

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Interim Paper (paper)		Code 1010612221010640466
Field of study Mechanika i budowa maszyn	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 2
Elective path/specialty Product engineering (Inżynieria produktu)	Subject offered in: English	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: - Classes: - Laboratory: - Project/seminars: 4		No. of credits 5
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 %) 1 100% 1 100%
Responsible for subject / lecturer: Prof. Zbigniew Kłos email: zbigniew.klos@put.poznan.pl tel. 61 665 2231 of Transport Engineering ul. Piotrowo 3, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student has the basic knowledge from his/her field of study, specialization, preliminary seminar and area of diploma work.
2	Skills	Student possesses ability of integrating and interpreting obtained information, of drawing the conclusions, elaborating simple engineering tasks
3	Social competencies	Student has the consciousness of the validity of different form of communication, especially in reporting results of engineering tasks
Assumptions and objectives of the course: Subject is intended for mechanical engineering students of Product Engineering specialization, absoluees of B.Sc. studies, who want to broaden their education by the issues connected with creation of industrial products ? technical objects or industrial processes (services) in their whole life cycle. The goal of study is to prepare young adepts, future product engineers, to formulate and solve problems leading to create more sustainable industrial products. The basics for this proposal is considering the analyzed products in their whole life cycle, starting from design and finishing at disposal stage.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Has a basic knowledge of general issues concerning relation: industrial products ? environment and introduction into the area of creation and management of more sustainable industrial products, mainly technical objects: machines or devices, and processes - [M2_W21]		
Skills: 1. Is able to prepare technical information in the form of diploma work dealing with an engineering task, developing basic skills in the field of procedures leading to life cycle-oriented industrial products creation and management - [M2_U04]		
Social competencies: 1. Is aware of importance and understanding of the effects of undertaking innovative, market oriented, activities leading to creation of sustainable industrial products: technical objects and processes. - [M2_K02]		
Assessment methods of study outcomes		
Performing a practical task (project) with the use of different tools supporting analysis and creation, ended with the written report.		

Course description		
<p>This subject activate them through education in the task system with design form, as well as technical and research activities and development of communication skills with verbal, text, graphics and multimedia measures. Therefore some knowledge leading to posses the knowledge and skills in these fields is delivered. Taking into consideration specificity of specialization ?Product Engineering? some basic knowledge on environment in which technical objects work, its elements and relations between them is presented. Other aspects like legal and economical aspects of sustainable development, economy of used elements of technical objects and vehicles are optionally added.</p>		
<p>Basic bibliography:</p> <p>1. Abele E., Anderl R., Birkhofer H., Environmentally-friendly product development. Springer, London 2005</p> <p>2. Tools and methods of competitive engineering. Ed. I. Horvath, F. Mandorli, Z. Rusak, Delft University of Technology, Delft 2010</p>		
<p>Additional bibliography:</p> <p>1. Brown T., Change by design. Harper-Collins, New York 2009</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Consolidation of content	30	
2. Consultation	20	
3. Preparation for assessment	10	
4. Assessment participation	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	62	5
Contact hours	22	2
Practical activities	30	3