COURSE DESCRIPTION

General information		
Lead instructor	Professor Borut Rončević Associate Professor Blaž Rodič Professor Boris Podobnik Associate Professor Mislav Balković Assistant Professor Maja Brkljačić Associate Professor Leo Mršić	
Course name	**CDS-18: Selected chapters on cognitive science**	
Study programme	**Computer and Data Science, third cycle Doctoral Study Programme**	
Course status	Optional	
Year	First or Second	
Number of credits and mode of delivery	ECTS student workload coefficient	10
	Number of hours (L+P+S)	30/0/270

Course description
1.1. Course goals
Cognitive science is a multidisciplinary study exploring human mind and general cognition. It intersects with psychology, computer science (specifically artificial intelligence), neuroscience, linguistics, philosophy, and anthropology. This course aims to familiarize students with its history, key problems, foundational concepts, central disciplines, primary tools, and potential applications. Due to the field's diverse nature, the course will focus on consolidating significant insights from various analysis levels and different methodologies into a cohesive framework for comprehending the mind and cognition. Central to this is the concept of the mind as an information processing system, following the representational-computational perspective, which will be the course's primary thread.
1.2. Course enrolment requirements
There is none
1.3. Intended course learning outcomes
Deepen understanding of advanced theories in cognitive science. Develop proficiency in complex research methodologies used in cognitive studies. Critically evaluate contemporary research and trends in cognitive science. Apply cognitive science theories and methods to solve real-world problems. Foster innovative thinking in the development of new cognitive science approaches and technologies. Prepare students for leadership roles in academic, research, or professional settings within the field of cognitive science.

1.4. *Course content*
Advanced Theories in Cognitive Science: Integration of classical and contemporary theories. In-depth study of computational models of cognition. Examination of cognitive neuroscience advancements. Research Methodologies: Advanced statistical techniques and data analysis in cognitive research. Experimental design in cognitive science studies. Qualitative and mixed-method approaches. Critical Analysis of Cognitive Research: Evaluating the impact of recent studies. Debating controversial topics and emerging theories. Ethical considerations in cognitive research. Applied Cognitive Science: Cognitive science in technology and AI development. Implications of cognitive science in education and learning. Cognitive approaches to mental health and therapy. Innovation and Future Directions: Emerging trends in cognitive science research. Cross-disciplinary approaches and their potential. The future of cognitive science and technology. Leadership and Professional Development: Developing skills for academic and research leadership. Grant writing and funding acquisition for cognitive science research. Communication and dissemination of cognitive science knowledge.

1.5. *Modes of delivery (mark the appropriate boxes with an X)*	☒ *lectures* ☐ *seminars and workshops* ☒ *practicals* ☐ *remote learning* ☐ *field work*	☒ *independent work* ☐ *multimedia and network* ☐ *laboratory* ☐ *supervision* ☐ *other* _____

1.6. *Student obligations*

1.7. *Monitoring student work (mark the appropriate boxes with an X)*							
Class attendance		Participation in class		Seminar paper		Experimental work	
Written exam		Oral exam		Essay		Research	
Project		Continuous assessment of knowledge		Student report		Practical work	

Portfolio		Schoolwork		Homework			

1.8. Assessment and evaluation of student work during classes and the final exam

Type (examination, oral, coursework, project):

- Regular submission of research critiques and literature reviews, 40%
- Development and presentation of a research proposal, 60%

1.9. Required readings and number of copies relative to the number of students currently taking the course

Title	*Number of copies*	*Number of students*
Baars, B. J., & Gage, N. M. Cognition, brain, and consciousness: Introduction to cognitive neuroscience. Publisher.		
Frankish, K., & Ramsey, W. M. (Eds.). The Cambridge handbook of cognitive science. Cambridge University Press.		
Pinker, S. How the mind works. Publisher.		
Hofstadter, D. R. Gödel, Escher, Bach: An eternal golden braid. Publisher.		
Thompson, E. Mind in life: Biology, phenomenology, and the sciences of mind. Publisher.		

1.10. Supplementary readings

1.11. Methods of quality monitoring that ensure the acquisition of knowledge, skills and competences.