

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Standarization		Code 1010634171010630543
Field of study Mechanical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 4 / 7
Elective path/specialty Thermal Engineering	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 18 Classes: - Laboratory: - Project/seminars: -		No. of credits 1
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 %) 1 100% 1 100%
Responsible for subject / lecturer: Dr hab. inż. Jarosław Bartoszewicz, prof. nadzw email: jaroslaw.bartoszewicz@put.poznan.pl tel. 61 665-2331 Wydział Maszyn Roboczych i Transportu http://www.fwmt.put.poznan.pl/		Responsible for subject / lecturer: dr inż. Rafał Urbaniak email: rafal.urbaniak@put.poznan.pl tel. 061 665-2331 Wydział Maszyn Roboczych i Transportu http://www.fwmt.put.poznan.pl/
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	The Student has a basic knowledge about machines Thermo-flow, creating a series of technology and the fundamentals of Economics.
2	Skills	The Student knows how to use the concepts and methods in engineering Thermo-flow. The Student is able to use the acquired knowledge to the analysis of technological strings with particular emphasis on the economic aspects and the environmental burden.
3	Social competencies	The Student is able to work in a group, taking in the various roles on posed in front of him. The Student has autonomy in solving problems, the acquisition and improvement of acquired skills and knowledge.
Assumptions and objectives of the course: -Knowledge of the theoretical and practical problems related to the basic standards and standardization in heat technique.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. . It has an elementary knowledge of the law, and in particular the law on security, copyright and the protection of industrial property and its impact on the development of techniques - [K1A_W22] 2. . Has knowledge of construction, methods of construction, production and operation of a select group of working machines, thermal and flow under the profile Heat Technique - [K1A_W24]		
Skills: 1. Can obtain information from literature, the Internet, databases, and other sources. Can integrate the information obtained to interpret and draw conclusions from them, and create and justify reviews - [K1A_U03] 2. Can search directories and on the pages of the manufacturers of ready machinery components for use in your own projects - [K1A_U16] 3. . It can assess the cost of material, environmental and labor for the execution of simple machines - [K1A_U22] 4. Can use the basic technical standards for unification and security and recycling - [[K1A_U23]		
Social competencies: 1. Understand the need for continuous training opportunities - [K1A_K01] 2. He can think and act in an entrepreneurial way - [K1A_K05]		

Assessment methods of study outcomes		
- Seminar on literacy		
Course description		
<p>- Historical development of standardization in the world and in Poland. Definitions and basic concepts in normalization. The functions and objectives of standardization; the relationship between standardization, and unification process of normalization. International standardizations and the European. Standards documents, national, regional and international; their nature, mutual ties and the relationship to other laws. The use of standards and Standardization information system directories. The technical standards and the quality of products and standardization in the design (the principle of quality control, statistical control of quality, ISO 9000, TQM). System of certification of products in Poland, the legal provisions and procedures in the process of implementation of the new product on the market. Technical standards and regulations-on the basis of the functioning of the manufacturer on the EU market. Machinery Directive, low-voltage and electromagnetic compatibility. Establishment of the essential requirements in harmonized standards. The structure of the harmonized standards. Principles of risk assessment.</p>		
Basic bibliography:		
<p>1. R. Kolman, K. Krukowski, Nowoczesny system jakości. Oficyna Wydawnicza Ośrodka Postępu Organizacyjnego, Bydgoszcz 1997. 2. Polskie Normy, Normy Europejskie (EN) i międzynarodowe (ISO) z obszaru obejmującego technikę ciepłą 3. Biuletyny Polskiego Komitetu Normalizacyjnego.</p>		
Additional bibliography:		
<p>1. Dokumenty wydane przez Polskie Centrum Badań i Certyfikacji</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Preparing for a lecture	2	
2. Participation in the lecture	18	
3. Lecture recording	2	
4. Consultation	1	
5. Preparation to the exam	6	
6. Participation in the exam	1	
Student's workload		
Source of workload	hours	ECTS
Total workload	30	1
Contact hours	20	1
Practical activities	0	0