COURSE DESCRIPTION CARD - SYLLABUS

Course name
Introduction to Cognitive Science [S2SI1E>KOG]

Course

Field of study
Artificial Intelligence

Year/Semester
2/3

Area of study (specialization)
–

Profile of study
general academic

Level of study
second-cycle

Course offered in
English

Form of study
full-time

Requirements
elective

Number of hours

Lecture
0

Laboratory classes
0

Other (e.g. online)
0

Tutorials
30

Projects/seminars
0

Number of credit points

3,00

Coordinators

dr inż. Rafał Mierzwiak
rafal.mierzwiak@put.poznan.pl

Lecturers

Prerequisites

Student has engineering abilities and teamwork skills. Student is capable to summarise the most important information from scientific and research references.

Course objective

The objective of the course is to introduce the actual knowledge about the mind and attempt to understand the human whit the reference the various sources and fields of knowledge.

Course-related learning outcomes

Knowledge:
1. Student knows the economic, legal and other determinants of the activities of IT companies [K2st_W8].
2. Student has basic knowledge of management and running a business and individual entrepreneurship [K2st_W9].

Skills:
1. Student is able to use information and communication techniques used in the implementation of IT

projects, in particular in the field of artificial intelligence [K2st_U2].
2. Student can communicate both in Polish and English using different techniques in a professional environment and in other environments, also using IT tools [K2st_U12].

Social competences:
1. Stident is aware of the need to develop professional achievements and comply with the rules of professional ethics [K2st_K4].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: maxiumum score is 100 points (50 points for essay, 50 points for written assignment).
Tutorial: maxiumum score is 100 points (teamwork in preparation and participation in Oxford debate - 80 points, summary and reasoning - 20 points).
Marks: 2.0 - from 50 points, 3.0 - from 51 to 60 points, 3.5 - from 61 to 70 points, 4.0 - from 71 to 80 points, 4.5 - from 81 to 90 points, 5.0 - from 91 to 100 points.

Programme content

Introduction to the issue of cognitive science.
The concept of two systems in the act of human mind.
Heuristics and cognitive bias, i.e., judgements in uncertain conditions.
The intuition in experts evaluations.
The approach to risk in decision making processes.
The elements of framming effect in realation to cognitive processing.

Course topics

Introduction
1 Introduction to the subject matter
o Overview of cognitive research and its relevance
o Relevance to time management and decision-making
2 Discussion of course objectives and benefits of participation
o Objectives: Understanding cognitive processes, improving time management and decision-making skills
o Benefits: Increased productivity, better decision making, improved work efficiency
Fundamentals of Cognitive Research
3 Introduction to cognitive research
o Definition and scope of cognitive research
o The importance of cognitive research in understanding human behaviour and decision making
The Two-Systems Concept of the Operation of the Human Mind
4 The two-system concept of the operation of the human mind
o System 1: Fast, automatic and intuitive thinking
o System 2: Slow, deliberate and analytical thinking
o Examples and implications for everyday decision-making
Heuristics and Cognitive Errors
5 Heuristics and cognitive errors
o Definition and examples of heuristics
o Common cognitive errors (e.g. confirmation bias, availability heuristics)
o Influence on judgements and decision-making under uncertainty
Intuition in Expert Assessments
6 Intuition in expert judgements
o The role of intuition in expert decision making
o Differences between novice and expert intuition
o Case studies and real-life examples
Approaches to Risk in Decision-Making Processes
7 Approaches to risk in decision-making processes
o Understanding risk perception and assessment
o Strategies for managing risk in decision-making
o Examples from different fields (e.g. finance, health, management)
Elements of Relational Frame Theory (RFT) in the Context of Cognitive Processes

8 Elements of Relational Frame Theory (RFT)
o Introduction to RFT and its principles
o Application of RFT in understanding cognitive processes
o Examples of relational frameworks in everyday thinking and language
Integration and Application
9 Integration of cognitive research with time management
o Application of cognitive theories to improve time management
o Practical strategies to increase productivity and efficiency
o Exercises and activities to apply in personal and professional contexts
Summary and Conclusion
10 Class summary and conclusions
o Review of key points and concepts discussed in class
o Discussion on practical applications of cognitive research in time management
o Concluding reflections and question and answer session with participants

Teaching methods

Lecture, presentation, discussion, teamwork, Oxford debate.

Bibliography

Basic:
Kahneman, D. (2012). Thinking, Fast and Slow, Penguin Books.

Additional:
Kahneman, D., Slovic, S. P., Slovic, P., & Tversky, A. (Eds.). (1982). Judgment under uncertainty: Heuristics and biases. Cambridge university press.
Kahneman, D., & Tversky, A. (2013). Prospect theory: An analysis of decision under risk. In Handbook of the fundamentals of financial decision making: Part I (pp. 99-127).
Levin, M., & Hayes, S. C. (2009). ACT, RFT, and contextual behavioral science.
Klawiter, A. (2008). Formy aktywności umysłu. Ujęcia kognitywistyczne. Emocje, percepcja, świadomość, Warszawa: Wydawnictwo Naukowe PWN.
Magrini, M. (2019). Mózg. Podręcznik użytkownika. Wydawnictwo Feeria.
Ohme, R. (2017). Emo sapiens: harmonia emocji i rozumu. Wydawnictwo Bukowy Las.

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,00
Classes requiring direct contact with the teacher	30	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	45	1,50