



Information about master course

1. Application period: From September, 01 to October, 10 for admission in March.
2. Selection Schedule
 - Application period: 09/01/2014 through 10/10/2014.
 - Announcement of confirmed applications: 10/14/2014.
 - Partial decision – Step 1 results: 10/17/2014
 - Exame Extra- Muros – Step 2: 10/24/2014
 - Results of Step 2: 12/12/2014
 - Summer school: 12/01/15 through 13/02/15
 - English Language Exam – Step 3: 02/04/2015
 - Final selection result: 02/27/2014
 - Enrollment and beginning of the classes: to be announced.
3. On vacancies and selection process
 - there are thirty (30) vacancies to be filled in the current notice; the Committee of Selection will realize the selection process and the final result will be approved by CPG
 - the selection process comprises four steps:
 - Step 1: applicants are ranked based on an analysis of the provided documents. Classificatory;
 - Step 2: exam named Exame Extra Muros 2015, organized jointly by UFRJ, USP/São Carlos and UFAL. All information pertaining to this exam may be found below in attachment I. Classificatory;
 - Step 3: summer school in real analysis. Classificatory and eliminatory
 - Step 4: Foreign Language Exam (english).
 - After Step1, the Committee of Selection issues a partial verdict: accepted or recommended to realize the step 2;
 - After Step 2, the Committee of Selection issues a partial verdict: accepted or recommended to realize the step 3;
 - After Step3, the Committee of Selection issues a partial verdict: accepted or not accepted;
 - After Step 3 and 4, the CPG issues a final decision.

4. Attachment I, Edital 04/2014 Information concerning the Exame Extra-Muros 2015

In order to participate in the exam Exame Extra-Muros 2015, please visit <https://docs.google.com/spreadsheets> and fill out all requested data.

EXAME EXTRA-MUROS'S CONTENT FOR MASTER 2015:

Sequences and series of real numbers and functions: critérios para convergência. Continuity. Limit of real functions. Continuous and discontinuities functions. Uniform continuity. Diferenciability: derivative and its properties. Mean Value Theorems e conseqüências. Taylor's formula. Riemann Integral. O Teorema Fundamental do Cálculo. Basic concepts of topology (in \mathbb{R}^n): open sets, closed sets, dense sets, perfect sets, convex sets, compact sets. Real and complex vector spaces; base and dimension. Matrix and linear transformations . Kernel and rank. Isomorfis. Eigenvalues and

eigenvectors. Invariant subspaces. Diagonalization of linear operators. Jordan canonic form. Spaces with inner product. Orthogonality. Isometry. Self adjoint operators. Group: definition and examples (linear groups, symmetry, cyclic, dihedral). Subgroups. Coset. Lagrange Theorem. Normal Subgroups and quotient groups. Isomorphism Theorem. Commutative rings: definitions and examples (ring of \mathbb{Z} , Gaussian integers, polynomials). Integrity domain and fields: definitions and examples. Ideals and quotient rings. Isomorphism Theorem.

EXAME EXTRA-MUROS'S CONTENT FOR 2015:

Referências

- [1] RUDIN, W. - Principles of Mathematical Analysis, McGraw-Hill, 1976
- [2] LIMA, E. L. - Curso de Análise, vol. 1, 10ed., Projeto Euclides. Rio de Janeiro: IMPA
- [3] LIMA, E. L. - Álgebra Linear, Álgebra Linear, Rio de Janeiro, IMPA, CNPq, 1996.(Coleção Matemática Universitária)
- [4] ARTIN, M. - Algebra. Prentice-Hall, New Jersey, 1991.
- [5] GARCIA, A. e LEQUAIN, Y. - Álgebra: Um Curso de Introdução. Rio de Janeiro, IMPA, Projeto Euclides, 1988.
- [6] HOFFMAN, K. e KUNZE, R. - Álgebra Linear, 2a. ed., Rio de Janeiro, Livros Técnicos e Científicos 1979.

5. More information: please send e-mail to mtuyako@gmail.com