



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Fundamentals of product engineering and quality management [S1TCh2>PIPiZJ]

Course

| | |
|---------------------------------------|--------------------------------------|
| Field of study Chemical Technology | Year/Semester 4/7 |
| Area of study (specialization) – | Profile of study general academic |
| Level of study first-cycle | Course offered in Polish |
| Form of study full-time | Requirements compulsory |

Number of hours

| | | |
|----------------|-------------------------|--------------------------|
| Lecture 15 | Laboratory classes 0 | Other (e.g. online) 0 |
| Tutorials 0 | Projects/seminars 15 | |

Number of credit points

2,00

Coordinators

dr hab. inż. Beata Starzyńska prof. PP
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Lecturers

Prerequisites

Student has basic knowledge of the sciences (mathematics, physics, chemistry) and other areas relevant to the field of study; he or she is able to effectively use the information obtained; he or she understands the need for further education and improvement of his or her professional and personal competences.

Course objective

The aim of the course is to gain knowledge of the basics of product engineering and quality management, to get to know a wide range of methods used in the design and manufacturing phase of the product, and to strengthen pro-quality awareness.

Course-related learning outcomes

Knowledge:

1. Student has basic knowledge of design methods for quality (QFD, FMEA), methods of testing and quality control of products and process supervision (SPC). The student knows the requirements of ISO 9000 series standards as a basis for designing quality management systems.

Skills:

1. Student is able to select and apply the methods he or she learns according to the phase in the product life cycle.
2. The student is able to design selected elements of the Quality Management Systems QMS.

Social competences:

1. Student is aware of the importance of the effects of engineering activities, including their impact on the environment, and the related responsibility for decisions made.
2. Student is able to see the systemic and non-technical aspects of tasks while formulating and solving them.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Colloquium (in the form of a test). Development and passing of projects.

Programme content

Definitions of quality. Quality management. Quality management functions/processes. Quality engineering. Quality shaping in product life cycle. Quality of service. Design, manufacturing and operational quality of a product. Quality shaping in the extended product life cycle. Design methods and tools for quality. Methods of testing and quality control of products and processes. Statistical process control (SPC basis). Requirements of ISO 9000 series standards. Basis for designing quality management systems.

Course topics

none

Teaching methods

Lecture; active participation in classes; projects, 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 | 2,00 |
| Classes requiring direct contact with the teacher | 30 | 1,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 20 | 1,00 |