STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Manufacturing Technology**		Code **1010602121010200429**
Field of study **Mechanical Engineering**	Profile of study (general academic, practical) **(brak)**	Year /Semester **1 / 2**
Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**
Cycle of study: **Second-cycle studies**	Form of study (full-time,part-time) **full-time**	
No. of hours Lecture: **1** Classes: **1** Laboratory: **-** Project/seminars: **-**		No. of credits **2**
Status of the course in the study program (Basic, major, other) **(brak)**	(university-wide, from another field) **(brak)**	
Education areas and fields of science and art **technical sciences** **Technical sciences**		ECTS distribution (number and %) **2 100%** **2 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge on material science, construction of machines and manufacturing methods
2	**Skills**	Student has the ability to think logically, to use the information obtained from the literature and the internet
3	**Social competencies**	Student understands the need to learn and acquire new knowledge

Assumptions and objectives of the course:

Understanding the fundamentals of the technological processes planning of machine parts and assembly of machines

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Student should describe the phases of existence of technical objects - [K2A_W11]
2. Student should be able to define the concept of production process, technological process and its components - [K1A_W05]
3. Student should explain the basic concepts of technological equipment - [K2A_W11]
4. Student should determine the factors describing the surface layer - [K2A_ W11]
5. Student should describe the key factors of technological quality and exploitation quality - [K2A_W11]
6. Student should describe the methods of computer-aided design and implementation of technological processes - [K1A_W11]
7. Student should be able to select data for the technological process planning - [K2A_W11]

Skills:

1. Student can choose the raw material to form an indicated machine part - [K2A_U06]
2. Student can determine the machining allowances - [K1A_U06]
3. Student can determine the standard time on the technological operation - [K2A_U06]
4. Student can develop a manufacturing process for selected classes of machine parts - [K2A_U06]
5. Student is able to give the concept of technological equipment for the technological operation - [K2A_U06]

Social competencies:

1. Understands the need for lifelong learning; is able to inspire and organize the learning process of others - [K2A_K01]
2. Student can work together in a group and is willing to cooperate and work in teams to resolve problems contained within the subject being studied - [K2A_K03]
3. Student is aware of the role of technology used in the life cycle of the machine - [K2A_K06]

Assessment methods of study outcomes

Forming rating:

a) of the classes: based on the current progress of the given task performance

b) of lectures: too large lecture group and limited time prevents any knowledge examination procedure during the semester

Summary assessment:

Lecture: Examination on the basis of a written test consisting of four questions rated on a scale from 0 to 1. Included in the case of a minimum of 2,4 points.

Classes: Assessment based on oral and written elaboration of the tasks which should be performed. Elaborated project must be included in order to be credited classes (positive evaluation of the report).

Course description

Lecture:

A general introduction to the mechanical technology. The existence phases of the technical object. The essence of machine technology. New trends in manufacturing technology. The production process. The technological process. Technological documentation. The input of the design of technological process. Raw materials. Technical standard of the working time. Machining bases. Allowances. Precision of machining, errors. The quality of the product. The surface layer and the factors determining it. Technological equipment. Costs. Producibility of machine parts. Assembly. Planning of the typical processes of machine parts. Elements of computer aided processes planning.

Classes:

1 Methodology for calculating the technical standards of the time - with examples

2 Methodology of specialized fixtures designing - with examples

3 Methodology of manufacturing process planning of machine parts

4 The elaboration of the technological process of indicated machine part

Basic bibliography:

1. M. Feld: Technologia budowy maszyn, PWN, Warszawa, 2002.

2. M. Feld: Podstawy projektowania procesów technologicznych typowych części maszyn, WNT, Warszawa, 2000.

Additional bibliography:

1. M. Feld: Uchwyty obróbkowe, WNT, Warszawa, 2002.

2. K. Pastwa, K. Wieczorowski: Materiały pomocnicze do projektowania uchwytów i przyrządów, Wyd. Politechniki Poznańskiej, Poznań, 1977, skrypt nr 721.

3. R. Wołk: Normowanie czasu pracy na obrabiarkach skrawających do metali, WNT, Warszawa, 1972.

4. Poradnik inżyniera. Obróbka skrawaniem, tom II i III, WNT, Warszawa, 1993 i 1994.

Result of average student's workload

Activity	Time (working hours)
1. lecture	15
2. classes	15

Student's workload

Source of workload	hours	ECTS
Total workload	50	2
Contact hours	30	2
Practical activities	15	1