Disciplina **MCP588**

**Avançando no Tratamento de Dados em Estudo Científico**

**Concentration area:** 5131

**Creation:** 14/03/2019

**Activation:** 14/03/2019

**Credits:** 2

**Workload:**

<table>
<thead>
<tr>
<th>Theory (weekly)</th>
<th>Practice (weekly)</th>
<th>Study (weekly)</th>
<th>Duration</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>20</td>
<td>5</td>
<td>1 week</td>
<td>30 hours</td>
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**Professor:**

Antônio Augusto Barbosa Lopes

**OBJECTIVE:**

“Advances in the management of data in scientific studies” is the advanced version of the discipline MCP-5871 – “Management of data in scientific studies” which constitutes a highly recommended although not mandatory prerequisite. Students applying to attend the present course are assumed to have previous familiarization with basic tools offered in the SPSS Statistical Software, including data base construction and organization, variable definition, selection, structuring and transformation, principal distribution functions and commonly used parameters. Familiarization with basic parametric and non-parametric procedures is also required. The present course is aimed at discussing models (regression and other liner models) that are potentially useful in the analysis of multiple variables, and examining how these models fit to experimental data in practice.

**RATIONALE:**

Students attending the original discipline MCP5871 – “Management of data in scientific studies” suggested the creation of a new discipline that should constitute a step ahead, and include tools that are commonly used to solve problems involving multiple variables. In this sense, the original course MCP5871 should figure out as a highly recommended but not mandatory prerequisite. Keeping the same methodology of the original discipline, the present one was designed to be essentially (hands on).

**CONTENT:**
Day 1. Moving from simple to more complex experimental designs. How do linear models fit to experimental data, and what kind of information can be obtained in return?

Day 2. Regression analysis in strict sense. Prediction and precision. Models used for analysis of multiple variables: parameter obtainment and selection of predictors. The analysis of residuals and its importance in validating the regression. How to deal with...

Day 3. Regression in a broad sense. Moving from classical models of analysis of variance (ANOVA) to the general and generalized linear models. Practical problems and possible solutions.


Day 5. Old and new challenger and paradigms. Sample size in simple and complex experimental designs. What are Bayesian methods of data analysis? The "R" revolution.

**EVALUATION:**

Students will be subjected to practical (written) examination at the end of the course. Individual notebooks with the statistical software used throughout the course is required for the evaluation.

**BIBLIOGRAFIA:**


**Idiomas ministrados:**

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