COURSE DESCRIPTION CARD - SYLLABUS

Course name
THE IMPACT OF DECISION-MAKING HEURISTICS ON RISK IDENTIFICATION, ASSESSMENT, AND RESPONSE [S5NOZIJ>WHD]

Course

Proposed by Discipline
–

Year/Semester
3/5

Level of study
Doctoral School

Course offered in
English

Form of study
full-time

Requirements
elective

Number of hours

Lecture
4

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

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Lecturers

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Prerequisites

- Basic knowledge of scientific methodology. - Knowledge of homo oeconomicus concept.

Course objective

The course explores how cognitive biases and decision heuristics systematically distort objective risk management frameworks in high-stakes environments. Doctoral students will critically examine behavioral economics and psychological principles affecting risk identification, quantitative/qualitative assessment, and strategic response formulation. The course aims to equip researchers with advanced analytical tools to mitigate cognitive errors in institutional, scientific, and corporate decision-making environments.

Course-related learning outcomes

Knowledge: (students knows and understands):
SzD_W06_Knows and understands the economic, legal, ethical, and other vital conditions related to scientific and professional activity in the context of behavioral distortions and decision heuristics in risk modeling.
SzD_W04_Knows and understands principles of disseminating results of scientific activity, also in an open access mode, specifically regarding empirical findings in behavioral risk research and heuristics.

Skills (student is able to):
SzD_U02_Is able to critically analyze and assess scientific research results, properly cite sources, create references, and manage research data (FAIR principles) within the domain of cognitive psychology and behavioral decision theory.
SzD_U03_Is able to transfer results of scientific activity to the practice of risk management, and critically evaluate the ethical dimension of their own and others' research projects regarding manipulation or choice architecture (nudging).

Social competences:
SzD_K01_Is ready to critically assess achievements within a given scientific discipline, taking into consideration ethical aspects of using heuristics or managing public/institutional risk perception.
SzD_K04 _Is ready to fulfill the social obligations of researchers and creators, safeguarding objective truth and making society aware of systemic cognitive biases in public crisis and risk contexts.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Active Lecture Participation (30%): Evaluation of critical discussion on assigned peer-reviewed articles.
• Research Proposal / Case Study (70%): An individual project identifying a systemic heuristic distortion in a chosen scientific or institutional risk scenario.

Programme content

1. Introduction to Behavioral Decision Theory (BDT) and Prospect Theory.
2. The taxonomy of cognitive biases and heuristics (Availability, Representativeness, Anchoring).
3. Heuristics in Risk Identification: Overconfidence, Optimism Bias, and the 'Black Swan' blindness.
4. Risk Assessment Distortions: Probability neglect, Hyperbolic discounting, and Loss aversion.
5. Behavioral Responses to Risk: Status Quo bias, Herd behavior, and Escalation of Commitment.
6. Choice Architecture and Nudging: Ethical frameworks in institutional risk communication.
7. De-biasing Techniques: Structured analytic techniques to counter institutional heuristics.

Course topics

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6. Choice Architecture and Nudging: Ethical frameworks in institutional risk communication.

Teaching methods

- Lecture.
-Case study.

Bibliography

Mandatory Literature:
Kahneman, D. (2011). Thinking, Fast and Slow. Farrar, Straus and Giroux.(Klasyczna pozycja wprowadzająca podział na System 1 i System 2 oraz podstawowe heurystyki).Kahneman, D., Sibony, O., & Sunstein, C. R. (2021). Noise: A Flaw in Human Judgment. Little, Brown Spark..Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. Science, 185(4157), 1124–1131.Thaler, R. H., & Sunstein, C. R. (2021). Nudge: The Final Edition. Yale University Press.(Podstawa do tematów związanych z architekturą wyboru i reakcją na ryzyko).Gigerenzer, G., & Gaissmaier, W. (2011). Heuristic Decision Making. Annual Review of Psychology, 62(1), 451–482.

Supplementary Literature:
1. Ariely, D. (2008). Predictably Irrational: The Hidden Forces That Shape Our Decisions. HarperCollins.
2. Flyvbjerg, B. (2021). Top Ten Behavioral Biases in Project Management: An Overview. Project Management Journal, 52(6), 531–546.
3. Croskerry, P. (2013). From Cognitive Rationality to Cognitive De-Biasing. Academic Medicine, 88(5),

580–586.

Breakdown of average student's workload

	Hours	ECTS
Total workload	21	1,00
Classes requiring direct contact with the teacher	4	0,00
Doctoral student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation)	21	1,00