



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Decision's games [N2IBiJ1-BiZK>GD]

### Course

Field of study

Safety and Quality Engineering

Year/Semester

1/2

Area of study (specialization)

Safety and Crisis Management

Profile of study

general academic

Level of study

second-cycle

Course offered in

Polish

Form of study

part-time

Requirements

elective

### Number of hours

Lecture

10

Laboratory classes

0

Other

0

Tutorials

10

Projects/seminars

0

### Number of credit points

2,00

### Coordinators

dr inż. Rafał Mierzwiak

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### Lecturers

### Prerequisites

The student formulates opinions on the basis of group discussion, brainstorming, implemented SWOT and PEST analyzes, explain their applications and summarize and recommend corrective actions. The student formulates opinions on the basis of group discussion, brainstorming, implemented SWOT and PEST analyzes, explain their applications and summarize and recommend corrective actions.

### Course objective

Developing the potential of knowledge, skills and attitudes in making market and (especially crisis) management decisions based on the acquired knowledge and skills acquired at the first level of education at the university using decision games.

### Course-related learning outcomes

Knowledge:

1. The student has structured knowledge of the following concepts: decisions, decision-making process, decision-making rules, barriers to decision-making, game theory, simulation games, serious simulation games, management games [K2\_W08].
2. The student knows in depth the psychological aspects taken into account in professional activity in

the field of safety engineering in the field of: decisions, decision-making process, decision-making rules, barriers to decision-making, conflicts in decision-making processes [K2\_W10].

Skills:

1. The student is able to implement the assumptions of project management, including: organizing a decision-making team and assigning responsibilities [K2\_U09].
2. The student is able to communicate in the field of recommendations to improve decision-making [K2\_U11].

Social competences:

1. The student is critical of his knowledge, is ready to consult experts when solving decision-making problems [K2\_K01].
2. The student is prepared to reliably perform professional roles resulting from current economic and social needs in the field of decision-making [K2\_K06].

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Form Rating:

Participation in classes; carrying out tasks and placing them on e-courses;

51% of points in current knowledge (knowledge test in each class); Skills - passing 2-3 decision games on a scale of 1-100 points

51% of points for passing calculations;

The final grade is an external source.

Rating 3.0 - 51-60 points

Rating 3.5 - 61-70 points

Rating 4.0 - 71-80 points

Rating 4.5 - 81-90 points

Rating 5.0 - 91-100 points

Social competences - work in project teams (internal team division of grades)

## Programme content

Lecture

Presentation of the essence, goals, and types of decisions as well as the conditions of decision-making processes. Analysis of the features and stages of shaping the decision-making process, including the classification of decisions and the criteria of rationality. Overview of models and methods supporting decision-making, decision rules, and barriers hindering rational choices. Characteristics of decision-making under conditions of risk and uncertainty. Introduction to game theory, its basic concepts, history, and applications in decision-making processes. Discussion of simulation games, serious games, and management games, with particular attention to conflicts and psychological aspects arising during simulations.

Workshops / Tutorials

Practical application of simulation games as a tool to support decision-making. Analysis of the course of games and identification of critical decision-making moments. Drawing conclusions based on the results of simulations, and formulating recommendations for decision-making under conditions of risk and uncertainty.

## Course topics

Lecture

1. Decision-making processes and their characteristics
2. Classification of decisions and criteria of rational choice
3. Stages of shaping the decision-making process
4. Decision-making models and methods
5. Decision rules and barriers in decision-making
6. Risk and uncertainty in decision-making processes
7. Game theory in decision-making
8. Concepts and history of decision games
9. Simulation games, serious games, and management games

#### Workshops / Exercises:

1. Economic game based on the Prisoner's Dilemma
2. TransEuropa – strategic game
3. Strategize\*– strategic decision-making simulation
4. Broken Airplane Game
5. De Bono's Six Thinking Hats and decision-making
6. Mental models and decision-making – analysis of a selected problem
7. Cognitive traps in decision-making – case study analysis

#### Teaching methods

1. Discussion, simulation games, presentation, games
2. The lecture is delivered using distance learning techniques in synchronous mode or on-site
3. Permitted platforms: eMeeting, Zoom, Microsoft Teams

#### Bibliography

##### Basic:

Więcek-Janka, E. (2011). Games and Decisions, Poznań: Wydawnictwo Politechniki Poznańskiej.

##### Additional:

1. Opracowania Szkoły Symulacji Systemów Gospodarczych (w latach 2000-2010), Wydawnictwo Politechniki Wrocławskiej, Wrocław (lata 2000-2010).
2. Mierzwiak R., Nowak M., Modele decyzyjne w teorii systemów szarych, Polskie Towarzystwo Ekonomiczne, 2020.

#### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
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)	30	1,00