STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
(-)	**1011105311011125142**

Field of study	Profile of study (general academic, practical)	Year /Semester
Engineering Management - Part-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	**part-time**

No. of hours	No. of credits
Lecture: **10** Classes: **-** 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 %)
technical sciences	**3 100%**
Technical sciences	**3 100%**

Responsible for subject / lecturer:

dr inż. Anna Mazur
email: anna.mazur@put.poznan.pl
tel. 0048 61 665 33 65
Faculty of Engineering Management
ul. Strzelecka 11 60-965 Poznań

Responsible for subject / lecturer:

dr inż. Małgorzata Jasiulewicz-Kaczmarek
email: malgorzata.jasiulewicz-kaczmarek@put.poznan.pl
tel. 00 48 61 665 33 65
Faculty of Engineering Management
ul. Strzelecka 11 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student defines and describes the basic concepts and principles of quality management, fundamentals of organization and management.
2	**Skills**	The ability to verify and assess the phenomena in the implementation of the processes in enterprises. Ability to interpret and describe the insights and observations.
3	**Social competencies**	The student is aware of the importance of quality for its receivers and creators of its level.

Assumptions and objectives of the course:

1. Familiarizing the students with the theory regarding rules for the application of the principles, methods and techniques used in quality management.
2. Students acquire practical skills of principles application, methods and techniques in the process of solving quality prolems in an industry.

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

Knowledge:

1. Defines the following concepts: the principle, method, technique, pro quality tool - [K2A_W01]
2. Describes the phenomena occurring within the organization, process and production in order to select appropriate tools for their visualization and analysis - [K2A_W01]
3. Recognizes and names quality management principles, methods, techniques and tools - [K2A_W01]
4. Explains the pros and cons and the application of the principles, methods, techniques and tools in the quality management process, production and operations - [K2A_W01]
5. Can characterize the scrutinized situation and choose the appropriate pro quality principles, methods, techniques and tools - [K2A_W01]
6. Can explain how to apply the principle, method, technique and a tool - [K2A_W01]
7. Points to the best pro quality principles, methods, techniques and tools o apply to a particular problem - [K2A_W12]
8. Chooses principles, methods, techniques and pro quality tools to an existent problem - [K2A_W12]
9. Formulates problem tasks in terms of quality management in order to address them through the principles, methods, techniques and tools - [K2A_W12]

Skills:

1. Can interpret the rules to be applied in the quality management - [K2A_U02]
2. Can design a quality management system policy for the selected quality problem in the organisation or at the level of the process - [K2A_U06]
3. It has the ability to practically apply the principles, methods, techniques and tools in quality management - [K2A_U06]
4. Estimates and interprets the data using tools and pro quality techniques - [K2A_U06]
5. Creates a database necessary for the application of principles, methods, techniques and tools in quality management - [K2A_U06]
6. By means of the methods, tools and techniques, he evaluates the quality level of the process and the production - [K2A_U02]
7. Evaluates the maturity level of a pro quality organization by means of principles - [K2A_U02]
8. Can verify the rules, methods, techniques and tools of quality management - [K2A_U06]
9. Presents the results and conclusions based on the application of the principles, methods, techniques and tools to the management of the company - [K2A_U02]
10. On the basis of the results obtained from the application of the principles, methods, techniques and tools, he decides aout some possible solutions to the problem - [K2A_U02]

Social competencies:

1. Is aware of the meaning of quality and its level in the processes, activities and products - [S2A_K06]
2. Is capable of assessing the correctness of qualitative phenomena - [S2A_K06]
3. Is determined to work towards improving the quality of phenomena that exist in the natural conditions of business functioning - [K2A_K03]
4. Is willing to undertake improvement activities - [K2A_K03]
5. As a result of training, the student is aware of and understands the aspects and the effects of activities in the field of quality management - [K2A_K03]

Assessment methods of study outcomes

Formative assessment:

Lectures: an assessment of the answers given by the students on the material covered during lectures

Collective assessment:

Lectures:

- multiple-choice test, in which at least one of the answers is correct, each correct answer is scored 0-1
- test is passed after achieving at least 55% of the correct answers. The student can write an exam after he passed the classes
- overview of the test

Course description

1. Quality management basics
2. Rules, methods, tools, techniques of quality management
- basic concepts related to quality management
- classification of principles, methods, techniques and tools of quality management
3. Principles of quality management (principle of teamwork, Kaizen, Poka-Yoke, zero defects, the eight principles of quality management, fourteen principles of Deming's, quality management principles that are used in researching and developing products)
4. Quality management methods (FMEA, QFD, SPC, DOE, 8 d, 5s)
5. Quality Management Tools (Six Sigma, Ishikawa diagram, Pareto diagram, 5why-Lorenza, flow diagram, Shewhart, histogram, brainstorming, new tools of quality management
6. Quality management techniques.

DIDACTIC METHODS:

- an informative lecture,
- problem solving,
- lecture lecture,
- talk,
- discussion in the form of a snowball,
- project method,
- workshop method,
- demonstration method.

Basic bibliography:

1. Gołaś H., Mazur A., Zasady, metody i techniki wykorzystywane w zarządzaniu jakością, Wydawnictwo Politechniki Poznańskiej, Poznań 2010.

2. Grabowska M., Hamrol A., Starzyńska B., Poradnik menedżera jakości, Wydawnictwo Politechniki Poznańskiej, Poznań 2010.

3. Hamrol A., Mantura W., Zarządzanie jakością ? teoria i praktyka, Wydawnictwo Naukowe PWN, Warszawa 2005.

4. Hamrol A., Zarządzanie jakością z przykładami, Wydawnictwo Naukowe PWN, Warszawa 2005.

5. Koronacki J., Nieckuła J., Thompson J., Techniki zarządzania jakością, od Shewharta do metody Six Sigma, Akademicka Oficyna Wydawnicza Exit, Warszawa 2005.

6. Łagowski E., Żuchowski J., Narzędzia i metody doskonalenia jakości, Wydawnictwo Politechniki Radomskiej, Radom 2004.

7. Łuczak J., Matuszak-Flejszman A., Metody i techniki zarządzania jakością, Quality Progress, Poznań 2007.

8. Konarzewska-Gubała E., Zarządzanie przez jakość. Koncepcje, metody, studia przypadków, WAE, Wrocław 2003.

9. Wolniak R., Skotnicka-Zasadzień B., Metody i narzędzia zarządzania jakością. Teoria i praktyka, Wydawnictwo Politechniki Śląskiej, Gliwice 2011.

Additional bibliography:

1. Hamrol A., Zapewnianie jakości w procesach wytwarzania, Wydawnictwo Politechniki Poznańskiej, Poznań 1995

2. Grudowski P., Hamrol A., Zymonik Z., Zarządzanie jakością i bezpieczeństwem, Polskie Wydawnictwo Ekonomiczne, Warszawa 2013

3. Łunarski J., Zarządzanie jakością ? standardy i zasady, Wydawnictwo WNT, Warszawa 2012.

Result of average student's workload

Activity	Time (working hours)
1. Lectures	10
2. Consultations	20
3. Preparation for an test	13
4. Test	2

Student's workload

Source of workload	hours	ECTS
Total workload	45	3
Contact hours	30	2
Practical activities	0	0