<table>
<tr><td>Course code</td><td></td></tr>
<tr><td>Type and description</td><td>Background Course</td></tr>
<tr><td>ECTS credit</td><td>2</td></tr>
<tr><td>Course name</td><td>Methodology of scientific research</td></tr>
<tr><td>Course name in Polish</td><td>Metodyka prowadzenia badań naukowych</td></tr>
<tr><td>Language of instruction</td><td>English</td></tr>
<tr><td>Course level</td><td>8 PRK</td></tr>
<tr><td>Course coordinator</td><td>Emilia Wołowiec-Korecka</td></tr>
<tr><td>Course instructors</td><td>Emilia Wołowiec-Korecka, Magdalena Tokarska</td></tr>
<tr><td>Delivery methods and course duration</td><td>
<table>
<tr><th></th><th>Lecture</th><th>Tutorials</th><th>Laboratory</th><th>Project</th><th>Seminar</th><th>Other</th><th>Total of teaching hours during semester</th></tr>
<tr><td>Contact hours</td><td>15</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>15</td></tr>
<tr><td>E-learning</td><td>No</td><td>No</td><td>No</td><td>No</td><td>No</td><td>No</td><td></td></tr>
<tr><td>Assessment criteria (weightage)</td><td>0,00</td><td></td><td></td><td></td><td></td><td>0,00</td><td></td></tr>
</table>
</td></tr>
<tr><td>Course objective</td><td>The aim of the course is:

1. Provide students with knowledge about the methods of planning experiments in the field of scientific research.

2. Acquisition of methods on the methods of processing, analysis, and verification of experimental data.</td></tr>
<tr><td>Learning outcomes</td><td>After the course a PhD student:

1. Knows the basic methods, techniques, tools for planning and conducting experiments. W4, K1

2. Is able to plan and carry out simple experimental tests, including measurements, interpret the obtained results and draw conclusions. U1 U2</td></tr>
<tr><td>Assessment methods</td><td>Written report - 100%</td></tr>
<tr><td>Prerequisites</td><td>The contents of the master degree course on the differential and integral calculus</td></tr>
<tr><td>Course content with delivery methods</td><td>Lecture:

1. The idea of research and experiments.

2. Establishing the experiment plan. Elements and techniques of planning an experiment.

3. Documenting the course of experiments.

4. Analysis and processing of experimental data. Identifying the sources of dependencies and errors. Methods of verifying the results of experiments.

5. Examination of statistical dependencies between selected factors present in the experiment.

6. Case studies.</td></tr>
</table>

Basic reference materials	1. Goupy J.L.: Methods for experimental design: principles and applications for physicists and chemists, Elsevier, Amstedram 1993 2. Kuo W. (Ed.) Quality through engineering design, Elsevier, Amstedram 1993 3. StatSoft, Inc. Electronic Statistics Textbook, 1997, https://www.uaq.mx/statsoft/stathome.html 4. Polański Z.: Planowanie doświadczeń w technice, PWN, Warszawa 1984
Other reference materials	
Average student workload outside classroom	35 h
Comments	
Last update	