STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Basics of Machine Design		**1010601341010640394**

Field of study	Profile of study (general academic, practical)	Year /Semester
Transport	**(brak)**	**2 / 4**
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: **2**	Classes: **2**	Laboratory: **-**	Project/seminars: **2**	**7**

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	**7 100%**
Technical sciences	**7 100%**

Responsible for subject / lecturer:

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Maszyn Roboczych i Transportu
Piotrowo 3

Responsible for subject / lecturer:

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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 nireozłaczych, Learning design methodology axle shafts elastic elements, design of uwzgledniemien fatigue. Zaasady 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	30
2. Consultation on the material given in lectures	2
3. Exam Preparation	10
4. Participation in the exam	2
5. Participation in class exercises	30
6. Preparation to class exercises	6
7. The consolidation exercise of Contents	10
8. Consultation on the material given in exercises	2
9. Preparing to pass	10
10. Participation in exercises passing	2
11. Participation in the project activities	30
12. Preparation of the project	30
13. Consultation project	5
14. Preparation to pass the project exercises	15
15. Participation in project passing	2

Student's workload

Source of workload	hours	ECTS
Total workload	186	7
Contact hours	105	4
Practical activities	82	3