Tárgyleírás

Tárgy neve: Complex Information Systems

Tárgyfelelős neve: Molnár Bálint, egyetemi docens, tudományos főmunkatárs

Tárgyfelelős tudományos fokozata: Ph.D., doctor habil.

Tárgyfelelős MAB szerinti akkreditációs státusza: AT

Az oktatás célja angolul / Aim of the subject:

Knowledge

- Possession of complex and up-to-date knowledge in analyzing and design of Information Systems.
- Knowledge of the principles of business and enterprise processes within enterprises, the relationships.
- Detailed and expert-level knowledge of the technical terms and expressions of computer science in English.

Abilities:

- Expertise in the application of the concepts and methods of analyzing and design of Information Systems, and operation of Enterprise Resource Planning systems. Ability to develop documentation that complies with the requirements of enterprises.
- Ability to formalize complex problems during the analysis and design of Information Systems, analyze the theoretical and practical background, and provide adequate solutions.
- Expertise in the domain of complex software systems and database management systems used for Information Systems.
- Skills for cooperation and teamwork, and the ability to take a leading role.
- The ability for written and oral communication in English, using the technical terms and expressions of computer science. Ability to argue, prepare reports, read, understand and exploit scientific and technical material (e.g. books and papers).
- Expertise in using sources of scientific, technical, and management information, their critical interpretation and evaluation, and the extraction of information relevant to the solution of a specific problem.
- Ability to perform supervised scientific research, and have skills required for post-graduate studies.

Attitude:

- Pays attention to professional, management, and technology development related to her/his qualification.
- Commitment to self-assessment and critical feedback based on self-assessment.
- Commitment to lifelong learning and receptivity to new IT competencies.
- Adopts and complies with the ethical principles of work, organizational culture, and research, and gets his/her colleagues to comply with it.

- Shares and communicates her/his professional knowledge, and professional results.
- Demonstrates and implements eco-conscious behavior and social responsibility, helping them with IT tools.
- Commitment to quality standards and its IT tools.
- Open to initiating collaboration with IT and other specialists.

Autonomy, responsibility:

- Takes responsibility for the professional decisions made during his professional activities.
- Takes responsibility for observing and enforcing deadlines.
- Takes responsibility for own and fellow workers' work.
- In the case of mission-critical IT systems, he/she can be assigned responsibility for operation and management, according to his/her professional competencies.

Az oktatás tartalma angolul / Major topics:

The topics of lectures are as follows: Specific areas of Enterprise Resource Planning Systems are discussed. Moreover, the workflows related to the Process Chains of Enterprise Resource Planning Systems are overviewed, and the necessary basics of Business Process Management and Modeling. Strongly coupled to workflows and business processes, the students will encounter the concepts of access rights management, information security, protection, privacy, internal and external auditing, controlling, management accounting

The students acquire knowledge of the data and process model of each significant area that are formulated as reference models in the literature.

The primary areas

1. Structured method for analyzing and design of Information Systems
2. ObjeObject-Orientedlysis and Design (UML visual language) for Information Systems
3. Requirements Engineering for Information Systems
4. Enterprise Resource Planning Systems as Complex Information Systems
   4.1. Business Processes, workflows, functional areas, organizational hierarchy
   4.2. Production and major processes
   4.3. Logistics as Business Process of Enterprises
   4.4. Production Logistics
   4.5. Demand Management, Forecasting, MRP (Material Requirement Planning)
   4.6. Warehousing, Inventory management
   4.7. Production Order
   4.8. Warehousing
   4.9. WFMS (Workflow Management Systems)
   4.10. SCM (Supply Chain Management)
   4.11. Human Resources Management
   4.12. Maintenance Management System
   4.13. Integration problem. Different approaches. Current trends.

A számonkérés és értékelés rendszere angolul / Requirements and evaluation:

Type of examinations: exam and practice grade

Specific assessment and examination solutions for testing the knowledge of students:

Written (electronic) exam on the theoretical foundations of Complex Information Systems

Essay questions, multiple-choice, multiple answers.

Continuous progress checking during the semester through quizzes on the subject.

Assignments for problem-solving and development in the practice class.

Irodalom / Literature:

Textbook, mandatory:

1. Duncan, J., Rackley, L., & Walker, A. (1995). *SSADM in practice: a version 4 text*. Macmillan.
2. Langer, A. M. (2007). *Analysis and design of information systems*. Springer Science & Business Media.
3. Larman, C. (2012). *Applying UML and Patterns: An Introduction to Object Oriented Analysis and Design and Interative Development*. Pearson Education India.
4. Magal, S. R., & Word, J. (2011). *Integrated business processes with ERP systems*. Wiley Publishing.

Proposed further reading:

5. August-Wilhelm Scheer, (1994),Business Process Engineering Study Edition: Reference Models for Industrial Enterprises, Springer-Verlag ,1994