

Course title: ERP SYSTEMS

Lecturers	Full Prof. Ruben Picek, Ph.D Full Prof. Neven Vrčec, Ph.D Marko Mijač, Ph.D.
Language of instruction	Croatian and English
Study level	Master
Study programme	Business Systems Organization / Information and Software Engineering
Semester	3 rd (winter)
ECTS	5
Goal	Introducing students to the role of ERP systems in modern companies. The course describes the way ERP system is used in business, and shows relation between business processes and modules which make such complex information systems. Structure of ERP systems is analyzed on theoretical and practical level. Importance of organizational preparation for selection and implementation of ERP system is emphasized. The course analyses the methods and the tools for evaluation of organization, selection and implementation of ERP systems and maintenance of achieved effects. Projects structure, resources, roles and responsibilities needed for efficient implementation are also being analyzed. Student will, through the various roles, learn how to work in one commercial ERP system.
General and specific learning outcomes	
Content	<p>1. Introduction into business information systems</p> <p>Historical development: MRP, MRPII, ERP. Definition and concept of ERP systems. Role of ERP system in the modern enterprise (once-present). Advantages and disadvantages. ERP market - overview of the leading ERP software packages.</p> <p>2. Architecture of ERP systems</p> <p>Structure and possibilities of ERP modules. Limitation of ERP systems and need for development of special modules. Structure (core / modules RDBMS) and capabilities of ERP modules. Limitations of ERP systems and the need for developing additional modules. Practical work with ERP system.</p> <p>3. Reasons for implementation of ERP systems</p> <p>How ERP can improve effectiveness of a company's business. Business analysis of the need for change. Business process modeling and Business process performance and improvements, BPR. Impact identification and quantification. Strategic decision: new ERP yes / no. Calculation of return on investment and all costs associated with deploying and maintaining ERP system (software licenses, consultants, education ...)</p> <p>4. Business process Modeling, Reengineering and Alignment with ERP systems</p> <p>Strategic goals and their influence on business processes. Organizational infrastructure and support to key business processes. Analysis of business processes. Map of business processes. Analysis of gap between business processes and possibilities of ERP systems. Increasing of efficiency of business processes and reorganization of business processes connected to implementation of ERP system.</p> <p>5. Selection of ERP systems</p>

	<p>Selection - strategic decisions. Organizational infrastructure and support key business processes. Selecting opportunities (buy standard system, own development, rent ASP, outsourcing). Selection criteria. Selecting approaches. The process of selecting ERP system. Methods of selection. Criteria for ERP system evaluation. Tools to support selection / evaluation of ERP solutions. Misconceptions and errors with the selection</p> <p>6. Project management of ERP system implementation</p> <p>Project team structure (roles and responsibilities). Planning the dynamics of project activities. The definition and analysis of organizational preparation. Methods and tools for the analysis of organizational preparation. Preparing Organizations (key users and their education). Challenges and risks of the implementation. Cost</p> <p>7. Implementation of ERP systems</p> <p>Analysis of technological infrastructure needed for implementation of ERP systems. Problems connected to local and global installations. Project team structure. Project management and dynamics of project activities. Key users and their education. Setting ERP systems.</p> <p>8. Methodologies of ERP systems</p> <p>Analysis of technological infrastructure needed for implementation of ERP systems.</p> <p>9. Managing configuration and changes of ERP systems</p> <p>Key parameters and possibility of their change. Monitoring organizational changes and their input into system. Definition and analysis of organizational readiness. Methods and tools for analyses for organizational readiness. Preparation of organization. Planning development of missing knowledge.</p> <p>10. Effects and business failures of ERP system implementation</p> <p>The effects of the ERP system implementation in organization. Problems. The reasons for failure of ERP implementation. Errors. Real side of implementation. Commercial failures vs. effects. The analysis of case studies - practical examples.</p> <p>11. Cloud ERP systems</p> <p>ERP systems in Cloud. The architecture of the cloud ERP solutions. Models. Types. Differences in On-premise and Cloud ERP systems. Acceptance of Cloud ERP Systems. Analysis of Key Drivers and Barriers, Researches (Gartner, Forester group, Faculty scientific research's). Examples in Azure platform.</p> <p>12. ERP systems and interoperability</p> <p>Connecting ERP systems with an external program. Analysis of different approaches linking ERP systems. Connecting ERP system and e-business (matrix). The possibility of linking ERP system and the relevant standards. Technical and semantic connectivity problems. Integration of the new technologies and Cloud ERP system.</p> <p>13. Intelligent ERP systems</p> <p>(iERP) Trends and new technologies. Impact of digital business transformation and related technologies (CC; IoT, ML, AR, VR,...) on ERP systems.</p>
Exercises	<p>On exercises students will use one standard commercial ERP system and will be introduced to its parameters, setup principles and usage from different roles. Working in one virtual organization they will be familiarized with basic business modules (business function) and their connection. The goal is through the various roles take all aspects of ERP systems.</p>

Realization and examination	<p>Classes: lectures, seminars and exercises</p> <p>Exam: written and seminars</p>
Related courses	<ol style="list-style-type: none"> 1. City University, London (Business Engineering with ERP Systems), UK http://www.city.ac.uk/ 2. Central Michigan University, USA http://sap.mis.cmich.edu/
Literature	<p>M. Bradford, Modern ERP: select, implement, et use today's advanced business systems. Raleigh, NC: North Carolina State Univ., 2015.</p> <p>A. Maheshwari, Digital transformation: building intelligent enterprises. Hoboken, New Jersey: Wiley, 2020.</p> <p>A. Leon, ERP demystified. New Delhi: Tata McGraw-Hill, 2008.</p> <p>A. Leon, Enterprise resource planning, 2. ed., 9. reprint. New Delhi: Tata McGraw Hill, 2010.</p> <p>Daniel E. O'Leary. Enterprise Resource Planning Systems: Systems, Life Cycle, Electronic Commerce, and Risk, Cambridge University Press; 2000</p> <p>Bret Wagner, Ellen Monk: Concepts in Enterprise Resource Planning, Third Edition, 2008.</p> <p>Godfrey Glenn: Enterprise Resource Planning 100 Success Secrets: 100 Most Asked Questions: The Missing ERP Software, Systems, Solutions and Applications Guide, 2008.</p>