Tárgyleírás

Tárgy neve: Service Science

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

- The student has a complex and up-to-date knowledge of services in the enterprise, financial, and banking environment.
- Have knowledge of service development, design, planning, and innovation approaches
- Have a high level of detailed knowledge and understanding of the professional vocabulary, expression, and terminology of the IT field in English.

Abilities:

- Ability to apply professionally the principles and methods of service systems analysis and design methodologies. Ability to prepare service system designs and documentation that meet real business and organizational requirements.
- Ability to formalize professional problems related to service systems, identify the necessary theoretical and practical background, and solve the problem.
- Ability to collaborate, analyze, design, develop, and implement projects/groups/work proactively.
- Ability to express oneself in written and oral English, participate in discussions, prepare reports, process, and use scientific and technical professional material (books, articles, etc.) in a creative way, using a high level of professional vocabulary in the field.
- The ability to use professional sources of information, to extract, critically interpret and evaluate the knowledge needed to solve a problem.
- Ability to carry out independent scientific research under professional guidance and to prepare for further studies in postgraduate studies.

Attitude:

- Monitor professional and technological developments related to his/her qualifications and IT skills.
- Committed to critical feedback and evaluation based on self-reflection.
- Committed to lifelong learning, open to learning new IT professional competencies.
- Accepts and enforces with colleagues the ethical principles of work and organizational culture and of scientific research in information technology.
- He/she shares his/her own knowledge and attaches importance to the communication of IT professional achievements.

- He/she attaches importance to the communication and implementation of environmental and social responsibility and promotes this through the use of IT tools.
- It is committed to enforcing quality standards and analyzing them using IT tools.
- It is open to pro-active cooperation with professionals in IT and other fields.

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:

1. **Lecture 1. Foundations** What are services? Why are they becoming increasingly important for society? What is a service system? How are they structured? How do they contrast with goods?
2. **Lecture 2. Electronic Services** Which developments enabled the evolution of services into electronic services? What different types of electronic services exist? Which technologies are available for their implementation?
3. **Lecture 3. Service Innovation** What is service innovation? Which available methods support projects for new services development?
4. **Lecture 4. Service Design** How is service design related to service innovation? Which known methods and techniques are available to design services?
5. **Lecture 5. Service Semantics** How does the description of electronic services with semantic knowledge enrich? What are the benefits for service providers?
6. **Lecture 6. Service Analytics** How can the wealth of data generated by services are used for analysis? Which main tasks and methods are available?
7. **Lecture 7. Service Optimization** Which mathematical models can be used to solve planning problems arising in the area of services? Which tools can be used to assist engineers?
8. **Lecture 8. Service Co-creation** What are value co-creation, service encounters, service quality, and service productivity? Which methods can be used to manage them?
9. **Lecture 9. Service Markets** How can service systems be commercialized? Which methods enable the creation of competitive service markets? Which frameworks exist to model markets?
10. **Lecture 10. Service Research** What is the importance of recent research streams, such as service network analysis and service level engineering, for service systems? Why are service networks important for an interconnected world?

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. Cardoso, J. (2015). *Fundamentals of Service Systems*. H. Fromm, S. Nickel, G. Satzger, R. Studer, & C. Weinhardt (Eds.). Springer.
2. Qiu, R. G. (2014). *Service Science: The foundations of service engineering and management*. John Wiley & Sons.

Proposed for further reading:

1. Perks, Col., Beveridge, Tony, Guide to enterprise IT architecture, Springer-Verlag New York., ISBN 0-387-95132-6, 2003 .
2. Daniel Minoli, Enterprise Architecture A to Z Frameworks, Business Process Modeling, SOA, and Infrastructure Technology, Auerbach Publications, Taylor & Francis Group, ISBN 978-0-8493-8517-9, 2008
3. Marc Lankhorst et al., Enterprise Architecture at Work, 2005, Springer-Verlag Berlin
4. John A. Zachman (2009): The Zachman Framework: The Official Concise Definition http://test.zachmaninternational.com/index.php/the-zachman-framework , 2011-08-18
5. Robert Daigneau. 2011. *Service Design Patterns: Fundamental Design Solutions for SOAP/WSDL and Restful Web Services* (1 ed.). Addison-Wesley Professional. http://my.safaribooksonline.com/book/web-development/9780321669636/firstLecture