Tárgyleírás

Tárgy neve: Development of Financial IT Systems L.

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 information systems in the financial and banking environment.
- Have knowledge of financial development
- 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 the principles and methods of information systems analysis and design methodologies professionally. Ability to prepare information system designs and documentation that meet real business and organizational requirements.
- Ability to formalize professional problems related to financial information 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, interpret critically, 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 with 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:

The course is about system development that is dedicated to finance, banking, and related areas.
1. Introduction to IT systems and their design methods for banks, finance
1.2. It architectures in banks.
2. Modelling Business Processes in banks, financial institutions
2.1. An overview of the operation of financial IT systems through the business processes (cash flow, money transfer within banks and between banks, international money transfers, etc.).
2.2. Other payment methods: money orders, credit card, mobile payment, micro-payment, mobile wallet, etc.
2.3. Design of a mobile payment system.
2.4. Design of a Micropayment system
3. Cryptocurrency (Bitcoin, Ethereum, Hyperledger, stb) and Blockchain.
3.1. Design of a system for finance based on Cryptocurrencies
4. Credit, Loan management
4.1. Crowd financing and P2P lending
5. API-s in banks, PSD2
5.1. Testing API-s in banks, with the assistance of Web services.
5.2. Development of an IT application using one of the APIs in banks.
6. An overview of SAP Financials

A számonkérés és értékelés rendszere angolul / Requirements and evaluation:

Type of examinations: **Exam**

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

Assessment of the presentation and summary of the dedicated chapter, paper
Written exam on the theory of development information systems for finance:
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:

Literature, mandatory

1. Jim Bird (2015). *DevOps for Finance*. O'Reilly Media.
2. Ton Tapscott, Alex Tapscott. (2016). *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World,* Portfolio
3. August-Wilhelm Scheer, (1994),Business Process Engineering Study Edition: Reference Models for Industrial Enterprises, Springer-Verlag ,1994
4. Magal, S. R., & Word, J. (2011). *Integrated business processes with ERP systems*. Wiley Publishing.
5. Alt, Rainer, and Thomas Puschmann. "Digitalisierung der Finanzindustrie." *Grundlagen der Fintech-Evolution, Berlin, Heidelberg* (2016).

Proposed further reading:

1. Harihara Subramanian, Pethuru Raj (2019): *Hands-On RESTful API Design Patterns and Best Practices,* Packt Publishing
2. Paul Justin, Suresh Padmalatha (2017): *Management of Banking and Financial Services*, 4th Edition, Pearson
3. Mike Barlow: *Evolving Architectures of FinTech*, O'Reilly Media
4. Paolo Sironi (2016): *FinTech Innovation*, John Wiley & Sons
5. Cornelia Lévy-Bencheton (2016): *Data Science, Banking, and Fintech*, O'Reilly Media