#### card of course

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| Subject name | Creation of networking service |

1. The placement of the subject in the study system

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| 1.1. Field of study | Computer science |
| 1.2. Form and path of study | Full-time/Part-time |
| 1.3. Level of education | First-cycle studies |
| 1.4. Study profile | Practical |

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| 1. 5. Specialty | Web Technologies and the Internet of Things |
| 1.6. Subject Coordinator | Dr inż. Kamil Żyła; mgr Daniel Lech |

2. General characteristics of the subject

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| 2.1. Belonging to a subject group | Optional/practical |
| 2.2. Number of ECTS | 6 |
| 2.3. Language of lectures | English |
| 2.4. Semesters in which the subject is taught | IV |
| 2.5.Criteria for selecting course participants | For students who have chosen the specialization Web Technologies and Internet of Things |

1. Learning outcomes and course delivery
	1. Subject Objectives

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| No. | Subject Objectives |
|
| C1 | Introduction to network services and their communication protocols. |
| C2 | Installing and configuring services in Windows Server. |
| C3 | Installing and configuring services on Linux. |
| C4 | Familiarization with the issues of securing network services. |

* 1. Subject-specific learning outcomes, divided into knowledge , skills and competences , with reference to the directional learning outcomes

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| --- | --- | --- | --- |
| No. | Description of subject learning outcomes | Reference to directional effectslearning (symbols) | Method of implementation (mark "X") |
| ST | NST |
| Classes at the University | Activities on the platform | Classes at the University | Activities on the platform |
| After passing the course, the student knows and understands **the knowledge** |
| W1 | Has general theoretical knowledge of the operation of network services (DHCP, DNS, FTP, HTTP, AD, SSH, SSL public key infrastructure PKI. | INF\_W12INF\_W14INF\_W20 |  | X |  | X |
| W2 | Knows and understands the practical application of acquired knowledge in the administration of Windows Server and its services. |  | X |  | X |
| W3 | Knows and understands the practical application of acquired knowledge in the field of Linux server administration and its services. |  | X |  | X |
| W4 | Knows and understands the importance of using network services in terms of security. |  | X |  | X |
| After passing the course, the student is **able** to: |
| U1 | Manage the network services runtime environment | INF\_U01 INF\_U12 INF\_U22 INF\_U24 INF\_U25 | X |  | X |  |
| U2 | Install and configure file access services | X |  | X |  |
| U3 | Install and configure network configuration services and server console access | X |  | X |  |
| U4 | Install and configure application server and database services | X |  | X |  |
| U5 | Install and configure mail and print services | X |  | X |  |
| U6 | Use basic methods to secure network services | X |  | X |  |
| After completing the course, the student is ready to take part in **social competences.** |
| K1 | Critically evaluate the quality of your work and look for alternative solutions | INF\_K04 | X |  | X |  |
| K2 | Using knowledge about creating network services in technical and social discourse | X |  | X |  |

3.3. Forms of teaching and their number of hours - Full-time studies (ST), Part-time studies (NST)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Path | Lecture | Exercises | Design | Workshop | Laboratory | Seminar | Lecturer | Classes conducted using distance learning methods and techniques in the form of a lecture | Other | **ECTS points** |
| **ST** |  |  |  |  | 40 |  |  | 20 |  | 6 |
| **NST** |  |  |  |  | 20 |  |  | 10 |  | 6 |

3.4. Content of education (separately for each form of classes: (W, ĆW, PROJ, WAR, LAB, LEK, OTHER). It should be marked (X) how the given content will be implemented (classes at the university or classes on the e-learning platform conducted using distance learning methods and techniques)

TYPE OF CLASS: LECTURE

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| --- | --- | --- | --- |
| No. | Content of the course | Reference to subject-specific learning outcomes | Method of implementation (mark "X") |
| ST | NST |
| **Classes at the University** | **Activities on the platform** | **Classes at the University** | **Activities on the platform** |
| 1. | DHCP, DNS protocol server installation and configuration in Windows Server and Linux. | W1, W2 |  | X |  | X |
| 2. | FTP, HTTP protocol server installation and configuration in Windows Server and Linux | W1, W2, W3 |  | X |  | X |
| 3. | AD service, structure, AD objects, computer and user management. | W1, W2, W3 |  | X |  | X |
| 4. | VPN service – installation and configuration in Windows Server.. | W1, W2, W3, W4 |  | X |  | X |
| 5. | SSL protocol, use of certificates in HTTPS, FTPs services | W1, W2, W3, W4 |  | X |  | X |
| 6. | Public Key Infrastructure (PKI). SSH protocol. | W1, W2, W3, W4 |  | X |  | X |
| 7. | Summary of classes and discussion of grades |  |  | X |  | X |

