



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Student Internship [N1IBiJ1>PRAK]

### Course

Field of study

Safety and Quality Engineering

Year/Semester

3/6

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

part-time

Requirements

compulsory

### Number of hours

Lecture

0

Laboratory classes

0

Other

160

Tutorials

0

Projects/seminars

0

### Number of credit points

5,00

### Coordinators

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### Lecturers

### Prerequisites

The student has a knowledge about the complexity and multiple aspects of OHS management systems in an organization, and engineering knowledge in relation to broadly understood issues of safety engineering and quality. The student has skills to perceive, associate and interpret phenomena occurring in organizations and use them in the area of OHS management and quality management in the organization, with particular emphasis on the engineering area. The student has ability to work in a team and solve problems together in a team. The student has awareness of the importance and necessity of raising one's competences and awareness of taking social responsibility for decisions made in relation to quality management and safety management in the organization.

### Course objective

The aim of the course is to observe, analyze, and evaluate processes related to safety and quality engineering in an organization, as well as to acquire practical skills related to the implementation of managerial and engineering processes carried out in the enterprise.

## Course-related learning outcomes

### Knowledge:

1. Defines advanced issues in quality and technical safety systems, including health and safety principles, and understands their role in preventing risks and minimising their effects, using examples of real systems and procedures in companies [K1\_W02].
2. Explains advanced methods of risk identification, analysis, and estimation in the context of quality and safety in the work environment, illustrating their application through case studies from different industrial sectors [K1\_W03].
3. Describes the principles of ergonomics and environmental protection, explaining their impact on the design of safe and effective working environments [K1\_W05].
4. Characterises the phenomena associated with the life cycle of products and equipment and their impact on quality and safety, applying process optimisation theories and models [K1\_W06, K1\_W07].
5. Demonstrates an understanding of the fundamental dilemmas of modern civilisation and development trends in the context of safety and quality engineering, identifying best practices [K1\_W10].
6. Recognises the interrelationship between the dilemmas of contemporary civilisation and security engineering practices, analysing development trends and their impact on the protection of intellectual property and ethical aspects of professional activity [K1\_W10, K1\_W12].

### Skills:

1. Uses a variety of information sources, including quality standards and norms, to analyse and evaluate health, safety and quality management processes in the organisation, demonstrating the ability to critically evaluate and synthesise information [K1\_U01, K1\_U08].
2. Applies analytical, simulation and experimental methods to identify and solve safety and quality problems, including developing proposals for improvements at selected workplaces [K1\_U04, K1\_U07].
3. Plans and implements activities to ensure product/process quality and occupational safety, using the acquired skills to organise team and individual work [K1\_U11].
4. Designs and optimises processes and systems to improve the quality and safety of work, using tools for risk analysis and ergonomics of the workstation, while adhering to best practice and industry standards [K1\_U06, K1\_U07].
5. Develops and implements management and team communication strategies, promoting safety and quality, taking into account social, ethical and organisational aspects [K1\_U02, K1\_U03, K1\_U05].
6. Demonstrates a commitment to continuous improvement of health, safety and quality management practices, developing the ability to update knowledge in response to technological, normative and market changes [K1\_U12].

### Social competences:

1. Develops an awareness of the importance of knowledge, continuous improvement and professional ethics in safety and quality engineering, expanding his/her competences based on the analysis of changes in requirements, standards and technical progress [K1\_K02, K1\_K06].
2. Understands the importance of teamwork and communication in diverse environments, promoting a culture of safety and quality and using various communication techniques [K1\_K07].
3. Recognises cause and effect relationships in the design process, preparing to act responsibly in professional engineering practice [K1\_K01].
4. Promotes professionalism and professional ethics in engineering practice, understanding their role in protecting intellectual property, caring for the environment and ensuring safety and quality of work [K1\_K03, K1\_K06].
5. Takes steps to build and maintain an organisational culture focused on safety and quality, using communication and management skills for effective team collaboration [K1\_K05].

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

### Formative assessment:

It consists of answers to the following questions: Has the Student been properly prepared for the internships (has correctly completed the required documents and provided them to the Supervisor in accordance with the deadlines)? Has the Student consulted any changes regarding the organization of internships? Has the Student prepared the internships report in accordance with the guidelines? Did the Student refer the Supervisor the course of the internship, particularly emphasizing his own ideas

proposed in the company.

Grade of assessment: definitely yes, on average, definitely not.

Summative assessment:

Appraisal of the Supervisor based on the prepared report. The report is prepared in accordance with the internship program.

## Programme content

The program content includes topics on the practical aspects of safety and quality engineering in enterprises in accordance with the internship program for the Safety and Quality Engineering study program.

## Course topics

1. Presentation of the economic entity:

- legal form of the organisation,
- industry/provided services/assortment offered,
- technologies used.

2. Identification and analysis of the company's organisational structure.

3 Analysis of health, safety and quality management processes:

- Identification of main, auxiliary and management processes in the organisation,
- management and administration in the area of health and safety in the company,
- training processes for management and other employees in the field of health and safety,
- planned health and safety reviews and operation of equipment,
- observation of the working environment for compliance with health and safety rules,
- preparation of the company for emergency situations,
- analysis of occupational accidents and near misses (historical data, procedures, register of accidents and near misses),
- collective protection solutions for employees and processes for the selection, use and exploitation of personal protective equipment,
- overview of the company's occupational health and safety solutions,
- ergonomics of the workplace, including: spatial arrangement of the workstation, analysis of ergonomic risk factors (non-neutral positions, excessive physical effort, risk of monotony, rhythm and pace of work, thermal comfort, exposure to vibration) work breaks and rest facilities, material parameters of the work environment (physical, chemical, biological factors) and non-material parameters of the work environment (psychosocial factors),
- interpersonal and group communication on OSH,
- promotion of occupational health and safety issues and the development of quality products/processes,
- planning of product/process quality assurance activities,
- examples of pro-quality methods, tools and techniques used,
- maintaining product/process quality,
- improvement - solutions adopted to improve the quality of products/processes,
- quality control methods used.

4. Description and analysis of the work organisation at the workplace:

- tasks carried out at the selected workstation (types and number of different operations, division of the selected operation into procedures, activities and work movements), as well as the principles of their implementation,
- work standard (quantitative or time-based), how it is determined and updated,
- organisation of the work station (supply of materials and tools, transport, maintenance and repair, quality control, issuing of work to the work station and accounting for the tasks performed).

5. Proposals for improvements to the selected workstation, taking into account health and safety, ergonomics and quality aspects.

6. Other (additional) content agreed with the supervisor of the engineering thesis appropriate to its subject.

## Teaching methods

Classical problem method, situational method, exchange of ideas, SWOT, demonstration method, method of production exercises, method of experiments, workshop method.

## Bibliography

Basic:

1. Regulations of internships for students implemented at Faculty of Engineering Management.
2. Procedures, instructions and descriptions of company processes.
3. Regulations and other company standards.

Additional:

Enterprise documentation available during internships.

### Breakdown of average student's workload

|                                                                                                                                         | Hours | ECTS |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------|------|
| Total workload                                                                                                                          | 160   | 5,00 |
| Classes requiring direct contact with the teacher                                                                                       | 15    | 1,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 145   | 4,00 |