

Study program: Information Technology			
Course title: INFORMATION EXPERT SYSTEMS			
Teacher(s): Vesna S. Ružičić			
Course status: elective			
Number of ECTS credits: 6			
Prerequisite courses: none			
Course objectives			
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			
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.			
Content of the course			
<i>Theoretical teaching</i>			
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.			
<i>Practical teaching</i>			
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. Polišćuk, 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 classes: 4		Theoretical teaching: 2	Practical teaching: 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 of knowledge (maximum number of points 100)			
Pre-exam obligations		Points	Final exam
Activities during teaching process		10	Final exam (written):
Practical teaching		20	Final exam (oral):
Colloquium		20	

Practical teaching	20		
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