PLANO DE ENSINO

Unidade Universitária:
Centro de Ciências Biológicas e da Saúde

Programa de Pós-Graduação:
Ciências do Desenvolvimento Humano

Curso:
☒ Mestrado Acadêmico ☐ Mestrado Profissional ☒ Doutorado

Disciplina

Hands-on introduction to statistics and psychometric techniques

Professor (es):

Prof. Dr. Alexandre Luiz de Oliveira Serpa

Observação:

Carga horária: **48 h/a**	**Créditos** **04**	☐ Obrigatória ☒ Optativa ☐ Eletiva

Ementa:

This course is designed to train students in the application of statistical and psychometric analysis methods to deal with specific research issues. With a focus on practical skills, it involves a step-by-step notebook approach where students execute and interpret analyses using provided code snippets. Each step includes critical questions to facilitate the understanding of the results in relation to the proposed problem. Analyses will utilize public databases and be conducted in R and/or Python using RStudio. This hands-on lab course is suited for learners eager to apply data analysis in research problems.

Conteúdo Programático:

- Introduction to R and RStudio
- Classical Test Theory analysis
- Exploratory and Confirmatory Factor analysis
- Item Response Theory analysis
- Structural Equation Modelling analysis
- Computational Psychometrics analysis

Critério de Avaliação

Segundo Regulamento Geral da Pós-Graduação Stricto Sensu, Art. 98, "Será considerado aprovado o aluno que obtiver, em cada disciplina obrigatória, optativa e nas atividades programadas o conceito final "A", "B" ou "C", conforme relação de conceitos a seguir:
I - A – excelente: corresponde às notas no intervalo entre os graus 9 e 10;
II - B – bom: corresponde às notas no intervalo entre os graus 8 e 8,9;
III - C – regular: corresponde às notas no intervalo entre os graus 7 e 7,9;
IV - R – reprovado: corresponde às notas no intervalo entre os graus 0 e 6,9."

Evaluation 1: Classroom exercises.

Evaluation 2: Final individual practice exercise report.

Final grade: Sum of evaluation 1 and 2.

Bibliografia Básica:

- Brown, A. (2024). Psychometrics in exercises using R and RStudio. E-book. Available at https://bookdown.org/annabrown/psychometricsR/

- Chang, W. (2024). R graphics cookbook (2nd edition). O'Reilly. E-book. Available at https://r-graphics.org/

- Navarro, D. (2019). Learning statistics with R. E-book. Available at https://learningstatisticswithr.com/

Bibliografia Complementar:

- Epskamp, S., & Fried, E. I. (2018). A tutorial on regularized partial correlation networks. *Psychological Methods, 23*(4), 617–634. https://doi.org/10.1037/met0000167

- Hevey, D. (2018). Network analysis: A brief overview and tutorial. *Health Psychology and Behavioral Medicine, 6*(1), 301–328. https://doi.org/10.1080/21642850.2018.1521283

- Jobst, L. J., Bader, M., & Moshagen, M. (2021). A tutorial on assessing statistical power and determining sample size for structural equation models. *Psychological Methods 28*(1), 207-221. https://doi.org/10.1037/met0000423

- Wickham, H., Navarro, D., & Pedersen, T. L. In press. ggplot2: elegant graphics for data analysis (3rd edition). Available at https://ggplot2-book.org/