



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Modern safety issues [S2IBiJ1>WPB]

### Course

Field of study

Safety and Quality Engineering

Year/Semester

1/1

Area of study (specialization)

–

Profile of study

general academic

Level of study

second-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

15

Projects/seminars

15

### Number of credit points

4,00

### Coordinators

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### Lecturers

dr inż. Tomasz Ewertowski

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### Prerequisites

The student has a basic knowledge of issues related to national safety 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. Student has structured and theoretically based knowledge and knows the facts and phenomena characteristic of management and quality sciences as well as security engineering [K2\_W01].

2. Student knows in depth the methods and theories used in solving the problems of modern safety engineering, quality, ergonomics and occupational safety and in crisis management [K2\_W03].
3. Student knows in depth the fundamental dilemmas and problems of modern civilization, including legal, political and economic changes related to safety engineering, ergonomics and security as well as crisis management [K2\_W11].

#### Skills:

1. Student is able to properly select sources, including literature, and information derived from them, as well as to evaluate, critically analyze, synthesize and creatively interpret this information, formulate conclusions and comprehensively justify the opinion during the presentation of the results [K2\_U01].
2. Student is able to develop and properly apply methods and tools for solving complex problems characteristic of the area of safety engineering, ergonomics and work safety as well as crisis management or select and apply existing and known methods and tools [K2\_U03].
3. Student is able to identify and recognize threats in the work environment, assess their impact on the individual, organization and its stakeholders, and indicate methods of conduct aimed at minimizing the effects of threats [K2\_U10].

#### Social competences:

1. Student correctly identifies and resolves dilemmas related to broadly understood security, understands the need to make the public aware of the need to shape security in various areas of the functioning of the organization and the state [K2\_K02].
2. Student is ready to initiate activities related to improving safety [K2\_K03].

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

#### Formative assessment:

Lecture: The knowledge acquired during the lecture is verified by one 20-minutes test carried out during the 4th lecture. The test consists of 15 to 20 questions (test and / or open-ended), with different scores.

Passing threshold: 51% of points.

Tutorials: The skills acquired during the exercises are verified on the basis of the current assessment of the assigned tasks and on the basis of the activity in the classroom. Passing threshold: 51% of points.

Projects: Skills acquired during project classes are verified on the basis of partial evaluation of the progress of the project stages, project defense, final evaluation. Passing threshold: 51% of points.

#### Summative assessment:

Lecture: Oral Exam with 3 questions. Passing threshold: 51%.

Classes: arithmetic average of partial grades obtained from individual tasks. Passing threshold: 51%.

Project: average of partial grades, substantive evaluation of the project and evaluation of editing correctness of the project preparation. Passing threshold: 51%.

Grading scale in accordance with part C of the Regulations of First and Second Degree Studies adopted by the Academic Senate of the Poznań University of Technology.

### 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.

Tutorials: The concept of security, Theories of security and taxonomies of causes of undesirable events. Factors determining the state of security: external and internal. Types and sources of contemporary threats. Analysis of contemporary failures, carrying out an analysis using, inter alia, learned contemporary theories of safety and taxonomy of causes of undesirable events as well as presentation of the implementation of safety recommendations after the event and assessment of their effectiveness together with own recommendation proposals.

#### 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 given on the blackboard. The lecture is conducted using distance learning techniques in a synchronous mode. Acceptable platforms: eMeeting, Zoom, Microsoft Teams.

Tutorials: a multimedia presentation, illustrated with examples given on the board, constituting the basis for the implementation of the tasks given by the teacher. The class uses the classic problem method, as well as the method of cases and exercises.

Projects: multimedia presentation, illustrated with examples given on the board, constituting the basis for the implementation of the tasks given by the teacher. During the classes, the practice and design method is used.

## Bibliography

Basic:

1. Szymonik A. (2011), Organizacja i funkcjonowanie systemów bezpieczeństwa. Zarządzanie bezpieczeństwem, Wydawnictwo Difin, Warszawa.
2. Nowak E. (2007), Zarządzanie kryzysowe w sytuacjach niemilitarnych, AON, Warszawa.
3. Klich E. (2010), Bezpieczeństwo lotów w transporcie lotniczym, Instytut Technologii Eksploatacji, Radom.
4. Legal regulations regarding the issues discussed.

Additional:

1. Ficoń K. (2007), Inżynieria zarządzania kryzysowego, Wydawnictwo BEL Studio Sp. Z.o.o, Warszawa.
2. (praca zbiorowa) (2009), Zintegrowany system bezpieczeństwa transportu, praca zbiorowa, t. I, II, III, WKŁ, Politechnika Gdańska.
3. Korzeniowski L. (2017), Podstawy nauk o bezpieczeństwie, Wydawnictwo Difin, Warszawa.
4. 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
5. Ashkenazi M. (2008), Where Surplus Arms are Not a Problem, (in:) Contemporary security policy, 2008, vol.29, p.129-150

## Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	45	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	55	2,00