



## Subject card

|   |  |  |   |                                     |  |            |     |
|---|--|--|---|-------------------------------------|--|------------|-----|
| Subject name and code                       | Network Operating Systems, PG_00047744   |  |   |                                     |  |            |     |
| Field of study                              | Informatics  |  |   |                                     |  |            |     |
| Date of commencement of studies             | October 2022   |  | Academic year of realisation of subject |                                     | 2023/2024  |            |     |
| Education level                             | second-cycle studies   |  | Subject group                           |                                     | Optional subject group<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                               | 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 inż. Wojciech Gumiński               |                                     |  |            |     |
|   | Teachers   |  | dr inż. Wojciech Gumiński               |                                     |  |            |     |
| Lesson types and methods of instruction     | Lesson type  | Lecture  | Tutorial                                | Laboratory                          | Project  | Seminar    | SUM |
|   | Number of study hours  | 18.0   | 0.0                                     | 15.0                                | 0.0  | 0.0        | 33  |
|   | 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  | 33   |   | 10.0                                |  | 57.0       | 100 |
| Subject objectives                          | The main objective of the course is to provide students with the operation, construction and configuration of network operating systems. |  |   |                                     |  |            |     |

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| Learning outcomes               | Course outcome   | Subject outcome  | Method of verification  |
|                                 | [K7_U06] can analyse the operation of components, circuits and systems related to the field of study; measure their parameters; examine technical specifications; interpret obtained results and draw conclusions  | Students will get practical experience in administration of application servers.   | [SU3] Assessment of ability to use knowledge gained from the subject<br>[SU1] Assessment of task fulfilment |
|                                 | [K7_U42] can solve engineering and research problems including design, assessment and maintenance of information systems and applications, using experimental methods and management techniques  | Students will get practical experience in administration of application servers.   | [SU4] Assessment of ability to use methods and tools<br>[SU1] Assessment of task fulfilment                 |
|                                 | [K7_W03] Knows and understands, to an increased 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.   | Students will get practical experiences in configuring network sharing of servers resources.   | [SW1] Assessment of factual knowledge   |
|                                 | [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  | Students will get practical experience in administration of application servers.   | [SU1] Assessment of task fulfilment<br>[SU3] Assessment of ability to use knowledge gained from the subject |
|                                 | [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.   | Students will get practical experiences in configuring network sharing of servers resources.   | [SW1] Assessment of factual knowledge   |
| Subject contents                | Network operating systems classification. NOS tasks. TCP/IP software in NOS structure. Internet protocol – IP. Transmission Control Protocol – TCP state diagram. Network socket communication. Network services. Network services configuration in Windows Server, Linux and Netware. Novell Directory Services – eDirectory. Windows domain. Active Directory. Remote access. Network printing. NOS security. Administration tools. Windows and Linux workstation network configuration. Windows and Linux server network configuration. DNS, DHCP, ARP, NAT, PROXY, Firewall. Network sharing and printing. Users and groups privileges and restrictions. Domain services in Windows and Netware. |  |   |
| Prerequisites and co-requisites |  |  |   |
| Assessment methods and criteria | Subject passing criteria   | Passing threshold  | Percentage of the final grade   |
|                                 | Midterm colloquium   | 50.0%  | 60.0%   |
|                                 | Written examination  | 50.0%  | 40.0%   |
| Recommended reading             | Basic literature   | A. Tanenbaum, "Modern Operating Systems";<br><br>A. Tanenbaum "Computer networks";<br><br>R. Morimoto, "Windows Server";<br><br>C. Schroder, "Sieci Linux"   |   |
|                                 | Supplementary literature   | No requirements  |   |
|                                 | eResources addresses   | Adresy na platformie eNauczanie:<br>Sieciowe systemy operacyjne - MSU - 2023 - Moodle ID: 28735<br><a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28735">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28735</a> |   |

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| Example issues/<br>example questions/<br>tasks being completed | <p>DHCP configuration</p> <p>DNS configuration</p> <p>Configuration of Active Directory privileges</p> |
| Work placement   | Not applicable   |