TYPE OF CLASS: LABORATORY

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| --- | --- | --- | --- |
| No. | Content of the course | Reference to subject-specific learning outcomes | Method of implementation (mark "X") |
| ST | NST |
| **Classes at the University** | **Activities on the platform** | **Classes at the University** | **Activities on the platform** |
| 1. | Preparing the service runtime environment. | U1, U5, K1, K2 | X |  | X |  |
| 2. | File access services. | U2, K1, K2 | X |  | X |  |
| 3. | Network configuration services and server console access. | U3, K1, K2 | X |  | X |  |
| 4. | Application servers and databases. | U4, K1, K2 | X |  | X |  |
| 5. | Mail and printing services. | U5, K1, K2 | X |  | X |  |
| 6. | Securing services. | U6, K1, K2 | X |  | X |  |
| 7. | Summary of classes and discussion of grades. |  | X |  | X |  |

3.5. Methods of verifying learning outcomes (indication and description of methods of conducting classes and verification of achievement of learning outcomes and method of documentation)

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| --- | --- | --- | --- |
| Subject Effects | Teaching methods | Methods of verifying learning outcomes | Documentation methods |
| KNOWLEDGE |
| W1-W4 | Informative, conversational lecture with the use of multimedia. | Use of materials,content contained in the lecture to pass the exam. | Examination sheet |
| SKILLS |
| U1-U5 | Discussion, group work, project preparation | Project execution - a task consisting of installing, configuring and testing the operation of network services in the scope indicated by the instructor. Students document the scope of work carried out in a written paper (and optional accompanying files). | Rated project |
| SOCIAL COMPETENCES |
| K1-K2 | Discussion, group work, project preparation | Project execution - a task consisting of installing, configuring and testing the operation of network services in the scope indicated by the instructor. Students document the scope of work carried out in a written paper (and optional accompanying files). | Rated project |

3.6. Assessment criteria for the achieved learning outcomes

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| **Learning effect** | **For a grade of 3 or "pass."****the student knows and understands/is able to/is ready to** | **For a grade of 3.5, the student knows and understands/is able to/is ready to** | **For a grade of 4, the student knows and understands/is able to/is ready to** | **For a grade of 4.5, the student knows and understands/is able to/is ready to** | **For a grade of 5, the student knows and understands/is able to/is ready to** |
| W | 51-60% of knowledge indicated in learning outcomes | 61-70% of knowledge indicated in learning outcomes | 71-80% of knowledge indicated in learning outcomes | 81-90% of knowledge indicated in learning outcomes | 91-100% of knowledge indicated in learning outcomes |
| U | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |
| K | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |

3.7. Literature

**Basic**

1. Kyle Rankin, Benjamin Mako Hill, Ubuntu Serwer. Oficjalny podręcznik. Wydanie II,

2. Craig Zacker, „Instalowanie i konfigurowanie Windows Server 2012 R2”, wyd. APN Promise, 2016

**Supplementary**

1. Charlie Russel, Przekład: Maria Chaniewska, Joanna Zatorska „Administrowanie systemem Windows Server 2012 R2”, wyd. APN Promise, 2014

2. Own materials/studies

4. Student workload - ECTS points balance

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| --- | --- |
| **Types of student activity** | **Student Load** |
| **ST** | **NST** |
| **Classes requiring direct contact between the student and the academic teacher at the university premises** | **60** | **30** |
| Classes included in the study plan | 60 | 30 |
| **Student's own work** | **90** | **120** |
| Ongoing preparation for classes, preparation of project work/presentations/etc. | 45 | 60 |
| Preparation for passing classes | 45 | 60 |
| **TOTAL STUDENT HOURLY LOAD** | **150** | **150** |
| **Number of ECTS points** | **6** | **6** |

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| Last change date | 30/09/2024 |
| The changes were introduced | INF Education Quality Team |
| The changes were approved | Arkadiusz Gwarda, M.A. |