Scientific Writing Certificate Course

The "Scientific Writing" certificate course is designed to equip participants with comprehensive skills in scientific writing, from searching and citing scientific articles to structuring research papers, performing statistical analysis, creating figures, and delivering effective scientific presentations. The course comprises 5 sessions, each with specific learning objectives and performance assessments.

Sessions and Learning Objectives

Session 1: Types, Searching, and Citing Scientific Articles

Learning Objectives:

- Understand different types of scientific articles and their characteristics.
- Learn systematic literature search and management using Mendeley.
- Ability to create and format a literature reference list according to journal guidelines.

Method: Expert lectures in three groups focusing on subtopics (a, b, and c).

Performance Assessment: Presentation with standalone slides; provision of slides to participants, Use of Mendeley; uploading text with different citation styles, e.g. APA, Chicago, Vancouver

Session 2: Structure of a Research Article

Learning Objectives:

- Learn the structure of a research article (Introduction, Methods & Materials, Results, Discussion, Conclusion).
- Transfer plans into the appropriate structure of a research article.

Method: Independent research by students based on competencies acquired in Session 1.

Performance Assessment: Individual task to create a table outlining their planned paper, with bullet points for each section (Introduction, M&M, Results, Discussion, Conclusion).

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Prof. Dr. Beate Brand-Saberi
Dr. rer. nat. Morris Gellisch

Session 3: Statistics in Research

Learning Objectives:

- Learn to create descriptive statistics using R.
- Apply R code independently for statistical analysis.
- Understand and perform various statistical tests (two-group comparison, comparison of three or more groups, mixed ANOVA).

Method: Introduction to R by instructor, followed by group work on sample datasets using R for descriptive and test statistics.

Performance Assessment: Presentation of R code and results.

Session 4: Creating and Processing Figures

Learning Objectives:

- Learn to program figures in R.
- Use advanced image processing software for further processing steps.
- Format figures according to journal guidelines.

Method: Introduction to figure creation in R and image processing programs by instructor, followed by independent work.

Performance Assessment: Presentation of a figure programmed in R and further processed.

Session 5: Scientific Talking

Learning Objectives:

- Learn principles of effective scientific presentations.
- Develop skills in organizing and delivering a scientific talk.
- Practice engaging with an audience and handling questions.

Method: Lectures on presentation techniques, followed by practice sessions and peer feedback.

Performance Assessment: Delivery of a scientific presentation.

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