GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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|---|---|---|---|---|---|---|---|
| Subject name and code | Networks Management, PG_00047957 | | | | | | |
| Field of study | Informatics | | | | | | |
| Date of commencement of studies | October 2023 | | Academic year of realisation of subject | 2026/2027 | | | |
| Education level | first-cycle studies | | Subject group | Optional subject group<br>Subject group related to scientific research in the field of study | | | |
| Mode of study | Full-time studies | | Mode of delivery | at the university | | | |
| Year of study | 4 | | Language of instruction | Polish | | | |
| Semester of study | 7 | | ECTS credits | 2.0 | | | |
| Learning profile | general academic profile | | Assessment form | assessment | | | |
| Conducting unit | Department of Computer Communications -> Faculty of Electronics, Telecommunications and Informatics | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Tomasz Gierszewski | | | | | |
| | Teachers | dr inż. Tomasz Gierszewski | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 0.0 | 0.0 | 15.0 | 0.0 | 30 |
| | 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 | 30 | | 2.0 | 18.0 | | 50 |
| Subject objectives | The purpose of the course is to introduce theoretical and practical secure mechanisms for computer network management. | | | | | | |

<table>
<tr><td>Learning outcomes</td><td>
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<tr><th>Course outcome</th><th>Subject outcome</th><th>Method of verification</th></tr>
<tr><td>[K6_W43] Knows and understands, to an advanced extent, standards and methods of IT systems administration, monitoring of processes occurring in them and immunising them to undesirable phenomena and activities</td><td>Student knows different network management solutions and is capable of choosing them according to network environment properties.</td><td>[SW1] Assessment of factual knowledge</td></tr>
<tr><td>[K6_W03] Knows and understands, to an advanced extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum</td><td>Student knows and applies complex security solutions: SIEM, traffic capture and analysis, SSL inspection and application firewalls.</td><td>[SW1] Assessment of factual knowledge</td></tr>
<tr><td>[K6_U09] can carry out a critical analysis of the functioning of existing technical solutions and assess these solutions, as well as apply experience related to the maintenance of technical systems, devices and facilities typical for the field of studies, gained in the professional engineering environment</td><td>Student is capable of providing basic vital network services.</td><td>[SU1] Assessment of task fulfilment</td></tr>
<tr><td>[K6_U42] can apply tools and methods of designing, optimization, monitoring, management, increasing reliability and protection from safety hazards in local and distributed information systems and applications</td><td>Student is able to provide various remote access means to network resources and secure inter-network integration proposal.</td><td>[SU5] Assessment of ability to present the results of task</td></tr>
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<tr><td>Subject contents</td><td>1. Network management requirements. 2. Network management fundamentals. Control and monitoring. 3. Management functional areas (FCAPS). 4. Object-oriented management information model. 5. ASN.1 and BER standards. 6. GDMO Model of management object definition, 7. Structure of management information. 8. Management information base: MIB I and MIB II. 9. Remote network monitoring. 10. Data capture. Alarms and filters. 11. RMON I and RMON II protocols. 12. Network management based on SNMPv1 protocol, 13. SNMPv2 protocol, 14. Remarks on SNMPv3. 15. Systems supporting network management.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Students should know the basics of IT systems security.</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Written exam</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>Project</td><td>50.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>W. Stallings: "Protokoły SNMP i RMON", Helion, Gliwice 2003</td></tr>
<tr><td>Supplementary literature</td><td>No requirements</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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