall be submitted by the last working day preceding the beginning of the contest.

Paragraph 2 - Practicing lecturers at USP will be exempted from the requirement referred to in paragraph III and IV provided that the time of their initial contract has been fulfilled.

Paragraph 3 - Overseas candidates will be exempted from the requirements of Sections III, IV and V and must provide proof that they are of good standing in the country.

Paragraph 4 - Overseas candidates, who have passed the public examination and have been nominated for the position, can only take the position after presenting a temporary or permanent visa, entitling the holder to engage in remunerated activities in Brazil.

Paragraph 5 - Candidates with special needs should state, together with the application for registration, the necessary accessibility conditions for the examinations to be carried out.

Paragraph 6 – Overseas candidates must express the intention to carry out the tests in the English language, together with the application for registration, according to Article 135, paragraph 8 of the General Regulations of USP. The content of the tests carried out in the English and Portuguese languages will be identical (There is no enough time to apply for a certificate attesting to the equivalence of PhD's degree).

Paragraph 7 - In the case where a candidate who does the tests in English is the candidate recommended for the position, he/she must become fluent in Portuguese in 3 years.

Paragraph 8 - It is the applicant's sole responsibility to follow all the steps concerning the public examination in the Official Gazette of the State of São Paulo (Diário Oficial do Estado de São Paulo), Executive Notebook I (Caderno Executivo I), section 'Public examinations' (concursos), subsection 'University of São Paulo'.

2. The registrations will be judged by the Congregation, in its formal aspect, and the decision will be published in a Notice.

Sole Paragraph - The public examination will be held within thirty to one hundred and twenty days after publishing the approval of applications, according to Article 134, sole paragraph of the General Regulations of USP.

3. The tests will be conducted in Portuguese or English and will consist of::

- I. judgment of the memorial with public proof of argumentation, (weight 50);
- II. Didactic test, (weight 25);
- III. Oral test/project (weight 25).

Paragraph 1 - The convocation of the candidate for the tests will be published in the Official Gazette of the State of São Paulo.

Paragraph 2 - The candidate will be automatically excluded from the competition, which will be shown as evidence after the Jury Commission has informed the candidates of the schedule of the tests or that the other tests are delayed.

4. The judgment of the memorial expressed through a global note including argumentation and evaluation.

Sole paragraph – In the judgment of the memorial, the Commission will appreciate:

- I. Scientific, literary, philosophical or artistic production;
- II. University teaching activity;
- III. Activities related to providing services to the community;
- IV. Professional or other activities, when appropriate;
- V. Diplomas and university dignities.

5. The didactic test will be public with a minimum duration of forty and maximum of sixty minutes and will be on the program of tests referred to in Article 137 of the General Regulations of USP.

I - the Jury Commission organizes a list of ten points based on the program of the competition from which the candidates take notice before the draw of the point;

II - the candidate may propose a substitution of points, a set of knowledge of his statements, a process that does not belong to a contest program. The Jury Commission will decide on a substitution;

III - the sortition of the point must be done twenty-four hours before the didactic test, being forbidden for the candidate to waive this period;

IV - The candidate can use the teaching materials needed;

V - if the number of candidates to be required they are divided into groups of maximum three observing a registration order, for the purpose of the sortition of the points and conducting the test.

6. The oral test/project will consist of an argument about the research project presented by the candidate and will have the following objectives:

I. the scientific knowledge and previous experience on the subject proposed by the candidate;

II. The adequacy of the project to the “Computer Systems” knowledge area in the following research topics: Area VI: Computer Architecture; Area VII: Hardware Project; Area X: Embedded Systems.

III. The clarity of the candidate's answers to the proposed questions.

Sole paragraph - Each examiner will have up to 15 minutes to discuss the candidate, ensured the same time for an answer.

7. At the end of the examination of the tests, each candidate will have each examiner a final grade, which will be the weighted average of the marks awarded by them, observing the weights in item 3.

8. The test scores can range from zero to ten, with approximation to the first decimal place.

9. The result of the public examination will be immediately proclaimed by the Jury Commission, in a public session.

10. Candidates will be considered eligible if they obtain, from the majority of the examiners, a minimum final score of seven.

11. The appointment of candidates shall be made by examiner according to the marks awarded by him.

Sole paragraph - In case of a tie, the examiner will make the tie-breaker decision.

12. The candidate who obtains the highest number of indications by the Jury Commission will be proposed for nomination.

13. The possession of the indicated candidate will be subject to the approval of a medical examination carried out by the Department of Medical Expertise of the State - DPME, pursuant to Article 47, VI of Law 10261/68.

14. The appointment of the teacher approved in the contest will be governed by the terms of Resolution 7271 of 2016.

15. The teacher in RDIDP must maintain exclusive employment relationship with USP, under the terms of article 197 of the General Regulations of USP.

16. The public examination will be made effective immediately and will be proposed for nomination only the candidate indicated for the position/course.

17. The candidate will be summoned for office in the Official Gazette of the State of São Paulo.

18. The contracted Professor must be available for teaching classes in the daytime and nighttime periods depending on the needs of the Department.

Further information, as well as the relevant rules for the public examination, is available to those interested at the Academic Assistance at the Institute of Mathematics and Computer Sciences, University of São Paulo at the above address.

São Carlos May 3<sup>rd</sup> 2017.



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Diretor

Revisados os termos em inglês do presente Edital.  
São Carlos, \_\_\_\_/\_\_\_\_/\_\_\_\_

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Prof. Dr. \_\_\_\_\_

Chefe do \_\_\_\_\_