



Subject card

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| Subject name and code | Network Management and Security, PG_00047746 | | | | | | |
| Field of study | Informatics | | | | | | |
| Date of commencement of studies | October 2023 | Academic year of realisation of subject | | | 2024/2025 | | |
| Education level | second-cycle studies | Subject group | | | Optional subject group 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 | 2 | Language of instruction | | | Polish | | |
| Semester of study | 3 | ECTS credits | | | 4.0 | | |
| Learning profile | general academic profile | Assessment form | | | exam | | |
| Conducting unit | Department of Computer Communications -> Faculty of Electronics, Telecommunications and Informatics | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr hab. inż. Jacek Rak | | | | | |
| | Teachers | dr hab. inż. Jacek Rak | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 12.0 | 0.0 | 0.0 | 15.0 | 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 |
| Subject objectives | Knowledge of security threats of networks connected to the Internet, methods of security violation, methods protecting against security attacks, understanding of the role of security policy and methods of security management of information systems. | | | | | | |

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| Learning outcomes | Course outcome | Subject outcome | Method of verification |
| | [K7_U08] while identifying and formulating engineering tasks specifications and solving these tasks, can:n- apply analytical, simulation and experimental methods,n- notice their systemic and non-technical aspects,n- make a preliminary economic assessment of suggested solutions and engineering workn | Student is able to propose security measure taking under consideration threats of network and systems environment. | [SU5] Assessment of ability to present the results of task |
| | [K7_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 advanced technical systems, devices and facilities typical for the field of studies, gained in the professional engineering environment | Student is able to propose security measure taking under consideration specifics of network and systems environment. | [SU1] Assessment of task fulfilment |
| | [K7_W09] Knows and understands, to an increased extent, the economic, legal and other conditions of various types of activities related to the given qualification, including the principles of protection of industrial property and copyright. | Student understands the importance of security policy as an important security factor of the whole system. | [SW3] Assessment of knowledge contained in written work and projects |
| | [K7_W08] Knows and understands, to an increased extent, the fundamental dilemmas of modern civilisation, the main development trends of scientific disciplines relevant to the field of education. | Student knows security measures suitable for IT systems, selected cryptographic algorithms, systems security standards and Public Key Infrastructure. | [SW3] Assessment of knowledge contained in written work and projects |
| Subject contents | Security threats of networked systems. Classes of security risks of networked systems. Attack categories. Attack techniques. Firewall classes. Firewall configurations. Access control systems. Intrusion. detection systems. Virtual private networks (VPN) - classification. VPN L2 protocols. VPN L3-5 protocols. Security policy. Security maintenance. Security level evaluation. Audit. | | |
| Prerequisites and co-requisites | No requirements | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | Project | 50.0% | 50.0% |
| | Written exam | 50.0% | 50.0% |
| Recommended reading | Basic literature | <p>J. Stokłosa, T. Biłski, T. Pankowski: "Bezpieczeństwo danych w systemach informatycznych", PWN, Warszawa Poznań, 2001</p> <p>A. Białas: "Bezpieczeństwo informacji i usług w nowoczesnej instytucji i firmie", WNT, Warszawa 2007</p> <p>K. Liderman: "Podręcznik administratora bezpieczeństwa teleinformatycznego", Mikom, Warszawa 2003</p> <p>K. Liderman: "Analiza ryzyka i ochrona informacji w systemach komputerowych", PWN, Warszawa 2008</p> | |
| | Supplementary literature | No requirements | |
| | eResources addresses | Adresy na platformie eNauczanie: | |
| Example issues/ example questions/ tasks being completed | | | |
| Work placement | Not applicable | | |