STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
Engineering graphics and CAD	**1011101121011125037**

Field of study	Profile of study (general academic, practical)	Year /Semester
Safety Engineering - Full-time studies - First-	**(brak)**	**1 / 2**
Elective path/specialty	**Subject offered in:**	**Course (compulsory, elective)**
-	**Polish**	**obligatory**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**full-time**

No. of hours					No. of credits
Lecture: **30**	Classes: **15**	Laboratory: **30**	Project/seminars: **-**		**4**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
(brak)	**(brak)**

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**4 100%**
Technical sciences	**4 100%**

Responsible for subject / lecturer:

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Responsible for subject / lecturer:

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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

Formative assessment:

Classes: on the basis of the 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

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

Course description

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.

Basic bibliography:

1. Rysunek Techniczny Maszynowy (Construction drawing), Dobrzański T., WNT, W - wa, 2004

2. Zbiór norm Rysunek Techniczny maszynowy, (Set of standards.Technical machine drawing) ,Zbior norm, WNT, W - wa, dow.

3. Dowolne podręczniki z rysunku technicznego. (Any books on technical drawing)

4. Programy komputerowe (Computer programs), C A D

Additional bibliography:

1. Auto CAD. Pierwsze kroki (First steps), Pikoń A., Helion, W - wa, 2006

Result of average student's workload

Activity	Time (working hours)
1. lecture	30
2. Classes	15
3. consultation	30
4. preparation for classes	15
5. revision of the material	15
6. preparation for an exam	15
7. exam	0

Student's workload

Source of workload	hours	ECTS
Total workload	120	4
Contact hours	90	3
Practical activities	45	1