

Course code:

Course item:

1. INFORMATION ABOUT THE COURSE

a. Basic information

Course title	<i>Machine-Tools</i>
Field of study	<i>Mechanical Engineering</i>
Cycle	<i>first degree</i>
Study profile	<i>general academic</i>
Study mode	<i>full-time</i>
Specialism	<i>Machine technology</i>
Unit responsible for the field of study	<i>Faculty of Mechanical Engineering</i>
Lecturer	<i>Andrzej Skibicki, PhD</i>
Introductory courses	<i>The basics of entrepreneurship. Design of technological processes.</i>
Prerequisites	<i>The scope of knowledge / skills / social competences resulting from the introductory subjects, basic knowledge of technical mechanics and of basic of machine</i>

b. Semester timetable

Semester	Lectures (W)	Classes (C)	Laboratories (L)	Project classes (P)	Seminars (S)	Fieldwork (T)	ECTS credits ECTS*
VI	15		15				3

C. Assumed outcomes and aims - aims bind the course programme with the study programme and are referred to in learning outcomes point 2

2. LEARNING OUTCOMES (acc. to National Qualifications Framework)

No.	Description of learning outcomes	Reference to learning outcomes for the field of study	Reference to learning outcomes for the area of study
KNOWLEDGE			
K1	has knowledge of manufacturing engineering: techniques, processes and machines.	K_W10	P6S_WG
SKILLS			
S1	is able to plan the production process of simple machines and devices and to initially estimate its costs	K_U06	P6S_UW
S2	has the ability to self-study, inter alia, to improve professional competences	K_U12	P6S_UU
SOCIAL COMPETENCES			
SC1	is aware of the importance and understands the non-technical aspects and effects of a mechanical engineer's activity, including its impact on the	K_K04	P6S_KO

	environment, and the related responsibility for decisions		
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3. TEACHING METHODS

multimedia lecture, laboratory and other methods, e.g. videos, books, catalogues, diagrams, blackboard, on-line techniques, exercise workbook classes, lectures, brainstorming, discussion, etc.

4. METHODS OF EXAMINATION

final lecture written or oral exam, partial or final report after the laboratory, class attendance

5. COURSE CONTENT

Specify the content separately for each type of classes in accordance with point I.B. Lecture	Classification of machine-tools - criteria. General building and work of some types of machine-tools: lathes, milling machines, drilling machines, grinders, borers, broaching machines, slotters, planers, erosive machines. Processes of workpieces shaping. Control systems of machine-tools units. Tests of machine-tools state – kinds, range and methods. The place and meaning of machine-tools in industry. Development of machine-tools building. Final summary.
Laboratory	Geometric accuracy of turning and milling machines, stiffness of turning and milling machines, kinematical accuracy of milling machine, standard accuracy, tests of lathe and grinding machine. Summary of the course cycle.

6. VALIDATION OF LEARNING OUTCOMES

Learning outcome	Form of assessment (for example:)					
	Oral examination	Written examination	Test	Project	Report	Class attendance
K1		x			x	x
S1 – S2		x			x	x
SC1		x			x	x

7. LITERATURE

Basic literature	1. Youssef H.A., Hofy H.E.: Machining Technology Machine Tools and Operations, CRC Press, 2008 2. Boothroyd G., Knight W.A.: Fundamentals of Machining and Machine Tools Second Edition, Scripta Book Company, 1989
Supplementary literature	1. Kosmol J., 2000. Automatyzacja obrabiarek i obróbki skrawaniem. WNT Warszawa

8. TOTAL STUDENT WORKLOAD REQUIRED TO ACHIEVE EXPECTED LEARNING OUTCOMES EXPRESSED IN TIME AND ECTS CREDITS

Student's activity		Student workload– number of hours
Classes conducted under a direct supervision of an academic teacher or other persons responsible for classes	Participation in classes indicated in point 1.b	30
	Supervision hours	4
Student's own work	Preparation for classes	20
	Reading assignments	20
	Other (preparation for exams, tests, carrying out a project etc)	16
Total student workload		90
Final number of ECTS credits		3