COURSE DESCRIPTION CARD - SYLLABUS

Course name
Applications of Artificial Intelligence in IT [S2Inf1E>SIT]

Course

Field of study
Computing

Year/Semester
2/3

Area of study (specialization)
Software Engineering

Profile of study
general academic

Level of study
second-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
30

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

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Lecturers

Prerequisites

A student beginning this course should have basic knowledge of Internet technologies, project management and computer system security. He/she should have the ability to solve basic problems in information systems design and implementation and the ability to obtain information from indicated sources. The student should have the ability to use external programming APIs. He or she should also understand the necessity of broadening their competences and be ready to cooperate within a team. Moreover, in terms of social competence, a student should demonstrate such attitudes as honesty, responsibility, perseverance, cognitive curiosity, creativity, personal culture, respect for other people and teamwork.

Course objective

1. to provide students with basic knowledge of modern technologies used in the broadly understood IT industry, with particular emphasis on AI. 2. to develop students" self-education skills and to integrate knowledge from different areas of IT, with particular emphasis on AI. 3. to develop quality awareness necessary in IT projects - the student will be aware of the importance of quality management in IT.

Course-related learning outcomes

Knowledge:
has knowledge of development trends and technologies used in the it industry, with particular emphasis on ai
has knowledge about processes taking place in the life cycle of it systems
has basic knowledge of running a business in the it industry

Skills:
is able to integrate knowledge from different fields of computer science, with particular emphasis on ai, when formulating and solving engineering tasks
is able to assess the usefulness and applicability of new developments (methods and tools) and new computer products
is able to assess the usefulness of methods and tools for solving an engineering task consisting in construction or assessment of an information system
is able to critically analyze existing technical solutions and suggest improvements
can determine directions for further learning and implement the process of self-education

Social competences:
understands that in computer science, knowledge and skills become obsolete very quickly
understands the importance of using the latest computer science knowledge in solving research and practical problems

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomespresented above are verified as follows:
Formative evaluation:
- on the basis of answers given during lectures.
Summative evaluation:
- based on the qualitative assessment and completeness of the written report summarizing the content of the lectures.

Programme content

In this series of lectures, representatives of companies that are members of the Employers" Council of the Faculty of Computing and Telecommunications at PUT present technologies, technical solutions, environments and programming tools used in the widely understood IT industry. Also presented are research problems undertaken in these companies.
Sample lecture topics are presented below - they change every academic year:
1. Architecture of high-throughput web systems using Wikia as an example.
2. Use of tools for detecting threats and advanced network attacks.
3. Outsourcing of services - value added or work complication?
4 Performance of web applications.
5. Standards of building a modern data center.
Big Data, streaming data, and analysis and storage in the cloud.
7. Testing.
8. Practical examples of using the IaaS platform (infrastructure as a service) to build business services on the example of Google Cloud Engine.

Course topics

none

Teaching methods

Lecture, multimedia presentation.

Bibliography

Basic
1. http://specificationbyexample.com
2. http://dannorth.net/whats-in-a-story/

3. http://www.sastqb.org.za/index.php?option=com_content&view=article&id=13&Itemid=18
4. https://www.cio.com/article/2439495/outsourcing-outsourcing-definition-and-solutions.html
5. Microsoft Azure, https://docs.microsoft.com/en-us/azure/
6. Scrum, https://www.scrum.org/
7. Docker, https://www.docker.com/
8. Microservices, https://martinfowler.com/articles/microservices.html
9. Big Data - Definition, Importance, Examples & Tools, https://www.rd-alliance.org/group/big-data-ig-data-development-ig/wiki/big-data-definition-importance-examples-tools
10. Google Cloud, https://cloud.google.com/docs
Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	32	1,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	2	0,00