

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Polymers and Polymer Composites</b>		Code <b>1010702221010722974</b>
Field of study <b>Chemical Technology</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>1 / 2</b>
Elective path/specialty <b>Composites and Nanomaterials</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>Second-cycle studies</b>	Form of study (full-time, part-time) <b>full-time</b>	
No. of hours Lecture: <b>1</b> Classes: <b>-</b> Laboratory: <b>1</b> Project/seminars: <b>-</b>		No. of credits <b>3</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>3 100%</b> <b>3 100%</b>
<b>Responsible for subject / lecturer:</b> prof. dr hab. inż. Ewa Andrzejewska email: ewa.andrzejewska@put.poznan.pl tel. 616653637 Faculty of Chemical Technology Poznań Piotrowo 3		<b>Responsible for subject / lecturer:</b> dr inż. Jerzy Jęczalik email: jerzy.jeczalik@put.poznan.pl tel. 616653669 Faculty of Chemical Technology -Poznań, Piotrowo 3
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Knowledge of the basic principles of general, organic and physical chemistry. Knowlegr of subjects taught at ?Chemical technology ? polymeric materials? lecture.
2	<b>Skills</b>	Student knows and applies good practices of laboratory work, is able to operate the scientific equipment. He or she is able to search for information in scientific literature, databases and other properly chosen sources.
3	<b>Social competencies</b>	Student is consious of the effects of engineering activity.
<b>Assumptions and objectives of the course:</b> To gain the knowledge about polymeric composites, their properties, materials for production, manufacturing methods and applications.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Student has a well established knowledge of synthesis, properties, application of polymeric composites. - [K_W02]		
2. Student has the advanced knowledge of equipment and processes used in polymeric composites technology - [K_W11]		
<b>Skills:</b>		
1. Student can use English language for professional purposes - [K_U03]		
2. 2. Student has the ability of analysing and interpreting of the results of experiments from the area of polymeric composites chemistry and technology - [K_U06]		
<b>Social competencies:</b>		
1. Student is conscious of limitations of science and technology in the area of polymeric composites chemistry and technology, including environment protection - [K_K01]		
2. Student is conscious of limitation of his knowledge and understands the need of further continuous education in area of polymer chemistry and technology - [K_K02]		
3. Students can work in a team and are aware of their responsibility for their work and responsibility for the results of the teamwork - [K_K04]		
<b>Assessment methods of study outcomes</b>		

-Written exam in the subject from the field of composite materials, evaluation of laboratory exercises and reports.		
<b>Course description</b>		
<p>-Definition of composite material.          Properties of composites.          The ingredients of composites and their role.          Types of matrixes and reinforcing materials.          Polymeric matrixes of composites.          Fibre-reinforced composites. Types of fibres and reinforcing materials.          Polymeric and carbon fibres for composites reinforcement.          Industrial methods of production of composite materials with polymeric matrix.          Applications of polymeric composites.</p>		
<b>Basic bibliography:</b>		
<p>1. Comprehensive Composite Materials, Editors: A. Kelly, C. Zweben, Elsevier 2000.          2. Composites Manufacturing, S. K. Mazumdar, CRC Press 2002.</p>		
<b>Additional bibliography:</b>		
<p>1. Handbook of Composites, S. T. Peters, Chapman and Hall 1998          2. Fiber Reinforced Composites, P.K.Mallick, CRC Press Taylor Francis Group 2008.</p>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Lecture	15	
2. Laboratory	15	
3. Preparation for laboratory	4	
4. Preparation of reports	4	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	38	3
Contact hours	30	2
Practical activities	15	1