

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Normative Management of Quality		Code 1010642221010646534
Field of study Mechanical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 2
Elective path/specialty Mechatronics	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: - 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: professor Zbigniew Klos email: zbigniew.klos@put.poznan.pl tel. 61 665 2231 Maszyn Roboczych i Transportu ul. Piotrowo 3, 60-965 Poznań		Responsible for subject / lecturer: PhD. Krzysztof Koper email: krzysztof.koper@put.poznan.pl tel. 61 665 2110 Maszyn Roboczych i Transportu ul. Piotrowo 3, 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student has fundamental knowledge on mathematics, metrology, statistics, optimization and basics of machine construction.
2	Skills	Student possesses ability of use of knowledge in practical applications of quality, as well as ability of finding, interpretation and application of procedures of compulsory directives.
3	Social competencies	Student has ability of group work, interdisciplinary co-operation, is self-reliant and has ability of undertaking rational decisions.
Assumptions and objectives of the course: -Transmitting to the students the knowledge of fundamental issues connected with European Union standards and regulations, like: ISO 9001, ISO 14001, ISO 18000 as well as requirements dealing with CE certification of goods.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Has general knowledge in the field of standardization, recommendations and EU directives, international, national and industry standards in the area of quality. - [K2A_W09]		
2. Has a basic knowledge of quality management systems. - [K2A_W15]		
3. Has an extended knowledge of the standards for machines in the field of methods of calculation and testing, safety, including road safety, environmental protection as well as the mechanical and electrical interface. - [K2A_W21]		
Skills:		
1. Is able to develop a maintenance and safety manual for a designed machine or a vehicle from the selected equipment group. - [K2A_U12]		
2. Is able to advise on the selection of machines within the selected equipment group, using quality valuation methods. - [K2A_U14]		
3. Is able to assess potential negative impacts for the natural environment and humans, originating from the designed machine or a vehicle from the selected equipment group. - [K2A_U15]		
4. Is able to develop technical description, market offer and design documentation for a complex machine from the selected equipment group. - [K1A_U16]		
Social competencies:		

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| <p>1. Understands the need for lifelong learning; is able to inspire and organize the learning process of others. - [K2A_K01]</p> <p>2. Is aware of and understands the importance and impact of non-technical ? quality oriented ? aspects of mechanical engineering activities and its impact on the environment. - [K2A_K02]</p> <p>3. Is able to interact in a group, taking on the different roles. - [K2A_K03]</p> |
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Assessment methods of study outcomes		
-Test control, case analysis		
Course description		
<p>1. Term ?quality?, shaping of quality, quality costs - Quality ? definitions, interpretations, attributes of quality. Active shaping of quality. Classification of quality costs.</p> <p>2. Quality management. Quantitative valuation of quality - Fundamentals of quality management. Quality assurance and quality management. Total Quality Management. Qualitative methods of quality valuation.</p> <p>3. Review of standard systems of quality - Introduction to standard management of quality ISO 9000 family of standards ? structure and scope analysis. Documentations of ISO 9000 systems. ISO quality systems implementation into organizations.</p> <p>4. Other standards - Environmental and safety standards ? structure and scope. Integrated systems of quality, environment and safety.</p> <p>5. Producer responsibility - Regulations concerning legal responsibility of producer for the products. European conformity ? CE: principles, procedure of application and approval. Case studies of CE application. Principles of admission of goods to the commercial turnover: free and compulsory systems of conformity evaluation.</p> <p>6. European accreditation - European structure and system of accreditation. National and sector systems of conformity evaluation.</p>		
Basic bibliography:		
<p>1. R. Kolman; Inżynieria jakości, PWE, Warszawa 1992</p> <p>2. S. Adamczak, W. Makiela; Podstawy metrologii i inżynierii jakości dla mechaników, WNT, 2010</p> <p>3. Dyrektywy Unii Europejskiej - branżowe</p> <p>4. Oznakowanie CE - procedury</p>		
Additional bibliography:		
1. Adamczak, W.Makiela; Metrologia w budowie maszyn, WNT, 2004		
Result of average student's workload		
Activity	Time (working hours)	
1. Lecture participation	15	
2. Consolidation of lecture content	5	
3. Consultation	2	
4. Preparation for assessment	6	
5. Assessment participation	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	30	1
Contact hours	19	1
Practical activities	0	0