

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Technical Graphics		Code 1011104321011120135
Field of study Logistics - Part-time studies - First-cycle	Profile of study (general academic, practical) general academic	Year /Semester 1 / 2
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: - Classes: - Laboratory: 12 Project/seminars: -		No. of credits 1
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 1 100%
Responsible for subject / lecturer: dr hab. inż. Józef Gruszka, prof. nadzw. email: jozef.gruszka@put.poznan.pl tel. 6653408 Faculty of Engineering Management ul. Strzelecka 11 60-965 Poznań		Responsible for subject / lecturer: dr inż. Agnieszka Misztal email: agnieszka.misztal@put.poznan.pl tel. 616653437 Faculty of Engineering Management ul. Strzelecka 11 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge from high school. The necessary information in the field of technology and machine parts will be explained subsequently.
2	Skills	Efficient drawing
3	Social competencies	Understanding the importance of technical drawing in a work of an engineer.
Assumptions and objectives of the course: The aim of the course is to familiarize students with the most important information in the field of technical drawings including PN. Based on information from the machine drawing the student gets acquainted with electrical drawings, architectural - construction and other as well as develops the ability to read technical drawings.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Knows fundamental methods, techniques, tools and materials that are applied in solving simple engineering tasks relating building and machines? exploitation - [K04-InzA_W02]		
Skills: 1. Is able to identify the project tasks and solve simple design tasks within the construction and operation of machinery - [K01-InzA_U6] 2. . Can apply typical methods for dealing with simple problems existing in the construction and operation of machinery - [InzA_U06-K01, K01-InzA_U7] 3. Can design a simple structure and technology of simple machinery parts and components as well as design the organization of the production units of the first complexity degree - [K01-InzA_U8]		
Social competencies: 1. Understands the need and knows means how to self-study (first, second and third cycle studies, postgraduate studies, qualification courses)- improving professional, personal and social competence - [K01-InzA_K1]		
Assessment methods of study outcomes		

<p>Formative assessment: Classes: on the basis of the progress of the project tasks from technical drawing Lectures: on the basis of the answers to the questions regarding the covered material during previous lectures</p> <p>Collective assessment: Lecture: exam- multiple choice test Classes: public presentation of the prepared drawing, conducting a discussion connected with the presentation as well as the quality form of the prepared materials</p>		
Course description		
<p>The course covers the following topics : types of drawings, sheet formats, standard elements of technical drawing, drawings and their location, views and sections, dimensioning, tolerance dimensions, the shape and position, designation of roughness and waviness, connections of machine parts, axles, shafts, bearings, clutches and brakes. Drawing and reading: schemas :: mechanical, hydraulic, pneumatic, thermal energy and vacuum techniques, elements of electrical, chemical and architectural ? construction drawings. Drawings: charts and nomograms.</p> <p>Teaching methods: laboratory method</p>		
<p>Basic bibliography:</p> <ol style="list-style-type: none"> 1. Dobrzański T, Rysunek techniczny maszynowy, WNT 2002. 2. Mazur J., Kosiński K., Polakowski K., Grafika inżynierska z wykorzystaniem metod CAD, OWPW, 2014 3. http://pbc.biaman.pl/Content/118/Grafika%20inzynierska.pdf 4. http://bcpw.bg.pw.edu.pl/Content/756/drozdziel.pdf 5. . http://cadomania.pl/darmowy-kurs-autocad.html 6. https://knowledge.autodesk.com/support/autocad/getting- 7. http://techtutor.pl/kurs-autocad/ 8. Dobrzański T., Rysunek techniczny maszynowy, Wydawnictwo WNT, Warszawa 2015. 9. Filipowicz K., Kowal A., Kuczaj M., Rysunek techniczny, Wydawnictwo Politechniki Śląskiej, Gliwice 10. Zakres aktualnych aktów normatywnych z zakresu rysunku technicznego-wymagania ogólne. 		
<p>Additional bibliography:</p> <ol style="list-style-type: none"> 1. http://pbc.gda.pl/Content/9921/kotarska_geometria_wykreslna_zadania_v2.pdf 2. PN-EN ISO 5456-1:2002 Rysunek techniczny. Metody rzutowania. Część 1: Postanowienia ogólne 3. PN-EN ISO 5456-2:2002 Rysunek techniczny. Metody rzutowania. Część 2: Przedstawianie prostokątne 4. PN-EN ISO 7083:1998 Rysunek techniczny maszynowy. Symbole tolerancji geometrycznych. Proporcje i wymiary 5. PN-87/M-01145 Rysunek techniczny maszynowy. Tolerancje kształtu i położenia. Oznaczanie na rysunkach 6. Molasy R., Rysunek techniczny : chropowatość i falistość powierzchni, tolerancje geometryczne i tolerowanie wymiarów, Wydawnictwo Politechniki Świętokrzyskiej, Kielce, 2016 		
Result of average student's workload		
Activity		Time (working hours)
1. Laboratory		12
2. Consultation		10
Student's workload		
Source of workload	hours	ECTS
Total workload	22	1
Contact hours	22	1
Practical activities	12	1