STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Pro-quality Systems Engineering		**1011102211011105143**
Field of study	Profile of study (general academic, practical)	Year /Semester
Engineering Management - Full-time studies -	**(brak)**	**1 / 1**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Quality Systems and Ergonomics	**Polish**	**elective**
Cycle of study:	Form of study (full-time,part-time)	
Second-cycle studies	**full-time**	
No. of hours		No. of credits
Lecture: **15** Classes: **15** Laboratory: **-** Project/seminars: **-**		**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 %)

Responsible for subject / lecturer:

dr hab. inż. Agnieszka Misztal
email: agnieszka.misztal@put.poznan.pl
tel. 61 665 34 37
Wydział Inżynierii Zarządzania
ul. Strzelecka 11 60-965 Poznań

Responsible for subject / lecturer:

dr inż Małgorzata Jasiulewicz-Kaczmarek
email: malgorzata.jasiulewicz-kaczmarek@put.poznan.pl
tel. 61 665 34 65
Wydział Inżynierii Zarządzania
ul. Strzelecka 11 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has a basic knowledge of systems theory, mathematical statistics, elements of the systemic approach to pro quality management
2	**Skills**	The student is able to discern system, technical, organisational and economic aspects of the pro quality management
3	**Social competencies**	The student is aware of the need fro engineering development to pro quality systems

Assumptions and objectives of the course:

The students are given the educational content relating to engineering aspects of pro quality systems, in particular as regards the quality assessment, the methods of the products? quality control level and critical points of process control as well as their supervision

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

Knowledge:

1. Has knowledge of quality, quality planning, inspection and quality control - [K2A_W01]
2. Has knowledge of legal norms, standards and their impact on the organization - [K2A_W01, K2A_W12]

Skills:

1. Can discern systemic, non-technical, organisational, socio-economical and economical aspects - [K2A_U06]
2. Can notice cause and effect dependences dealing with basic engineering problems that regard to quality management system objectives - [K2A_U06]
3. Can characterize typical engineering tools in quality management - [K2A_U02]

Social competencies:

1. Can detect dependencies in terms of cause and effect consequences in the process of objectives implementation. He can also rank the alternative or competing tasks according to their relevance - [K2A_K03]
2. Is aware of the interdisciplinary character of knowledge and skills that are needed to solve complex problems of an organization and a necessity to create interdisciplinary teams - [K2A_K06]

Assessment methods of study outcomes

Formative assessment:

- Classes: current assessment tasks solutions during the classes
- Lectures: the current assessment of the participation in a discussion on the topics covered during previous lectures

Collective assessment:

- Written test (answers to open questions on the basis of the material covered curing the lectures in 14-15 week of a semester)
- Subject grade (lectures and classes combined) is an average of the grade from lectures and classes.

Course description

Analysis and risk assessment of the hazards and the effectiveness of the measures. Characteristics and components determining the quality of the products. Evaluation method of the quality level of products. Methods of technical control in the manufacturing process with particular emphasis on the use of resources. Analysis of critical control points and the selection of their supervision means. The use of statistical methods in engineering processes and elements of reliability theory

Didactic methods:

problem lecture, discussion seminar, case study, lesson, situational method, demonstration method, observation method

Basic bibliography:

1. Prussak W., Jasiulewicz-Kaczmarek M., Elementy inzynierii systemow zarządzania jakością (Elements of the quality management systems engineering), Wyd. Politechniki Poznańskiej, Poznań 2010.
2. Hamrol A., Zarządzanie jakością z przykładami (Quality management with examples), PWN, Warszawa 2008.
3. Łunarski J., Zarządzanie jakością. Standardy i zasady (Quality management. Standards and policies), WNT, Warszawa 2008.
4. Starzyńska B., Hamrol A., Grabowska M., Poradnik menedżera jakości (Quality Manager Guide), Wyd. Politechniki Poznańskiej, Poznań 2012.

Additional bibliography:

1. Olejnik T., Wieczorek R., Kontrola i sterowanie jakością (Inspection and quality control), PWN, Warszawa-Poznań 1982.
2. Peslowa F., Borkowski S. (red.), Inżynieria jakości w praktyce (Quality engineering in practice), PTM, 2007.

Result of average student's workload

Activity	Time (working hours)
1. Lectures	15
2. Classes	15
3. Classes consultation	20
4. Preparation for classes	30
5. Preparation for an exam	20
6. Final exam	2

Student's workload

Source of workload	hours	ECTS
Total workload	92	3
Contact hours	52	2
Practical activities	15	1