Universidad de Navarra

Scientific Communication and Publishing in Biomedical Research

Teaching guide 2026-27

PRESENTATION

Course description:

This course offers a practical and comprehensive guide to scientific communication, bridging the gap between research and the dissemination of its results. The course will provide students with the fundamental knowledge and skills to independently publish scientific research articles, deliver oral presentations, and navigate professional communication environments, such as grant proposals and science outreach.

- **Degree:** Master's Degree in Biomedical Research
- **Module:** Module I – Specialization in Basic Aspects
- **ECTS**: 2
- **Course schedule:** Check the schedule on the Master's website.
- **Subject Type:** Mandatory
- **Language**: English
- **Professors:** M. Pilar Lostao, course director (plostao@unav.es) Dept. Nutrition, Food Science and Physiology; Javier Carmona (fjcarmona@external.unav.es)

LEARNING OUTCOMES (LO)

LO4 - Ability to communicate conclusions, as well as the underlying knowledge and rationale, to both specialized and non-specialized audiences clearly and unambiguously.

LO11 - Possess critical thinking skills for both reading biomedical scientific literature and interpreting experimental results.

LO12 - Communicate biomedical research topics or data orally and with ease, in both Spanish and English, considering the target audience.

LO13 - Write various types of biomedical research papers correctly, precisely, and with a well-organized structure.

LO15 - Understand the ethical principles governing biomedical research to be able to apply them when designing, performing, publishing, and evaluating biomedical experimentation.

LO16 - Master the oral and written expression tools and techniques specific to scientific language in biomedicine to apply them throughout the Master's program.

SYLLABUS

Lesson 1. Introduction (AF1)

- Communicating science
- A historical perspective of scientific publishing
- Differences between oral presentations and written communications.
- How to write scientific English

Lesson 2. Publishing system and publishers, the role they play in the dissemination of scientific results (AF1)

- Structure and types of scientific journals
- Types of scientific articles and journal sections
- Publishing models (subscription vs open access)
- Transformative journals. Continuous Article Publication (CAP)
- Article processing charges and the “business side” of publishing

- Research evaluation metrics (e.g., impact factor, h-index, etc)
- Editorial roles within scientific journals

Lesson 3. Writing and submitting a scientific article (AF1)

- Scientific storytelling: developing a research narrative, structuring ideas, identifying central message of an article
- Authorship and contributions: guidelines/criteria, responsibilities
- Structure of a scientific article: (lo sombreado en Amarillo no lo pondría en la guía pues es demasiado detallado)
- The submission process: cover letter, submission package, selecting the right journal, presubmission inquiries
- Peer-review and editorial decisions
- Role of editors and reviewers
- Novelty and impact of a paper
- Types of peer-review
- How to respond to reviewers' comments
- Managing rejection and planning next steps

Lesson 4. Ethical aspects in publishing (AF1)

- Reproducibility and transparency
- Integrity challenges in scientific publishing
- Predatory journals and paper mills
- Plagiarism and self-citations

Lesson 5. Open Science and AI tools (AF1)

- AI tools in scientific writing
  - Overview of generative AI tools and applications: literature search, writing, summaries
  - Risks of AI use in research communication
  - AI hallucinations
  - Responsible use of AI in scientific writing
- Open Science principles
  - Open access publishing
  - Preprints and rapid dissemination
  - Open data and FAIR principles
  - Open peer review and post-publication review
  - Changing models of scholarly publishing

Lesson 6. Types of Oral Scientific Communication (AF1)

- The classic oral presentation
- Congress short communication
- Elevator pitch
- Poster presentations
- Presenting at lab meetings
- Presenting Master's theses

Lesson 7. Communicating science beyond manuscripts and oral communications (AF1)

- Writing a predoctoral fellowship grant application
- Career transitions:
  - Interacting during conference sessions
  - Press Release

LEARNING ACTIVITIES AND CREDITS/HOURS DISTRIBUTION

(2 ECTS, 50 h)

I. In-class 19 h

1. Theoretical classes (AF1) 15 h

Lectures given by the professor on the lessons in the syllabus with the help of the blackboard and power point presentations.

2. In-person practical classes (AF4) 4 h

Individual and group activities to put into practice what have been taught during the lectures. The activity "Abstract evaluation" will be assessed for the final grade of the course.

II. Independent work (AF5) 31 h

1. Preparation of the elevator pitch, which will be presented in class.

2. Preparation of the intermediate research project report.

By January 15th, students will have to complete, in English, an intermediate project report of their own master's research project. The report should follow the rules and principles of scientific writing learned during the course

ASSESMENT

- Intermediate research project report (written assesment) 50%
- "Abstract" evaluation (written assesment) 20%
- Elevator Pitch (oral assesment) 30 %

The three assessment activities will be graded following the guidelines and criteria explained in the classes.

Criteria to pass the course

Students whose final grade is 5 points or more (out of 10) will pass the course. Students whose final grade is below 5 points will not pass the course and will be graded as *Suspenso*.

Special assessment

Students who do not pass the course in May will be able to repeat the activity, out of the three that make up the final grade, that they did not pass in June.

OFFICE HOURS

By appointment via email:

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BIBLIOGRAPHY AND RESOURCES

Teaching materials, web links, and additional resources will be available via ADI.