

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Polymeric materials technology		Code 1010702221010722089
Field of study Chemical Technology	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 2
Elective path/specialty Polymer Technology	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 2 Classes: - Laboratory: 3 Project/seminars: 2		No. of credits 8
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 8 100% 8 100%
Responsible for subject / lecturer: Jerzy Jęczalik, dr inż. email: jerzy.jeczalik@put.poznan.pl tel. 61 665 3669 Technologii Chemicznej Ul. Piotrowo 3, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Knowledge of the basic principles of general, organic and physical chemistry.
2	Skills	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	Social competencies	He or she is conscious of the effects of engineering activity.
Assumptions and objectives of the course: Gaining of knowledge in the area of production of polymers and polymeric materials therefrom.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Student has the knowledge of production of basic industrial polymers. - [K_W02, K_W11] 2. Student knows the principal processes of industrial polymer synthesis. - [-] 3. Student knows, how to modify the properties of polymers in the polyreaction step. - [-]		
Skills:		
1. Student has the ability of presenting the results of laboratory exercises in concise and proper manner. - [-] 2. Student has the ability of analyzing and interpreting of the results of experiments. - [K_U01, K_U06, K_U08] 3. Student has the ability of information finding in scientific literature, preparing and presenting papers on polymer technology subjects. - [-]		
Social competencies:		
1. Student is conscious of limitations of science and technology in the area of plastics technology, including environment protection. - [K_K04, K-K02] 2. Student is conscious of limitation of his knowledge and understands the need of further continuous education in area of polymer technology. - [-] 3. Students can work in a team and are aware of their responsibility for their work and responsibility for the results of the teamwork. - [-]		

Assessment methods of study outcomes		
-Written exam in the subject presented at lectures, evaluation of laboratory exercises and reports, evaluation of content of design project or presentation from the area of polymeric materials.		
Course description		
<p>Outline of chemistry and technology of polymeric materials. Areas of application of polymeric materials. Carbochemical and petrochemical raw materials for polymers production. Industrial methods of polymer synthesis. Preparation fo polymers for processing. Polymers obtained via polymerization, polycondensation or polyaddition methods? polyolefins, polystyrene, PVC, PVA, polivinyl alcohol, polyacetals, acrylic polymers, fluorine-containing polymers, polyoxymethylene, phenoloc resins, amine resins, polyamides, polyesters, polyurethanes, epoxide resins, polysiloxanes- production methods, properties, processing, applications. Naturally coourng polymers and their technical applications. Modification of polymers.</p> <p>Najnowsze osiągnięcia w dziedzinie technologii materiałów polimerowych i ich zastosowań technicznych. Zastosowania materiałów polimerowych w różnych dziedzinach techniki (np. polimery w budowie pojazdów, statków powietrznych, technice kosmicznej, zapisie informacji, medycynie, technice medycznej, itp.)</p>		
Basic bibliography:		
1. 1.W. Szlezyngier, Tworzywa sztuczne, FOSZE Rzeszów 1998. 2. 2. J. Pielichowski, A. Puszyński, Technologia tworzyw sztucznych, WNT Warszawa 1994.		
Additional bibliography:		
1. 1. Z. Wirpsza, Technologia ogólna polimerów, Politechnika Radomska 1997. 2. Praca zbiorowa (red. Z. Florjańczyk, S. Penczek), Chemia polimerów, t. II, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2002.		
Result of average student's workload		
Activity	Time (working hours)	
1. Lectures	30	
2. Laboratory exercises	45	
3. Design works	30	
4. Preparation fopr the exam, exam	35	
5. Preparation for laboratory exercises	20	
6. Reports from lab. exertcises	20	
7. Design project preparation	20	
Student's workload		
Source of workload	hours	ECTS
Total workload	200	8
Contact hours	105	5
Practical activities	45	3