STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
Fundamentals of Product Engineering and Quality Management	

Field of study	Profile of study (general academic, practical)	Year /Semester
Environmental protection technologies	**general academic**	**1 / 2**
Elective path/specialty	Subject offered in: **polish**	Course (compulsory, elective) **compulsory**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**full-time**

No. of hours	No. of credits
Lecture: **2** Classes: **-** Laboratory: Project/seminars: **-**	

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
basic	**from this field**

Education areas and fields of science and art	ECTS distribution (number and %)
Technical sciences	**2**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Fundamental knowledge of mathematics, physics and chemistry and other scientific areas connected with this direction of studies
2	**Skills**	Student should be able to think logically, use information from the area of science and technology
3	**Social competencies**	Student understands the need to learn systematically and raise his vocational and social skills

Assumptions and objectives of the course:

The aim of this subject is to gather knowledge from the area of product engineering basics and quality management, reinforcement of pro-quality and pro-ecology awareness and educating of practical use of chosen quality management instruments in the whole product life cycle.

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

Knowledge:

1. Student should have a basic knowledge concerning quality planning and assurance in product design, manufacturing and distribution phases [K_W15]
2. Student knows basic rules of quality management and pro-ecology designing of product [K_W15, K_W13]

Skills:

1. Student should use in practice chosen methods of designing for quality (QFD, FMEA) [K_U15, K_U16, K_U18]
2. Student should use in practice chosen methods of monitoring and control manufacturing processes (SPC) [K_U15]

Social competencies:

1. Student is aware of and understands an importance of paraengineering aspects and effects of engineering activity and its influence on environment and responsibility for decisions made connected with it [K_K02]
2. Student during formulating and solving tasks should notice their system and paraengineering aspects [K_K02, K_K04]

Assessment methods of study outcomes

University test.

Course description

Definitions of quality. Categories of product. Perceiving of product quality. Quality management. Quality engineering. Creating quality in product life cycle. Design, manufacturing and exploitation quality. Quality in extended product life cycle. Design quality – methods and tools of designing for quality. Manufacturing quality – methods of examining and controlling quality of processes with the special emphasis on statistical process control (basics of SPC). Recycling, disassembly and product package ideas in distribution of product phase.

Basic bibliography:

Hamrol A., Zarządzanie jakością z przykładami. Wydawnictwo PWN, Warszawa 2008.

Additional bibliography:

Starzyńska B., Grabowska M., Poradnik menedżera jakości – kompendium wiedzy o narzędziach jakości, Wydawnictwo Politechniki Poznańskiej, Poznań 2010

Result of average student's workload

Activity	Time (working hours)
1. lecture	30
2. consultation to the lecture	3
3. preparation for test	10
4. university test	2

Student's workload

Source of workload	hours	ECTS
Total workload	45	2
Contact hours	30	1
Practical activities	0	0