

<b>Course code</b>																																	
<b>Type and description</b>	EC – Elective Course																																
<b>ECTS credit</b>	1																																
<b>Course name</b>	Profilometric measurement in surface engineering of textiles																																
<b>Course name in Polish</b>	Profilometria w inżynierii powierzchni materiałów włókienniczych																																
<b>Language of instruction</b>	English																																
<b>Course level</b>	8 PRK																																
<b>Course coordinator</b>	Prof. dr hab. inż. Małgorzata Matusiak																																
<b>Course instructors</b>	Prof. dr hab. inż. Małgorzata Matusiak																																
<b>Delivery methods and course duration</b>	<table border="1"> <thead> <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> </thead> <tbody> <tr> <td>Contact hours</td> <td>0</td> <td>0</td> <td>0</td> <td>15</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>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> </tbody> </table>		Lecture	Tutorials	Laboratory	Project	Seminar	Other	Total of teaching hours during semester	Contact hours	0	0	0	15	0	0	15	E-learning	no	no	no	no	no	no	no	Assessment criteria (weightage)	0	0	0	100%	0	0	100%
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<b>Course objective</b>	<p>The objective of the course:</p> <ol style="list-style-type: none"> <li>1. The aim of the course is to enable students to acquire knowledge in the field of surface structure of textiles</li> <li>2. The aim of the course is to enable students to acquire knowledge in the field of methods of measuring the geometric structure of surface of textile materials</li> <li>3. The aim of the course is to enable students to acquire skills in determining the parameters of the geometric structure of the surface of textile materials.</li> <li>4. The aim of the course is to enable students to acquire skills in characterizing the surface of textile materials based on the results of a profilometer.</li> </ol>																																
<b>Learning outcomes</b>	<p>A PhD student after completing the course can:</p> <ol style="list-style-type: none"> <li>1. define the basic parameters and functions characterizing the surface topography of textile materials,</li> <li>2. perform measurements of the surface topography of textiles using an optical profilometer,</li> <li>3. interpret the results of measuring textile materials using an optical profilometer.</li> </ol> <p>Effects: W4, U4, K1</p>																																
<b>Assessment methods</b>	<p>Verification methods of learning outcomes:</p> <p>Learning outcomes 1 – 3 – presentation of project results, correctness and completeness of project documentation.</p> <p>The final grade consists of:</p> <p>A score for project realization - 100%</p>																																
<b>Prerequisites</b>	Non																																
<b>Course content with delivery methods</b>	<p>PROJECT</p> <p>As part of the project, tests will be carried out on selected textile materials in the field of the geometric structure of their surface. Measurements will be made using a MicroSpy® Profile Profilometer with a FRT CWL sensor based on a patented method that uses chromatic aberration of optical lenses. The analysis of the obtained images of the examined materials will be made using MARK III software, cooperating with a profilometer. Parameters characterizing the surface quality of the tested materials</p>																																

	<p>will be determined: height parameters, spatial parameters, hybrid parameters, functions and parameters associated with them as well as other parameters.</p> <p>Based on the obtained measurement results, an analysis of the surface topography of textiles and an analysis of the impact of material structure on the values of parameters characterizing the surface of the tested materials will be carried out.</p>
<b>Basic reference materials</b>	Non
<b>Other reference materials</b>	<ol style="list-style-type: none"> <li>1. Adamczak S., <i>Pomiary geometryczne powierzchni. Zarysy kształtu, falistości i chropowatości</i>. WNT Warszawa 2008</li> <li>2. <i>Surface Modification of Textiles</i>, pod red. Q. Wei, Woodhead Publishing in Textiles, The Textile Institute 2009.</li> <li>3. Pawlus P., <i>Topografia powierzchni: pomiar, analiza, oddziaływanie</i>, Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2005.</li> <li>4. Wieczorowski M., <i>Teoretyczne podstawy przestrzennej analizy nierówności powierzchni</i>, Inżynieria Maszyn, R. 18, z. 3, 2013</li> <li>5. PN-EN ISO 4287:1999/A1:2010 Specyfikacje geometrii wyrobów - Struktura geometryczna powierzchni: metoda profilowa - Terminy, definicje i parametry struktury geometrycznej powierzchni</li> <li>6. <i>Operating Manual FRT MicroSpy® Profile</i>, Version 2.104, FRT the art of technology™, Bergisch Gladbach, Germany, 2016.</li> <li>7. <i>Manual Mark III. Version 3.11. R2T1</i>, FRT the art of technology™, Bergisch Gladbach, Germany, 2018.</li> </ol>
<b>Average student workload outside classroom</b>	15 h
<b>Comments</b>	
<b>Last update</b>	March 2023