

**COURSE OFFERED**

|                           |         |                              |
|---------------------------|---------|------------------------------|
| <b>Name of the course</b> | Polish  | <b>Komunikacja naukowa</b>   |
|                           | English | <b>Science communication</b> |

**1. LOCATION OF THE COURSE OF STUDY WITHIN THE EDUCATION SYSTEM**

|                                                     |                                                                                                     |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>1.1. Section<sup>1</sup></b>                     | Exact and Natural Sciences                                                                          |
| <b>1.2. Discipline<sup>2</sup></b>                  | Biological Sciences, Chemical Sciences, Physical Sciences, Earth and related Environmental Sciences |
| <b>1.3. Type of education</b>                       | Stationary                                                                                          |
| <b>1.4. Level of education</b>                      | Doctoral School                                                                                     |
| <b>1.5. Person preparing the course description</b> | Prof. Andrzej Wójcik                                                                                |
| <b>1.6. Contact</b>                                 | <a href="mailto:andrzej.wojcik@ujk.edu.pl">andrzej.wojcik@ujk.edu.pl</a>                            |

**2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY**

|                                        |                                        |
|----------------------------------------|----------------------------------------|
| <b>2.1. Type of course<sup>3</sup></b> | specialized subjects in the discipline |
| <b>2.2. Language of the course</b>     | English                                |

**3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY**

|                                             |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3.1. Type of classes<sup>4</sup></b>     |                      | Exercises                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>3.2. The number of hours<sup>5</sup></b> |                      | 10h exercises                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>3.3. Location of classes</b>             |                      | Classes in the UJK teaching room                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>3.4. Type of assessment</b>              |                      | Pass with grade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>3.5. Didactic methods</b>                |                      | discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>3.6. Literature</b>                      | <b>basic</b>         | <a href="https://en.wikipedia.org/wiki/Science_communication">https://en.wikipedia.org/wiki/Science_communication</a><br><a href="https://www.pnas.org/doi/full/10.1073/pnas.1317504111">https://www.pnas.org/doi/full/10.1073/pnas.1317504111</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                             | <b>supplementary</b> | <a href="https://link.springer.com/article/10.1007/s00411-018-0763-4">https://link.springer.com/article/10.1007/s00411-018-0763-4</a><br><a href="https://pubmed.ncbi.nlm.nih.gov/32463798/">https://pubmed.ncbi.nlm.nih.gov/32463798/</a><br><a href="https://www.google.com/url?sa=t&amp;source=web&amp;rct=j&amp;opi=89978449&amp;url=https://www.ipcc.ch/site/assets/uploads/2018/05/uncertainty-guidance-note.pdf&amp;ved=2ahUKEwjy4JTRuM6PAxUcExAIHQZsIR8QFnoECA5QAQ&amp;usg=AOvVaw3qMhHmFhglB_7FUPqTHH9">https://www.google.com/url?sa=t&amp;source=web&amp;rct=j&amp;opi=89978449&amp;url=https://www.ipcc.ch/site/assets/uploads/2018/05/uncertainty-guidance-note.pdf&amp;ved=2ahUKEwjy4JTRuM6PAxUcExAIHQZsIR8QFnoECA5QAQ&amp;usg=AOvVaw3qMhHmFhglB_7FUPqTHH9</a> |

<sup>1</sup> Section of Humanities; Social Sciences, Section of Exact and Natural Sciences, Section of Medical and Health Sciences, Section of Arts.

<sup>2</sup> History, Linguistics, Literary Studies, Medical Sciences, Health Sciences, Political and Administrative Sciences, Legal Sciences, Security Sciences, Pedagogy, Communication and Media Studies, Management and Quality Studies, Biological Sciences, Chemical Sciences, Physical Sciences, Earth and related Environmental Sciences, Visual Arts and Artwork Conservation, Musical Arts.

<sup>3</sup> General courses, domain specific subjects in the section, disciplinary subjects in the sections, specialized subjects in the discipline.

<sup>4</sup> Classes, lecture, seminar.

<sup>5</sup> Consistent with the education program at the Doctoral School  
Jan Kochanowski University in Kielce.

