New Trends in Cognitive Science (2025/2026)

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1. (2025-10-10) First lecture / introduction
2. (2025-10-17) Introduction to LaTeX
3. (2025-10-24) The Predictive Brain: A New Framework for Understanding Perception, Action, and Learning _____
4. (2025-10-31) Embodied Cognition and Neural Plasticity: Sensorimotor Experiences, Synaptic Plasticity, and Brain Rewiring _____
5. (2025-11-07) Cognitive Architectures, Attention, and Consciousness: Integrating Insights from AI, Neuroscience, and Psychology _____
6. (2025-11-14) Artificial Intelligence and Cognitive Science: Opportunities, Challenges, and Future Directions _____
7. (2025-11-21) Machine Learning and Cognitive Modeling: Using AI to Understand Human Intelligence _____
8. (2025-11-28) Emotions, Creativity and the Brain: Imagination, Affective Computing, Emotional Intelligence, and Beyond _____
9. (2025-12-05) Social Cognition and Decision-Making: Heuristics, Biases, and the Neural Basis of Cooperation, Empathy, and Group Behavior _____
10. (2025-12-12) The Microbiome and the Brain: Exploring the Gut-Brain Axis and its Implications for Cognition _____
11. (2025-12-19) Cognitive Enhancement and Neurotechnology: The Ethics and Science of Brain-Computer Interfaces _____
12. (2026-01-09) Fungal Automata: Biological Inspiration for Novel Computing and Cognitive Architectures _____
13. (2026-01-16) Cybernetics, Cellular Automata and the Game of Life: Exploring Complex Systems, Emergent Behavior, Feedback and Circular Causality _____
14. (2026-01-23) Final discussion / repetion

Student obligations:

(0) Attendance: Compulsory, max 3 absences
(1) Presentation: Students are responsible for finding their own literature for the presentation, which must be of good quality (WoS or at least Scopus). There must be at least 5 references for each presentation. The presentation must last for 1 hour, and it has to be made with LaTeX as well.
(2) For their final grade the students will use a transformer (mandatory) to write in LaTeX a 30 page paper on some open research problem from the topic of their presentation. The problem must be interesting, clearly explained, and factually verified. The students will be held accountable for steucturing and verifying the information. Also, the text must be fluent and the AI must not be detectable in any way. The paper shall have an appendix detailing on how AI tools were used. Remember, is not necessary nor recommended that AI writes your text for you. It is a productivity tool to enable you to work faster. Use it accordingly.