COURSE DESCRIPTION CARD - SYLLABUS

Course name

Fundamentals of product engineering and quality management

Course

Field of study

Chemical and process engineering

Year/Semester

1/2

Area of study (specialization)

Profile of study

general academic

Level of study

First-cycle studies

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

30

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

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Faculty of Mechanical Engineering

Piotrowo Street, No 3 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

The student has basic knowledge in the field of exact sciences (mathematics, physics, chemistry) and other areas relevant to the field of study; can effectively use the information obtained; understands the need for further training and raising their professional and personal competences.

Course objective

The aim of the course is to provide students with knowledge of the basics of product engineering and quality management, to learn a wide range of methods used in designing and in the production phase of a product, as well as to consolidate pro-quality awareness.

Course-related learning outcomes

Knowledge

The student has basic knowledge of design methods for quality (QFD, FMEA), methods of testing and quality inspection of products (SKO) and process control (SPC); he knows the requirements of the ISO 9000 series of standards as the basis for the design of quality management systems (K_W17, K_W16, K_W14).

Skills

The student is able to select and apply the methods known to suit the phase in the product life cycle; he is able to design selected elements of the QMS quality management system (K_U09, K_U10, K_U05).

Social competences

The student is aware of the importance of the effects of engineering activities, including its impact on the environment, and the associated responsibility for the decisions taken; he is able, while formulating and solving tasks, to see their systemic and non-technical aspects (K_K02, K_K01).

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Colloquium (in the form of a test).

Programme content

Quality definitions. Quality management. Quality management functions / processes. Quality engineering. Shaping quality in the product life cycle. Quality of service. Design, performance and operational quality of the product. Shaping quality in the extended product life cycle. Design methods and tools for quality. Test and quality control methods for products and processes. Statistical process control (basics of SPC). Requirements of the ISO 9000 series standards. Basics of designing quality management systems.

Teaching methods

Lecture; active participation in lectures; consultations

Bibliography

Basic

Hamrol A., Zarządzanie i inżynieria jakości. Wydawnictwo PWN, Warszawa 2017

Additional

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

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	32	1,0
Student's own work (literature studies, preparation for tutorials, preparation for tests/exam) [1]	18	1,0

[1] delete or add other activities as appropriate