STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
Basics of Technological Equipment Construction	**1010642231010640331**

Field of study	Profile of study (general academic, practical)	Year /Semester
Mechanical Engineering	**(brak)**	**2 / 3**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Mechatronics	**Polish**	**obligatory**

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

No. of hours	No. of credits
Lecture: **2** Classes: **-** Laboratory: **-** Project/seminars: **1**	**3**

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	**3 100%**
Technical sciences	**3 100%**

Responsible for subject / lecturer:

Phd. eng. Ryszar Raczyk
email: ryszard.raczyk@put.poznan.pl
tel. 616652054
Working Machines and Transportation
Piotrowo 3, 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Fundamentals of Machine Design. Basics of hydraulics and pneumatics. Theory of mechanisms. Basic knowledge of control technology.
2	**Skills**	Define the functions and responsibilities of machines, Design of mechanical and mechatronics.
3	**Social competencies**	Acquiring engineering knowledge in the field of mechanical engineering, machine control systems and computer aided manufacturing.

Assumptions and objectives of the course:

-Introduction to the design, operation and control of process equipment, especially machine tools.

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

Knowledge:

1. Knowledge of modern manufacturing technology equipment, the definition of the technological parameters - [K2A_W11]
2. Has knowledge of the life cycle of equipment, the rules for their proper operation, taking into account the safety and ergonomics - [K2A_W08, K2A_W13]
3. Has knowledge of modern techniques of measurement and data registry - [K2A_W15, K2A_W20]

Skills:

1. Able to develop the overall design of the machine technology, using modern CAD tools - [K2A_U07]
2. It can be programmed process technology manufacturing machinery parts - [K2A_U10]
3. He can advise on the selection of equipment for production line - [K2A_U15]

Social competencies:

1. Understanding the needs of education, can inspire and suggest courses of study - [K2A_K01]
2. He sees and understands the consequences of non-technical aspects and activities in mechanical engineering, including the need to protect the environment - [K2A_K02]
3. Awareness of the social role of mechanical engineer as being creative, entrepreneurial, well interacting in the group - [K2A_K03, K2A_K04, K2A_K05]

Assessment methods of study outcomes

LECTURE: - credit on the basis of the written test

EXERCISE: - Passing project

Course description

Geometrical and physical structure of the machine technology. Kinematics, propulsion systems and the selection of the drive motor. Spindles and machines working groups. Bodies and guides in mechanical engineering. Cooling and lubricating the machine. The measurement systems of technological equipment. Machine control technology. Development trends in mechanical engineering technology.

Basic bibliography:

1. Wrotny L.T.: Projektowanie obrabiarek WNT Warszawa 1975
2. Wrotny L.T.: Podstawy konstrukcji obrabiarek WNT 1973
3. Białek W. Maszyny technologiczne OW PW 1995
4. Honczarenko J.: Obrabiarki sterowane numerycznie WNT Warszawa 2008

Additional bibliography:

1. Kosmol J.: Automatyzacja obrabiarek i obróbki skrawaniem WNT Warszawa 2000
2. Grajdek R.: Projektowanie obrabiarek. Napęd główny obrabiarek ogólnego przeznaczenia Wydawnictwo PP 2003
3. Białek M. Bacia A.: Maszyny technologiczne w konwencjonalnej technologii formującej i kształtującej Wyd. PW W-wa 2002

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	30
2. Strengthening the lecture	5
3. Consultation on the material given in lectures	2
4. Exam Preparation	5
5. Participation in the exam	2
6. Prepare for Training	5
7. Participation in exercises	15
8. Strengthening exercises content	5
9. Consultation on the material submitted to the exercises	4
10. Preparing to pass exercises	5
11. Participation in completion of training	2

Student's workload

Source of workload	hours	ECTS
Total workload	80	3
Contact hours	55	2
Practical activities	36	1