GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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|---|---|---|---|
| Subject name and code | Technologies of Interaction, PG_00058804 | | |
| Field of study | Informatics | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | 2022/2023 |
| Education level | second-cycle studies | Subject group | Obligatory subject group in the field of study<br>Subject group related to scientific research in the field of study |
| Mode of study | Part-time studies | Mode of delivery | at the university |
| Year of study | 1 | Language of instruction | Polish |
| Semester of study | 2 | ECTS credits | 4.0 |
| Learning profile | general academic profile | Assessment form | exam |
| Conducting unit | Department of Computer Architecture -> Faculty of Electronics, Telecommunications and Informatics | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Mariusz Szwoch | |
| | Teachers | dr inż. Mariusz Szwoch<br>dr inż. Tomasz Boiński | |

| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|---|
| | Number of study hours | 12.0 | 0.0 | 15.0 | 0.0 | 0.0 | 27 |
| | E-learning hours included: 0.0 | | | | | | |

| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | Participation in consultation hours | Self-study | SUM |
|---|---|---|---|---|---|
| | Number of study hours | 27 | 10.0 | 63.0 | 100 |

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|---|---|
| Subject objectives | learning architectures of distributed Internet systems, mechanisms and solutions to problems and issues in Internet applications. |

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K7_U41] can select methods of modelling and analysis of information systems and applications using selected elements of theoretical computer science and modern programming tools | The student know advantages and limitations of the popular internet protocols such as http/1.1, http/2, soap, rpc, grpc. | [SU1] Assessment of task fulfilment |
| [K7_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, making assessment and critical analysis of the prepared software as well as a synthesis and creative interpretation of information presented with it | Student can specify the architecture of application and the components appropriate for the presented problem. | [SU1] Assessment of task fulfilment |
| [K7_W42] Knows and understands, to an increased extent, the principles and trends in the analysis and design of local and distributed IT systems and the basics of computer modeling and computerization of complex cognitive and decision-making processes. | Student recognize the architecture of an internet application and can describe which architecture is used by the modern internet applications. | [SW1] Assessment of factual knowledge |
| [K7_W41] Knows and understands, to an increased extent, the standards, production methods, life cycle and development trends of software as well as information systems and applications. | Student know how to use contenerized applications in order to improve quality and performance of the CI/CD processes. | [SW1] Assessment of factual knowledge |
| [K7_W04] Knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices | Student can implement the internet application based on the plain java servlet technology and using the spring framework. | [SW1] Assessment of factual knowledge |

**Subject contents**

1 Fundamentals of Internet communication, using HTTP(S) 2 session, passing parameters between client and server 3 Fundamental software architectures for distributed applications (basics, examples): a. client-server b. distributed objects c. multi-tier architectures d. agent systems e. SOA f. grid, cloud computing g. mobile applications 4 Servlets/JSP 5 JEE 6 Web Services (SOAP, WSDL, UDDI etc.), using AXIS 5 Complex workflows using services 6 Design of web and business layers 7. load balancing in Internet applications 8. securing Internet applications 9 mobile applications in the Internet

**Prerequisites and co-requisites**

knowledge of Java

**Assessment methods and criteria**

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Written exam | 50.0% | 50.0% |
| Practical exercise | 50.0% | 50.0% |

**Recommended reading**

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|---|---|
| Basic literature | 1 Dokumentacja HTTP, WSDL, SOAP, UDDI 2 S. Graham, S. Simeonov, T. Boubez, D. Davis, G. Daniels Building Web Services with Java: Making Sense of XML, SOAP, WSDL and UDDI |
| Supplementary literature | No requirements |
| eResources addresses | Adresy na platformie eNauczanie: |

**Example issues/ example questions/ tasks being completed**

**Work placement**

Not applicable