

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Basics of Machine Design		Code 1010601241010640394
Field of study Transport	Profile of study (general academic, practical) (brak)	Year /Semester 2 / 4
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 1 Classes: 1 Laboratory: - Project/seminars: 1		No. of credits 4
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		ECTS distribution (number and %) 4 100%
Responsible for subject / lecturer: dr hab. inż. Piotr Krawiec prof. PP email: Piotr.Krawiec@put.poznan.pl tel. 61 665 2242 Maszyn Roboczych i Transportu Piotrowo 3		Responsible for subject / lecturer: doc. dr inż. Aleksander Bober email: Aleksander.Bober@put.poznan.pl tel. 61665 2845 Maszyn Roboczych i Transportu Piotrowo 3
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	News from the classical recording design, computer graphics
2	Skills	It can compile the assembly and working
3	Social competencies	Able to work in a group performing different roles
Assumptions and objectives of the course: Knowledge of typical connections used in mechanical engineering, principles of construction machinery components and assemblies, and methods for their design.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Has a structured, theoretically founded knowledge in the field of engineering graphics and machine construction: technical drawing, objects projecting, the basic principles of engineering graphics, use of CAD (Computer Aided Design) graphics in the construction of machines, knows: the concept of the machine, machinery breakdown by purpose, principles of operation and type of energy - [K1A_W13]		
2. Has knowledge about classification of machinery, energy transformation in machinery, basic knowledge of machine design, principles of design, fatigue strength of machine parts, separable and inseparable connections, axles and shafts, bearings, clutches and brakes, mechanical gears, manufacturing techniques. - [K1A_W13]		
Skills:		
1. Is able to obtain information from the literature, internet, databases and other sources in Polish and English. Can integrate the information to interpret and learn from them, create and justify opinions. - [K1A_U01]		
2. Is able to communicate using a variety of techniques in a professional environment and other environments using the formal record of the design, technical drawings, concepts and definitions in the scope of the study area. - [K1A_U02]		
3. Is able to analyze objects and technical solutions, can search the catalogs and manufacturers websites for ready-made components of machinery and equipment, including means and facilities for transport and storage, evaluate their suitability for use in own technical and organizational projects. komponenty maszyn i urządzeń. - [K1A_U10]		
4. Is able draw by hand machine elements and schematics in accordance with the principles of engineering drawing and European standards. - [K1A_U12]		
Social competencies:		

1. Understands the need and knows the possibilities of lifelong learning, knows the need for acquiring new knowledge for professional development. - [K1A_K01]
2. Is aware of and understands the importance and impact of non-technical aspects of mechanical engineering activities and its impact on the environment and responsibility for own decisions in short and long-term aspect. - [K1A_K02]
3. Is able to define the tasks and priorities for their implementation for himself and the coworkers team. - [K1A_K05]

Assessment methods of study outcomes		
Passing the exam, exercises and projects.		
Course description		
Basic concepts in the methodology of design elements and assemblies of machines. Understanding the determinants of I and the structure of the design process. Practical knowledge of typical design methodology calls rołącznych I nireozłącznych, Learning design methodology axle shafts elastic elements, design of uwzględnieniem fatigue. Zasady selection of placental rolling and sliding. Reminder rules for the application of limits and fits.		
Basic bibliography:		
1. Bahl G., Beitz W., Nauka konstruowania, WNT, Warszawa 1984		
2. Dietrich M (red): Podstawy konstrukcji maszyn., WNT, Wa-wa, 1999.		
3. Osiński Z. (red) Podstawy konstrukcji maszyn, PWN, W-wa, 1999		
4. Podręczniki z serii wydawniczej Podstaw Konstrukcji Maszyn, PWN Warszawa		
Additional bibliography:		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in lectures	15	
2. Consultation on the material given in lectures	2	
3. Exam Preparation	10	
4. Participation in the exam	2	
5. Participation in class exercises	15	
6. The consolidation exercise of Contents	10	
7. Preparing to pass	10	
8. Participation in the project activities	15	
9. Preparation of the project	30	
10. Consultation project	5	
Student's workload		
Source of workload	hours	ECTS
Total workload	114	4
Contact hours	54	2
Practical activities	50	2