



Subject card

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|--|--|--|------------------------------|-------------------------------------|--|------------|-----|
| Subject name and code | Cybersecurity of Enterprise Infrastructure, PG_00053095 | | | | | | |
| Field of study | Data Engineering | | | | | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | | | 2024/2025 | | |
| Education level | first-cycle studies | Subject group | | | Obligatory subject group in the field of study 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 | 3 | Language of instruction | | | English | | |
| Semester of study | 6 | ECTS credits | | | 3.0 | | |
| Learning profile | general academic profile | Assessment form | | | exam | | |
| Conducting unit | Department of Informatics in Management -> Faculty of Management and Economics | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr hab. inż. Rafał Leszczyna | | | | |
| | Teachers | | dr hab. inż. Rafał Leszczyna | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 30.0 | 0.0 | 30.0 | 0.0 | 0.0 | 60 |
| 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 | 60 | | 6.0 | | 9.0 | 75 |
| Subject objectives | The aim of the course is to acquire knowledge in the area of enterprise IT infrastructure and security management. | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | Method of verification | | |
| | [K6_U02] designs, analyses correctness and creates functional specification of IT systems, selects appropriate measures, creates quality models, prepares and assesses their design documentation. | | | | | | |
| [K6_W04] Knows the architecture of computers, operating system processes, file systems, text processing programs, disk and ram memories management rules. Knows the problems of sharing the state, presentation and transformation of information in a distributed system, hypermedia technologies and related services, the architecture of interactive distributed simulation and agent interaction methods. | | | | | | | |

| Subject contents | <p>LECTURE:</p> <p>Introduction</p> <p>Enterprise IT infrastructure</p> <p>IT security cost</p> <p>Risk management</p> <p>Risk assessment</p> <p>IT security standards</p> <p>IT threats</p> <p>Enterprise IT infrastructure documentation (including IT infrastructure description, security procedures description)</p> <p>IT infrastructure protection controls</p> <p>LAB:</p> <p>Enterprise IT infrastructure analysis</p> <p>Risk assessment</p> <p>IT security cost assessment</p> <p>Documenting enterprise IT infrastructure</p> <p>Selecting IT infrastructure protection controls</p> | | | | | | | | | | | |
|---------------------------------|--|---|--|--------------------------|-------------------|-------------------------------|------|-------|-------|------------------|-------|-------|
| Prerequisites and co-requisites | No requirements | | | | | | | | | | | |
| Assessment methods and criteria | <table border="1"> <thead> <tr> <th data-bbox="456 1536 794 1565">Subject passing criteria</th> <th data-bbox="799 1536 1137 1565">Passing threshold</th> <th data-bbox="1142 1536 1481 1565">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 1572 794 1601">Exam</td> <td data-bbox="799 1572 1137 1601">60.0%</td> <td data-bbox="1142 1572 1481 1601">40.0%</td> </tr> <tr> <td data-bbox="456 1608 794 1637">Lab work reports</td> <td data-bbox="799 1608 1137 1637">60.0%</td> <td data-bbox="1142 1608 1481 1637">60.0%</td> </tr> </tbody> </table> | | | Subject passing criteria | Passing threshold | Percentage of the final grade | Exam | 60.0% | 40.0% | Lab work reports | 60.0% | 60.0% |
| Subject passing criteria | Passing threshold | Percentage of the final grade | | | | | | | | | | |
| Exam | 60.0% | 40.0% | | | | | | | | | | |
| Lab work reports | 60.0% | 60.0% | | | | | | | | | | |
| Recommended reading | Basic literature | <p>Ross J. Anderson. 2008. Security Engineering: A Guide to Building Dependable Distributed Systems (2 ed.). Wiley Publishing.</p> <p>NIST, An Introduction to Computer Security: the NIST Handbook, 1995, DOI:10.6028/NIST.SP.800-12.</p> <p>Peter Gutmann, Engineering Security, 2014,</p> <p>Computer security handbook. Vol 1 / ed. by Seymour Bosworth, M. E. Kabay, Eric Whyne, Hoboken : John Wiley & Sons, cop. 2009.</p> | | | | | | | | | | |

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| | Supplementary literature | <p>John R. Vacca, Cyber Security and IT Infrastructure Protection, Syngress; 1 edition, September 23, 2013</p> <p>Douglas Landoll, The Security Risk Assessment Handbook: A Complete Guide for Performing Security Risk Assessments, Second Edition, May 20, 2011.</p> <p>Bruce Schneier, Applied Cryptography, Second Edition, John Wiley & Sons, 1996.</p> <p>Sjaak Laan, It Infrastructure Architecture - Infrastructure Building Blocks and Concepts Second Edition, Lulu.com, February 24, 2013.</p> <p>Art Carapola, Lord of the Infrastructure: A Roadmap for IT Infrastructure Managers, NewVista Advisors, llc; 1 edition, March 27, 2016.</p> <p>John Yani Arrasjid, Mark Gabryjelski, Chris McCain, It Architect: Foundation in the Art of Infrastructure Design: A Practical Guide for It Architects, It Architect Resource, Llc, March 21, 2016.</p> |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | <p>Analyse enterprise IT infrastructure and prepare its documentation.</p> <p>Perform risk assessment of the analysed IT infrastructure.</p> <p>Propose protection controls for the analysed IT infrastructure.</p> <p>Present examples of critical infrastructures.</p> <p>Present and discuss basic functions of firewalls.</p> | |
| Work placement | Not applicable | |