**Title of the course:Advanced statistics and data analysis**

**Course code: PSYM21-101**

**Head of the course: Urbán Róbert**

**Academic degree: DSc**

**Position: Professor**

**MAB status: A (T)**

**Az oktatás célja angolul:**

**Aim of the course:**

The course introduces the most common multivariate analyses employed in psychology. This course provides students with a working knowledge of the basic concepts underlying the most important multivariate techniques, with an overview of current applications.

Learning outcome, competences

knowledge:

students will understand the most frequently used multivariate statistical analyses in psychological research and their practical applications and applicability.

students are expected to know the assumptions of the most frequently used multivariate statistical analyses

students are expected to know how to report the learned analyses in APA format

students are expected to be aware of the limitations of the learned analyses

attitude:

students are expected to gain confidence in making their own decisions about statistical procedures

students are expected to think creatively and flexibly while applying the learnt knowledge in practice

skills:

We aim to prepare students for using their statistical knowledge flexibly and composing their MA theses.

Students acquire the judicious selection of analyses, with the applicability and the appropriate interpretation of them.

autonomy, responsibility:

Students are able to interpret and apply the learned statistical methods on their own

Statistical knowledge the students acquire should be applied in a responsible and ethical way when conducting research or interpreting the relevant literature.

**Az oktatás tartalma angolul:**

Content of the course

Topics of the course

Basic statistical concepts and available statistical softwares

Statistical inference, effect size, and power, resampling methods, basic statistical tests (t-test, correlation)

Statistical modelling, Linear regression

Crosstabs, Odds ratios, Logistic regression models

Basics of General Linear Modeling

Mediation and path analysis

Analysis of moderation

Principal component analysis and exploratory factor analysis

Structural equation modelling and confirmatory factor analysis

Item-Response Theory, Classic and Modern Psychometrics

Cluster analysis and latent profile analysis

ANOVA and ANCOVA

Reporting results, data visualization, APA style, tables

Learning activities, learning methods

The online lecture introduces the concepts. Lectures are complemented with PowerPoint presentations, written handouts and recommended readings.

Interactive seminars help to deepen the knowledge of applications of the statistical methods.

**A számonkérés és értékelés rendszere angolul:**

Evaluation of outcomes

Learning requirements, mode of evaluation, and criteria of evaluation:

The grade corresponds to the result of the course exam that must be passed

mode of evaluation: exam mark

5-point grading scale, based on the scores achieved in percentage

criteria of evaluation:

GRADING based on scores achieved:

0-50 % = 1 (failed)

51-65 % = 2 (passed)

66-79 % = 3

80-89 % = 4

90-100 % = 5

**Idegen nyelven történő indítás esetén az adott idegen nyelvű irodalom:**

Reading list

Compulsory reading list

Field A. (2018). *Discovering Statistics Using IBM SPSS Statistics 5th edition,* Sage Publications

Recommended reading list

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.). Boston: Pearson Education.

Brown, T. A. *(2006). Confirmatory Factor Analysis for Applied Research,* The Guilford Press*,* 40-156*.*

**Course-specific information (specific to a given lecture or seminar)**

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| **General data** |

**Specific (sub)title of the course (if relevant):**

**Specific (sub)code of the course (if relevant):**

**Date and place of the course:**

**Name of the lecturer:**

**Department of the lecturer:**

**Email of the lecturer:**

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| **Specific syllabus/schedule of the lecture/seminar (if relevant)** |



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| **Further specific information (eg. requirements) (if relevant)** |