#### 4. OBJECTIVES, SYLLABUS CONTENT AND INTENDEND LEARNING OUTCOMES

|                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.1. Course objectives (including the form of classes)                                                                                                |
| <b>C1.</b> Gaining knowledge of the problem of communicating scientific questions and research results.                                               |
| <b>C2.</b> Training in communicating scientific questions and research results.                                                                       |
| 4.2. Syllabus content                                                                                                                                 |
| <b>Lectures</b>                                                                                                                                       |
| 1. The forms of communication to experts: publications and scientific meetings.                                                                       |
| 2. The forms of communication to laymen and stakeholders.                                                                                             |
| 3. Communicating risks associated with exposure to carcinogens.                                                                                       |
| 4. Communicating uncertainties related to risks.                                                                                                      |
| <b>Classes</b>                                                                                                                                        |
| PhD students will prepare exercises (single or in groups) where they will train presenting a research topic to experts (other scientists) and laymen. |

#### 5. SUBJECT LEARNING OUTCOMES

| Learning outcomes         | A doctoral student who has passed the subject:                                                                                                                                                                                                                                   | Reference to the learning outcomes of Doctoral School (according to the training program at the Doctoral School) |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| in the area of KNOWLEDGE: |                                                                                                                                                                                                                                                                                  |                                                                                                                  |
| W01                       | The doctoral student has advanced knowledge of teaching methodologies for conducting classes at a higher education institution.                                                                                                                                                  | SD_W05                                                                                                           |
| in the area of SKILLS:    |                                                                                                                                                                                                                                                                                  |                                                                                                                  |
| U01                       | The doctoral student is skilled in presenting research findings or project outcomes through oral presentations and written works, adhering to methodological, copyright, and ethical principles, as well as initiating scientific debates in international project environments. | SD_U05                                                                                                           |

|                                          |                                                                                                                                                                                                                                                                                    |        |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| U02                                      | The doctoral student can disseminate research results or project outcomes through oral presentations and written works.                                                                                                                                                            | SD_U06 |
| <b>in the area of SOCIAL COMPETENCE:</b> |                                                                                                                                                                                                                                                                                    |        |
| K01                                      | The doctoral student can critically analyze their own contribution to the development of the discipline in which the doctoral dissertation is being prepared, as well as evaluate the scientific, or project-related achievements of other researchers, or in the same discipline. | SD_K01 |
| K02                                      | The doctoral student can independently conduct scientific research or project activities, adhering to the principles of public ownership of research results or project outcomes and ensuring intellectual property protection.                                                    | SD_K05 |

## 6. METHODS OF ASSESSMENT OF THE INTENDED LEARNING OUTCOMES

| SUBJECT<br>LEARNING<br>OUTCOMES | METHOD OF ASSESSMENT (+/-) |   |   |                            |   |   |                            |   |   |                            |   |   |                            |   |   |                            |   |   |                            |   |   |   |   |   |
|---------------------------------|----------------------------|---|---|----------------------------|---|---|----------------------------|---|---|----------------------------|---|---|----------------------------|---|---|----------------------------|---|---|----------------------------|---|---|---|---|---|
|                                 | Oral/written exam          |   |   | Test                       |   |   | Project                    |   |   | activity in class          |   |   | Own work                   |   |   | Group work                 |   |   | Others                     |   |   |   |   |   |
|                                 | <i>The type of classes</i> |   |   | <i>The type of classes</i> |   |   | <i>The type of classes</i> |   |   | <i>The type of classes</i> |   |   | <i>The type of classes</i> |   |   | <i>The type of classes</i> |   |   | <i>The type of classes</i> |   |   |   |   |   |
|                                 | L                          | E | S | L                          | E | S | L                          | E | S | L                          | E | S | L                          | E | S | L                          | E | S | L                          | E | S | L | E | S |
| W01                             |                            |   |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            |   |   |   |   |   |
| U01                             |                            |   |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            |   |   |   |   |   |
| U02                             |                            |   |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            |   |   |   |   |   |
| K01                             |                            |   |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            |   |   |   |   |   |
| K02                             |                            |   |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            | + |   |                            |   |   |   |   |   |

## 7. CRITERIA OF ASSESSMENT OF THE INTENDED LEARNING OUTCOMES

| Form of classes | Grade | Criteria of assessment                                                                 |
|-----------------|-------|----------------------------------------------------------------------------------------|
| Exercises (E) 7 | 3.0   | Achieved 51-60% possible points from test, project, activity, own work and group work  |
|                 | 3.5   | Achieved 61-70% possible points from test, project, activity, own work and group work  |
|                 | 4.0   | Achieved 71-80% possible points from test, project, activity, own work and group work  |
|                 | 4.5   | Achieved 81-90% possible points from test, project, activity, own work and group work  |
|                 | 5.0   | Achieved 91-100% possible points from test, project, activity, own work and group work |

Accepted for execution

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<sup>6</sup> Niepotrzebne usunąć.

<sup>7</sup> Niepotrzebne usunąć.