

Course title: Intelligent educational systems		
Teacher(s): Danijela M. Milošević, Veljko V. Aleksić		
Course status: elective		
Number of ECTS credits: 10		
Condition: None		
Course objectives The aim of the course is to acquaint students with modern advanced concepts, techniques and tools for the development and implementation of intelligent systems in education. The course should enable students to monitor and analyze current research on technological aspects of intelligent educational systems and their application.		
Learning outcomes At the end of the course, the student is expected to know and functionally use advanced concepts and technologies for the development of intelligent educational systems; apply appropriate methods and techniques for the creation, testing and implementation of intelligent systems in education; plan and independently implement research in this area.		
Contents <i>Theoretical lectures</i> An overview of the areas of technology-enhanced learning (TEL) and the application of intelligent systems in education. Classification, application and theoretical framework of designing intelligent educational systems. User modeling, personalization and adaptability. Development of self-regulated and social learning in the digital environment. Virtual Learning Environments (VLE). Learning analytics. Game-Based Learning (GBL). Mobile technologies and learning (M-Learning). Massive Open Online Courses (MOOC) and Open Educational Resources (OER). Intelligent tutors and personal agents. Patterns of user behavior and pedagogical aspects (learning theories and instructional design). Interoperability, metadata and standards. Scalability and integration of intelligent educational systems. <i>Practical lectures</i> Mastering the techniques of development and integration of intelligent educational systems via project development and working with digital tools and systems in the computer laboratory.		
Recommended literature [1] Kinshuk, D.: Designing Adaptive and Personalized Learning Environments. Routledge, 2016. doi:10.4324/9781315795492 [2] Clark, R., Mayer, R.: E-learning and the Science of Instruction: Proven Guidelines for Consumers and Designers of Multimedia Learning. San Francisco: Pfeiffer, 2016. [3] Aleksić, V.: Educational technology in the digital domain. Čačak: Faculty of Technical Sciences, 2021. [4] Nystrom, R.: Game programming patterns. Genever Benning, 2014. [5] Barkley, E.: Student Engagement Techniques: A Handbook for College Faculty. San Francisco: Jossey-Bass, 2010.		
Number of active classes: 7	Theory: 5	Practice: 2
Teaching methods Presentations and practical study examples related to certain techniques, development environments and software tools. Working with digital tools and environments in the laboratory and development of independent projects in the field of intelligent educational systems.		
Evaluation (maximum number of points 100) Activities during the lectures: 10 points; Project development and presentation: 40 points; Oral part of the exam: 50 points		