MODULE DESCRIPTION

Module code	full-time studies:	**Z-ZIP1-E-106**
	part-time studies:	**Z-ZIPN1-E-106**
Module name	**Engineering Graphics**	
Module name in Polish	**Grafika inżynierska**	
Valid from academic year	**2019/2020**	

MODULE PLACEMENT IN THE SYLLABUS

Field of study	**MANAGEMENT AND PRODUCTION ENGINEERING**
Level of education	**1st degree**
Studies profile	**General**
Form and method of conducting classes	**Full-time and Part-time**
Specialisation	**All**
Unit conducting the module	**Department of Production Engineering**
Module co-ordinator	**Jarosław Gałkiewicz, PhD, DSc**
Approved by:	**Dariusz Bojczuk, PhD, DSc**

MODULE OVERVIEW

Type of subject / group of subjects	**Major**
Module status	**Compulsory**
Language of conducting classes	**English**
Module placement in the syllabus - semester	**Semester I**
Initial requirements	**No requirements**
Examination (YES/NO)	**NO**
Number of ECTS credit points	**3**

Method of conducting classes		**Lecture**	**Classes**	**Laboratory**	**Project**	**Other**
Per semester	full-time studies:	**20**		**15**		
	part-time studies:	**12**		**9**		

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Category	Symbol	Learning outcomes	Assignations to the directional learning outcomes
Knowledge	W01	A student has advanced knowledge as regards the principles of creating and analysing technical documentation of a product according to the principles of Polish Norms.	ZIP1_W06
	W02	A student has knowledge as regards the principles of operation and the possibilities of the graphical programs supporting construction works.	ZIP1_W04
Skills	U01	The student is able to obtain information from literature and sources concerning the construction of mechanical parts; the student can join information, make analyses and interpretations, and draw conclusions.	ZIP1_U01
	U02	The student can develop drawing documentation of essential mechanical parts and acquire the ability to read and analyze received technical documentation.	ZIP1_U03
Social competences	K01	A student recognizes the importance of knowledge in solving problems and understands the necessity of continuous improvement of his/her knowledge of advanced graphical computer programs aiding the processes of machine design.	ZIP1_K01

TEACHING CONTENTS

Method of conducting classes	Teaching contents
Lecture	Paper sizes, title blocks, folding, drawing scales, lines, and linework. Principles of orthographic projection. Views, sections, and sectional views. Dimensioning principles. Detachable and permanent joints. Machine shafts. Drawing of gear boxes and gears. Designation of surface roughness and tolerances. Fits. Assembly drawings.
Laboratory	Six views drawing. A drawing of a simple part. Three view drawing of complex member. A drawing of a complex component. A drawing of a machine shaft. A drawing of bolted and welded joints. A drawing of a gear. An assembly drawing of the selected device.

METODS OF ASSESSING TEACHING RESULTS

Symbol	Methods of checking the learning outcomes *(select X)*					
	Oral exam	**Written exam**	**Test**	**Project**	**Statement**	**Other**
W01			X			
W02			X			
U01				X		
U02				X		
K01				X		

FORM AND CONDITIONS OF PASSING

Form of classes	Form of credit	Passing conditions
Lecture	Credit with grade	Obtaining at least 50% of the test points.
Laboratory	Credit with grade	Positive grades for all assigments.

STUDENT WORKLOAD

Balance of ECTS points												
No.	Type of student's activity	Student's workload										Unit
		full-time					part-time					
1.	Participation in the activities	Lc	C	Lb	P	O	Lc	C	Lb	P	O	h
		20		15			12		9			
2.	Other (consultation, exam)	2		2			2		2			h
3.	**Number of hours of a student's assisted work**	**39**					**25**					h
4.	**Number of ECTS credit points which are allocated for assisted work**	**1,6**					**1,0**					ECTS
5.	**Number of hours of a student's unassisted work**	**36**					**50**					h
6.	**Number of ECTS credit points which a student receives for unassisted work**	**1,4**					**2,0**					ECTS
7.	**Work input connected with practical classes**	**32**					**32**					h
8.	**Number of ECTS credit points which a student receives for practical classes**	**1,3**					**1,3**					ECTS
9.	**Total number of hours of a student's work**	**75**					**75**					h
10.	**Punkty ECTS za moduł** *1 ECTS=25 hours*	**3**										ECTS

LITERATURE

1. Narayana K.L, Kannaiah P., Reddy K.V. (2006), *Machine Drawing*, New Age International (P) Ltd.
2. Simmons C.H., Phelps N., Maguire D.E (2012), *Manual of Engineering Drawing*, Elsevier Ltd.
3. ISO 128-1:2003 Technical drawings — General principles of presentation — Part 1: Introduction and index.