



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Contemporary safety problems [N2IBez1>WPB]

### Course

Field of study

Safety Engineering

Year/Semester

1/1

Area of study (specialization)

Ergonomics and Work Safety

Profile of study

general academic

Level of study

second-cycle

Course offered in

polish

Form of study

part-time

Requirements

compulsory

### Number of hours

Lecture

10

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

10

### Number of credit points

4,00

### Coordinators

### Lecturers

dr inż. Tomasz Ewertowski

tomasz.ewertowski@put.poznan.pl

### Prerequisites

The student has a basic knowledge of issues related to national security and its internal aspect of internal safety and security (protection of citizens' health and life against the effects of natural disasters and technical accidents as well as social unrest and terrorist activities). The student has the ability to acquire information from specified sources and is ready to actively search, systematize and present knowledge in the field of safety.

### Course objective

Systematising basic knowledge related to selected safety theories based on a review of the types and sources of internal safety hazards. Presentation of ways and mechanisms to maintain or restore an acceptable state of safety. Developing skills to solve problems that occur when managing selected safety systems.

### Course-related learning outcomes

Knowledge:

1. A student knows issues in the field of macroergonomics and safety as well as design methodologies, taking into account the safety principles applicable in the given area of activity [P7S\_WG\_02],

2. A student knows issues in the area of safety related to the specificity of internal safety [P7S\_WG\_03],
3. A student knows the issues of risk analysis, hazards and their effects in the environment of the functioning of the entity exposed to the impact of abnormalities [P7S\_WG\_05],
4. A student knows contemporary development trends and best practices used in the field of safety systems shaping and functioning [P7S\_WK\_02],

#### Skills:

1. A student knows how to correctly select the sources and information derived from them, assess the information obtained, critically analyze them, formulate conclusions and comprehensively justify the adopted opinions [P7S\_UW\_01],-
2. A student knows how to prepare and apply the necessary resources to perform work in an industrial environment [P7S\_UW\_05],
3. A student knows how to make a critical analysis of how an organizational unit functions and evaluate existing technical solutions, in particular machines, devices, objects, systems and processes [P7S\_UW\_06],

#### Social competences:

1. A student is aware of the need to recognize the importance of knowledge for effective problem solving in the field of safety engineering and ensuring the possibility of continuous improvement [P7S\_KK\_02],-
2. A student is able to initiate activities related to the formulation and transfer of information and ensuring effective collaboration in society in the field of safety engineering [P7S\_KO\_02],
3. A student is aware of responsibility for own work and readiness to comply with the principles of team work and responsibility for jointly implemented tasks [P7S\_KR\_02].

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

#### Formative assessment:

- a) projects: current assessment (on a scale of 2 to 5) of the tasks assigned,
- b) lectures: presence and activity on lectures (partial points).

#### Summative rating:

- a) projects: average of partial tasks and assessment of the submitted project; credit after passing at least 3.0,
- b) lectures: Test carried out during the last lectures. The test consists of 15 to 20 questions (test and / or open), variously scored. Passing threshold: 55% of points; partial points may increase the final grade.

### Programme content

#### Lecture:

The concept of safety, safety theories and taxonomies of adverse event causes. Factors determining the external and internal state of safety. Types and sources of contemporary hazards. Global, regional, national and local safety. Ways and mechanisms of maintaining safety. Safety systems. Organizations, entities and structures responsible for sector safety and their tasks. Predicting safety status. Preventive actions for safety. Ways to restore acceptable safety status.

#### Project classes:

Analysis of the selected contemporary technical accident consisting of the preparation of factual data, conducting analysis using, among others known contemporary theories of safety and taxonomy of the adverse event causes, and presentation of the implementation of post-event safety recommendations and assessment of their effectiveness along with own suggestions for recommendations.

### Teaching methods

Lecture: multimedia presentation, illustrated with examples on the board.

The project classes: multimedia presentation, illustrated with examples given on a board, which are the basis for performing the tasks given by the lecturer. During classes, a practical method is used.

### Bibliography

#### Basic:

1. Szymonik A. (2011), Organization and functioning of safety systems. Safety management, Publisher

Difin, Warsaw.

2. Klich E. (2010), Flight safety in air transport, Institute of Sustainable Technologies, Radom.

3. Legal regulations regarding the issues discussed.

Additional:

1. Nowak E. (2007), Crisis management in non-military situations, AON, Warsaw.

2. Ficoń K. (2007), Crisis management engineering, BEL Studio Sp. Z.o.o, Warsaw.

3.(collective work) (2009), Integrated transport safety system, collective work, vol. I, II, III, WKŁ, Gdańsk.

4. Korzeniowski L. (2017), Fundamentals of security sciences, Publisher Difin, Warsaw University of Technology.

5. Ewertowski T. (2018), Doskonalenie systemu zgłaszania zdarzeń niepożądanych w organizacjach w kontekście wdrażania przez nie normy ISO 45001:2018, Zeszyty Naukowe Politechniki Poznańskiej.

Organizacja i Zarządzanie - 2018, nr 78, s. 19-34

### Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	20	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	80	3,00