

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Machine Technology and Design of Production Processes		Code 1011101351011160159
Field of study Engineering Management - Full-time studies -	Profile of study (general academic, practical) general academic	Year /Semester 3 / 5
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 30 Classes: - Laboratory: 15 Project/seminars: 15		No. of credits 4
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art		ECTS distribution (number and %)
Responsible for subject / lecturer: prof. PhD. eng. Tadeusz Zaborowski, dr h. c. email: tadeusz.zaborowski@put.poznan.pl tel. +48616653373 Faculty of Engineering Management ul. Strzelecka 11 60-965 Poznań		Responsible for subject / lecturer: prof. PhD. eng. Tadeusz Zaborowski, dr h. c. email: tadeusz.zaborowski@put.poznan.pl tel. +48616653373 Faculty of Engineering Management ul. Strzelecka 11 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	1. Basic knowledge of the life cycle of machines - [K01-InzA_W01] 2. Basic methods, techniques, tools and materials used in solving simple engineering tasks involving the construction and operation of machines - [K04-InzA_W02] 3. To have knowledge of the technologies used in the construction and operation of machinery - [K07-InzA_W05]
2	Skills	1. Can make identification of project tasks and solve simple design tasks in the construction and operation of machinery - [K01-InzA_U2] 2. Can carry out technical and economic analysis of actions taken engineering - [K01-InzA_U04] 3. Able to design and analyze processes and organize production systems - [K01-InzA_U5] 4. Can design and technology to design simple parts and components of machines and design organization of production units of the first level of complexity - [K01-InzA_U06, K01-InzA_U07]
3	Social competencies	1. Is aware of the importance of design and organization of technological processes in engineering activities - [K01-InzA_K1] 2. It is aware of the significance of good design processes in the finished products - [K01-InzA_K2]
Assumptions and objectives of the course: - To familiarize students with theoretical and practical issues related to the design of technological processes - To familiarize students with theoretical and practical issues of processing and assembling with particular emphasis on conditions of market economy - Drafting of machine technology and process.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. It has a basic knowledge of the life cycle of machines - [K01-InzA_W01] 2. Knows basic methods, techniques, tools and materials used in solving simple engineering tasks involving the construction and operation of machines - [K04-InzA_W02] 3. Has knowledge about the technology used in the construction and operation of machinery - [K07-InzA_W05]		
Skills:		

<p>1. He can make the identification of project tasks and solve simple design tasks in the construction and operation of machinery - [K01-InzA_U2]</p> <p>2. Able to carry out technical and economic analysis of actions taken engineering - [K01-InzA_U04]</p> <p>3. Able to design and analyze processes and organize production systems - [K01-InzA_U5]</p> <p>4. Can design and technology to design simple parts and components of machines and design organization of production units of the first level of complexity - [K01-InzA_U06, K01-InzA_U07]</p>
<p>Social competencies:</p> <p>1. Is aware of the importance of design and organization of technological processes in engineering activities - [K01-InzA_K1]</p> <p>2. It is aware of the significance of good design processes in the finished products - [K01-InzA_K2]</p>

Assessment methods of study outcomes

Rating forming - in the range of lectures - based on answers to questions about the material covered in the previous lectures
 Rating summary - Lecture - written exam based on a pre-prepared set of questions.

Course description

Selected aspects of machine technology: basic concepts; elements of the technological process; production types and their characteristics; producibility; semi-finished products and their preparation for processing; final machining allowances; base in machine technology; standardization of working time; organizational forms of production.

The documentation process.
 Technical working hours.
 The accuracy of the machining process.
 The structures of the technological process typical machine parts.
 Editing.
 Designing the assembly process.
 Elements of automation and robotics manufacturing processes.
 Analysis of cost.
 Quality, quality control, certification.
 Surveying and layout of fits.
 Tolerances.
 A process design selected part of the process, the documentation process and variant analysis of the cost of the process.
 Unconventional technologies, equipment and design processes.
 Selected processes of production.

Basic bibliography:

1. Technologia maszyn / Bronisław Choroszy - Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej, 2000.
2. Podstawy projektowania procesów technologicznych typowych części maszyn / Mieczysław Feld. - Wyd. 2 zm. - Warszawa: Wydawnictwa Naukowo-Techniczne, 2003.
3. Edward Chlebus, Techniki komputerowe CAx w inżynierii produkcji, WNT, Warszawa 2000.
4. Feld M.: Technologia budowy maszyn. PWN, Warszawa 1995.
5. Łabędz J.: Projektowanie procesów technologicznych obróbki. Zagadnienia ogólne. Wydawnictwa AGH, Kraków 2001.
6. Manufacturing Technology: Metal Cutting and Machine Tools. Tata McGraw-Hill Education, 2000

Additional bibliography:

1. Ashby M., Shercliff H., Cebon D. Inżynieria materiałowa, Wyd. Galaktyka T.2, Łódź 2011
2. Kolman R. Kwalitologia. PG Gdańsk 2009
3. Feld M. Technologia Budowy Maszyn. PG, Gdańsk 1993
4. Krzyżanowski J: Wprowadzenie do elastycznych systemów wytwórczych. PWr. Wrocław 2005
5. Posinasetti Nageswara Rao. Manufacturing Technology: Metal Cutting and Machine Tools. Tata McGraw-Hill Education, 2000

Result of average student's workload

Activity	Time (working hours)
1. Lecture	30
2. Consultations	18
3. Preparing to pass	15
4. Examination of lectures	2

Student's workload		
Source of workload	hours	ECTS
Total workload	65	4
Contact hours	50	3
Practical activities	0	0