

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Quality Engineering		Code 1010611251010610240
Field of study Transport	Profile of study (general academic, practical) (brak)	Year /Semester 3 / 5
Elective path/specialty Food Transport	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: 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		ECTS distribution (number and %)
Responsible for subject / lecturer: prof. dr hab. inż. Zbigniew Klos email: zbigniew.klos@put.poznan.pl tel. 61 665 22 31 MRiT ul. Piotrowo 3, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student has fundamental knowledge about management of organizations and fundamental knowledge on innovativity and innovation development
2	Skills	Student possesses ability of perceiving and associating of phenomena occurring in management of market oriented organizations and is able to interpret them, draw practical conclusions and to formulate opinions
3	Social competencies	Student has the awareness of importance and understands the effects of undertaking innovative, market oriented, activities
Assumptions and objectives of the course: Transmitting to the students the knowledge of fundamental issues connected with understanding the role of quality category in modern economy, specially in the food transportation sector and acquainting them with basic tools of quality engineering implementation in organizations.		
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]		
Skills: 1. Is able to prepare a scientific paper in a foreign language on the quality issues, based on literature and other sources of information, including online sources and submit an oral presentation in this field. - [K2A_U02] 2. Is able to advise on the selection of machines within the selected equipment group, using quality valuation methods. - [K2A_U09]		
Social competencies: 1. 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] 2. Is aware of social role of mechanical engineer, understands the need for and is able to deliver opinions and knowledge in the field of fundamental quality issues. - [K2A_K06]		
Assessment methods of study outcomes		
Exam, test		

Course description		
<p>1. Terms "Quality" and "Quality engineering", their scope, quality costs. Quality ? definitions, interpretations. Attributes of quality. Quality engineering ? topic and scope. Classification of quality costs. Food related conditions of transport quality. (3h)</p> <p>2. Shaping of quality in life cycle. Conditions of quality shaping, showing the quality in maintenance and liquidation phase. Tools of quality control.</p> <p>3. Quality management. Quality assurance and quality management. Total Quality Management: Deming principles, Japanese approach (5S, kaizen), EFQM model. Introduction to normative management of quality.</p> <p>4. Quality of services. Specificity of service quality. Basic elements of the system of service quality. Operational elements of the system of service quality.</p> <p>5. Quality in road transport. Specificity of quality in transport. Quality of transport service and quality of transport system. Food products susceptibility for transportation. Quality determinants of processes in vehicle recycling sector.</p>		
Basic bibliography:		
<p>1. Hamrol A., Mantura W., Zarządzanie jakością, WN PWN, Warszawa 2009</p> <p>2. Kolman R., Kwalitologia. Wyd. Placet, Warszawa 2009</p> <p>3. Grudowski P., Podejście procesowe w systemach zarządzania jakością w małych i średnich przedsiębiorstwach. Wyd. PG, Gdańsk 2007</p> <p>4. Pojazdy chłodnicze w transporcie żywności, W. Zwierzycki, K. Bieńczyk (red.). Wyd. Systherm Serwis, Poznań 2006.</p>		
Additional bibliography:		
<p>1. Urbaniak M., Zarządzanie jakością, środowiskiem oraz bezpieczeństwem w praktyce gospodarczej. Wyd. Difin, Warszawa 2007</p> <p>2. Kłós Z., Elementy inżynierii jakości i ekologii maszyn. Wyd. Politechniki Poznańskiej, Poznań 1998</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in lecture	15	
2. Consolidation of lecture content	3	
3. Consultation	2	
4. Preparation for assessment	8	
5. Assessment participation	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	30	1
Contact hours	19	1
Practical activities	0	0