



COURSE DESCRIPTION CARD - SYLLABUS

Course name

SCIENCE COMMUNICATION [S5SD1>KN]

Course

Proposed by Discipline

–

Year/Semester

3/5

Level of study

Doctoral School

Course offered in

English

Form of study

full-time

Requirements

elective

Number of hours

Lecture

4

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

0

Number of credit points

4,00

Coordinators

dr hab. inż. Bartosz Walter prof. PP
bartosz.walter@put.poznan.pl

Lecturers

dr hab. inż. Bartosz Walter prof. PP
bartosz.walter@put.poznan.pl

Prerequisites

Students should: ** be able to define the problem, purpose, and principal findings of their research; ** possess basic information-search and critical-analysis skills; ** have sufficient command of English to use scientific and popular science materials; ** have their own research topic or a selected scientific issue that can be used during practical exercises.

Course objective

The course should: ** prepare doctoral students to communicate scientific knowledge to different groups of non-specialist audiences; ** develop the ability to present complex topics in a clear, engaging, and scientifically accurate manner; ** teach students how to adapt language, information scope, and communication format to the needs of the audience; ** develop the ability to construct narratives about research problems, research processes, and findings; ** prepare students for public speaking, media engagement, and communication in digital environments; ** foster responsibility for the social consequences of science communication;

Course-related learning outcomes

P8S_WK/SzD_W07 (A doctoral student knows and understands basic principles of knowledge transfer to the economic and social sphere as well as those of commercialization of results of scientific activities and know-how related to these results)

P8S_UK/SzD_U05 (A doctoral student can share results of scientific activity also in a popular form)
P8S_KO/SzD_K04 (A doctoral student is ready to fulfill the social obligations of researchers and creators)

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The grading will include the following components:

- A. Final 60–90-second recorded statement (60%).
- B. Reflection on the improvement between the first and final recordings (30%)
- C. Peer feedback (10%)

Programme content

The course will cover how to communicate science to non-expert audiences using various formats. We will discuss different types of audiences, their needs and expectations, and review formats for communicating science to them.

The practical part will focus on recording short videos presenting an arbitrary topic to a selected audience.

Course topics

A. Foundations:

- ** The purpose and social significance of science communication.
- ** Differences between scholarly, expert, educational, and popular science communication.

B. Understanding and Engaging the Audience

- ** Identifying audience groups and their information needs.
- ** Adapting language, information scope, and communication format.
- ** Using questions, examples, and analogies.

C. Translating Specialised Content into Accessible Language

- ** Identifying jargon, technical terminology, and excessively complex structures.
- ** Explaining concepts through examples, metaphors, and analogies.
- ** Simplifying content without compromising scientific accuracy.
- ** Expressing the principal message in a single sentence.
- ** Preparing descriptions of research at different levels of detail.

D. Storytelling

- ** The narrative structure of a research story.
- ** Problem, protagonist, conflict, inquiry, and resolution.
- ** Using examples, case studies, and personal experiences.
- ** Combining emotional engagement with scientific integrity.
- ** Common narrative errors in science popularisation.

E. Oral Presentation of Science

- ** The structure of a popular science talk.
- ** Presenting research in short formats, such as a three-minute research presentation.
- ** Opening and closing a presentation.
- ** Using voice, speaking pace, and non-verbal communication.
- ** Managing presentation anxiety and time limitations.
- ** Answering audience questions and responding to criticism.

F. Responsibility and Ethics in Science Popularisation

- ** Accurately presenting research findings, limitations, and uncertainty. Distinguishing between correlation, causation, and speculation.
- ** Communicating negative and inconclusive findings.
- ** Responding to misinformation and pseudoscience.
- ** The social responsibility of scientists acting as experts.

Teaching methods

The course will use the interactive workshop format, which focuses on live interaction with the participants

and their direct engagement in discussion. It will be accompanied by elements of lectures, group work, and practical exercises, with recordings of short presentations.

Bibliography

Basic:

O. Bergman, S. Park, J. Bagniewska: The communicating scientist. A practical handbook. Springer Verlag, 2025

M. Burchi, B. Trench (eds.). Routledge Handbook of Public Communication of Science and Technology (3rd ed.). Routledge, 2021.

N. Osica, W. Niedzicki: Sztuka promocji nauki. OPI, 2017 (https://opi.org.pl/opi_publication2/sztuka-promocji-nauki/)

Additional:

M. Fikus: Popularyzacja nauki. Dla kogo, przez kogo, jak i dlaczego?. PAUza Akademicka, nr 12. (2008)

H. Gawel: Komunikacja naukowa 3.0 – nowe formuły komunikowania nauki dla naukowców i popularyzatorów nauki, UJ, 2021.

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	4	0,00
Doctoral student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation)	21	1,00