

MODULE DESCRIPTION

Module code	Z-0091
Module name	Grafika inżynierska
Module name in English	Engineering Graphics
Valid from academic year	2016/2017

A. MODULE PLACEMENT IN THE SYLLABUS

Field of study	Management and Production Engineering
Level of education	1st degree <i>(1st degree / 2nd degree)</i>
Studies profile	General <i>(general / practical)</i>
Form and method of conducting classes	Full-time <i>(full-time / part-time)</i>
Specialisation	All
Unit conducting the module	Department of Machine Design
Module co-ordinator	Janusz Tuśnio, PhD hab., Eng
Approved by:	

B. MODULE OVERVIEW

Type of subject/group of subjects	Major <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	Compulsory <i>(compulsory / non-compulsory)</i>
Language of conducting classes	English
Module placement in the syllabus - semester	2nd semester
Subject realisation in the academic year	Summer semester <i>(winter / summer)</i>
Initial requirements	No requirements <i>(module codes / module names)</i>
Examination	No <i>(yes / no)</i>
Number of ECTS credit points	3

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	15		24		

C. TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Module target	The aim of the module includes acquiring knowledge and understanding the principles of preparing and reading a technical drawing enable passing scientific and technological thought in the form of a project of both a single part and the whole machine. The ability of using the AutoCAD system enables learning and using the latest graphical programs available for a modern engineer.
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Effect symbol	Teaching results	Teaching methods (l/c/l/p/other)	Reference to subject effects	Reference to effects of a field of study
W_01	A student has knowledge as regards the principles of creating and analysing technical documentation of a product according to the principles of Polish Norms.	lab	K_W06	T1A_W04
W_02	A student has knowledge as regards the principles of operation and the possibilities of the AutoCAD graphical program supporting construction works.	l	K_W04	T1A_W03 T1A_W06
U_01	A student acquires the skills of reading and analysing the obtained technical documentation concerning the construction of mechanical parts.	lab	K_U01	T1A_U01
U_02	A student can make simple drawing documentation of basic machine parts, both manually and with the use of a computer.	lab	K_U03	T1A_U03
K_01	A student understands the necessity of continuous improvement of his/her knowledge on more and more advanced graphical computer programs supporting the processes of constructing machines.	l/lab	K_K01	TA1_K01

Teaching contents:

1. Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	Formats, scales, arrays, and drawing lines. The principles of reproducing spatial solids on 6 projecting planes.	W_01
2	Views, cross-sections, and revolved sections. Simple and complex crosssections.	W_01
3	General and detailed principles of dimensioning.	W_01
4	Connecting and disconnecting joints. Machine shafts.	W_01
5	Introduction to the AutoCAD system.	W_02
6	Labelling surface and tolerance state. Fittings.	W_01
7	Assembly drawings.	W_01
8	A final test.	W_01

2. Teaching contents as regards classes

Class number	Teaching contents	Reference to teaching results for a module

3. Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module
1	Projecting an object on a six-plane projector.	U_01 U_02
2	A workshop drawing of a simple part.	U_01 U_02
3	A workshop drawing of a complicated detail.	U_01 U_02
4	A workshop drawing of a machine shaft.	U_01 U_02
5	A drawing of bolted and welded joints.	U_01 U_02
6	An assembly drawing.	U_01 U_02
7	Introduction to the AutoCAD system. Simple drawing editions.	U_01 U_02 K_01
8	Dimensioning principles in AutoCAD. Creating drawing layers. Drawing cross-sections.	U_01 U_02 K_01
9	AutoCAD: a workshop drawing of a detail.	U_01 U_02 K_01
10	AutoCAD: a workshop drawing of a machine shaft.	U_01 U_02 K_01
11	AutoCAD: a workshop drawing of bolted joints.	U_01 U_02 K_01
12	A test.	U_01 U_02

4. The characteristics of project assignments

The methods of assessing teaching results

Obtaining a credit for laboratory exercises: on the basis of drawings illustrating machine parts and two tests in the form of a manual and computer project.

Obtaining a credit for lectures: on the basis of a final test in the form of a test containing questions and simple drawing tasks.

Effect symbol	Methods of assessing teaching results <i>(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)</i>
W_01	A test in the form of questions during laboratory classes.
W_02	A test in the form of questions during laboratory classes.
U_01	A test in the form of project completion concerning a machine part (during laboratory classes).
U_02	A test on appropriate use of the AutoCAD program during laboratory classes.
K_01	Comments during the lectures and a discussion during laboratory classes.

D. STUDENT'S INPUT

ECTS credit points		
	Type of student's activity	Student's workload
1	Participation in lectures	15
2	Participation in classes	
3	Participation in laboratories	24
4	Participation in tutorials (2-3 times per semester)	
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	
8		
9	Number of hours requiring a lecturer's assistance	39 <i>(sum)</i>
10	Number of ECTS credit points which are allocated for assisted work <i>(1 ECTS point=25-30 hours)</i>	1.56
11	Unassisted study of lecture subjects	12
12	Unassisted preparation for classes	
13	Unassisted preparation for tests	
14	Unassisted preparation for laboratories	12
15	Preparing reports	
15	Preparing for a final laboratory test	6
17	Preparing a project or documentation	
18	Preparing for an examination	
19	Preparing for a test during the lecture	6
20	Number of hours of a student's unassisted work	36 <i>(sum)</i>
21	Number of ECTS credit points which a student receives for unassisted work <i>(1 ECTS point=25-30 hours)</i>	1.44
22	Total number of hours of a student's work	75
23	ECTS points per module <i>1 ECTS point=25-30 hours</i>	3
24	Work input connected with practical classes <i>Total number of hours connected with practical classes</i>	39
25	Number of ECTS credit points which a student receives for practical classes <i>(1 ECTS point=25-30 hours)</i>	1.56

E. LITERATURE

Literature list	<ol style="list-style-type: none"> 1. Lewandowski T., <i>Rysunek techniczny dla mechaników</i>, Wydawnictwa Szkolne i Pedagogiczne, Warszawa 2009. 2. Fołęga P., Wojnar G., Czech P., <i>Zasady zapisu konstrukcji maszyn</i>, Wydawnictwo Politechniki Śląskiej, 2011. 3. Dobrzański T., <i>Rysunek Techniczny Maszynowy</i>, WNT, Warszawa 2010. 4. <i>Rysunek Techniczny – zbiór Polskich Norm</i>, Wydawnictwo PKN. 5. Pikoń A., <i>AutoCAD 2010PL pierwsze kroki</i>, Wydawnictwo Helion 2010. 6. Jaskulski A., <i>AutoCAD2011/LT2011+ Podstawy projektowania parametrycznego i nieparametrycznego</i>, PWN, Warszawa 2011.
Module website	

