<table>
<tr><td>Course code</td><td></td></tr>
<tr><td>Type and description</td><td>EC - elective subjects from the discipline of Mathematics</td></tr>
<tr><td>ECTS credit</td><td>1</td></tr>
<tr><td>Course name</td><td>Physics for mathematicians</td></tr>
<tr><td>Course name in Polish</td><td>Fizyka dla matematyków</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>prof. dr hab.Wojciech Kryszewski</td></tr>
<tr><td>Course instructors</td><td>prof. dr hab. Wojciech Kryszewski</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>0</td><td>0</td><td>0</td><td>5</td><td>0</td><td>0</td><td>5</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>no</td></tr>
<tr><td>Assessment criteria (weightage)</td><td>0</td><td>0</td><td>0</td><td>100%</td><td>0</td><td>0</td><td>100%</td></tr>
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<tr><td>Course objective</td><td>1. Acquisition of knowledge on basics of time-space physics and classical mechanics in the language of modern mathematics.

2. Acquisition of knowledge on mathematical consequences of basic postulates and laws of Newtonian mechanics.

3. Gaining knowledge of mathematical aspects of the Lagrangian and Hamiltonian mechanics.

4. Acquisition of knowledge of basic quantum mechanics and its mathematical description by the theory of Hilbert spaces</td></tr>
<tr><td>Learning outcomes</td><td>After the course a PhD student is able to:

1. understands and applies the Basic notions of physics and mechanics, understand problems of physics and knows which mathematical techniques are applied in mechanics – effects W1, U2, K3

2. knows the notion of Lagrangian and Hamiltonian formalism of mechanics in description of kinematic and dynamic phenomena – effects W2, U1, K1-K3

3. is able to Apple the acquired knowledge to study of concrete of mathematical models in physics: effectsU1, K1-K3</td></tr>
<tr><td>Assessment methods</td><td>Effects W1, U2, W2 – oral examination

effects U1, K1-K3…. – presentation</td></tr>
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	The final evaluation is based on: Exam - 80% Presentation - 20%
Prerequisites	Master degree course in analysis and topology
Course content with delivery methods	PROJECT 1 Presentation of a solution to a mechanical model in the language of mathematics. 2 Paradigms of special and general theory of relativity.
Basic reference materials	1. V. I. Arnold, Mathematical methods of classical mechanics, PWN 1986 2. M. Reed, B. Simon, Methods of modern mathematical physics, Academic Press 1980.
Other reference materials	
Average student workload outside classroom	15 h
Comments	
Last update	July 2020