

Study program: Information technology		
Type and level of studies: Undergraduate Academic Studies		
Course unit: Information Expert Systems		
Teacher in charge: Vesna S. Ružičić		
Language of instruction: English		
ECTS: 6		
Prerequisites: -		
Semester: Winter		
Course unit objective: An acquaintance of students with modern concepts and principles of system integration - Information System (IS) and Expert System (ES) in the Information Expert System (IES). Mastering modern methods and tools in the system integration process. Acquiring new knowledge and acquiring skills for IES implementation in various standardized fields. An acquaintance of students with: terminology from the field of expert systems; organizational concepts of the system; tools; techniques and technologies of system development, integration, and documentation; requirements of potential users of the system; database - knowledge base correlations (IS - ES correlations); the role of analyst and designer in the development of IS and expert in the development of ES; business objectives of IES; necessary resources; system integration; knowledge base; IES applications.		
Learning outcomes of Course unit: Student: knows modern approaches in the field of integration of information and expert systems; analyzes and critically considers different approaches to the development of IES; identifies opportunities for IES development to solve problems in different fields; is qualified to apply acquired knowledge in the domains of analysis, improvement, design and development of information expert systems; is qualified to apply software tools for modeling, designing, implementing and maintaining integrated systems; understands the importance of applying IES in different fields.		
Course unit contents: Theoretical classes Basic elements of knowledge presentation. Organizational concepts of systems (IS, ES), system integration. Tools and technologies for system integration. Development, integration, and documentation of the system on the standardization platform. Development of knowledge models by defining knowledge base elements for ES and application in ICS (International Classification for Standards) fields. Creating a hierarchy of objects (framework) for the formation of rules. Correlations of databases - knowledge base (knowledge base system), i.e. IS - ES, for integration in IES. Problem-solving strategy (STRIPS algorithm). Methodology for system development by chaining. Resources for IES Development. System integration and configuration. Applications of integrated systems, on examples of IES implementation in different standardized fields. Practical classes Application of previously acquired knowledge in information systems and software engineering (Microsoft Access, CASE tools, etc.). Development of expert systems in a specific software environment (Eclipse, shell JavaDON, etc.). System integration, development, and implementation of IES for applications in ICS fields with high intensity of knowledge innovation, knowledge base, and knowledge base system.		
Literature: [1] Ž. Micić, IT u integrisanim sistemima, Tehnički fakultet, Čačak, 2008. [2] Rainer, Kelly Rex, Jr.; Turban, Efraim. Uvod u informacione sisteme, Beograd : Data status, 2009. [3] Jaroslav E. Poliščuk, Ekspertni sistemi, Elektrotehnički fakultet, Pofgorica, 2004. knjiga.pdf [4] David Watson, Graham Brown, Cambridge IGCSE Artificial Intelligence and Communication Technology, Hodder Education, 2021. [5] David M. Shapiro, Applications of Accounting Information Systems, 2019. [6] K. Anders Ericsson, Robert R. Hoffman, Aaron Kozbelt, Brooklyn College, A. Mark Williams, The Cambridge Handbook of Expertise and Expert Performance, 2018. [7] J. A. Hoffer, M. B. Prescott, F. R. McFadden, Modern Database Management, 8th edition, Prentice Hall, 2007. [8] ISO, ISO Store, Standards catalogue, 35: IT, http://www.iso.org/iso/home/store/catalogue_ics.htm		
Number of active teaching hours: 4	Lectures: 2	Practice: 2

Teaching methods:

Lectures are held in the computer classroom. Interactive teaching with multimedia content. Combination of classical teaching with e-learning and appropriate literature.

Exercises are performed using a combination of the classical method and the interactive participation of students in the analysis of problem-solving in different fields, through the exchange of ideas and knowledge, discussion, mentoring, and teamwork. Realization of the development of IES and creation of a project assignment on a defined topic from the framework of the subject content.

Teaching methods: popular lectures, discussions, methods of practical work, and workshops.

Evaluation (maximum number of points 100)

Exam prerequisites:	No. of points:	Final exam:	No. of points:
Activities during teaching process	10	Final exam (written):	20
Practical teaching	20	Final exam (oral):	10
Colloquium	20		
Practical teaching	20		