

<b>Course code</b>								
<b>Type and description</b>	Elective Course in Physics							
<b>ECTS credit</b>	1							
<b>Course name</b>	Modern Physics 1							
<b>Course name in Polish</b>	Fizyka Współczesna 1							
<b>Language of instruction</b>	English							
<b>Course level</b>	8 PRK							
<b>Course coordinator</b>	prof. dr hab. inż. Tomasz Czyszanowski							
<b>Course instructors</b>	prof. dr hab. inż. Tomasz Czyszanowski							
<b>Delivery methods and course duration</b>		<b>Lecture</b>	<b>Tutorials</b>	<b>Laboratory</b>	<b>Project</b>	<b>Seminar</b>	<b>Other</b>	<b>Total of teaching hours during semester</b>
	Contact hours	0	0	0	15	0	0	15
	E-learning	No	No	No	No	No	No	
	Assessment criteria (weightage)				100%			
<b>Course objective</b>	Presentation of foundations of quantum mechanics, the most pronounced phenomena related to quantum effects. Consequences of quantum mechanics for solid state physics, semiconductor devices, digital computers and quantum computers							
<b>Learning outcomes</b>	Students is able to solve the Schrodinger equation for simple systems. Student knows basic phenomena occurring in semiconductors. (W4, U4, K1)							
<b>Assessment methods</b>	Written test and presentation							
<b>Prerequisites</b>	Knowledge on classical physics (basic level), complex analysis (basic level), differential equations (basic level)							
<b>Course content with delivery methods</b>	<ol style="list-style-type: none"> <li>1) Examples of particle-like behavior of light and wave-like behavior of particles</li> <li>2) Schrodinger equation</li> </ol>							

		<ul style="list-style-type: none"> <li>3) Examples of solutions of Schrodinger equation</li> <li>4) Semiconductors, p-n junctions, transistors</li> <li>5) Basics of quantum processors</li> </ul>
<b>Basic materials</b>	<b>reference</b>	Fundamentals of physics, volume 5, Halliday, Resnick and Walker
<b>Other materials</b>	<b>reference</b>	Scientific papers
<b>Average workload classroom</b>	<b>student outside</b>	10 h
<b>Comments</b>		
<b>Last update</b>		