#### card of course

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| Subject name | Scripting languages in server administration |

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 | Cybersecurity and computer forensics |
| 1.6. Subject Coordinator | Dr Rafał Stęgierski |

2. General characteristics of the subject

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| 2.1. Belonging to a subject group | Optional/practical |
| 2.2. Number of ECTS | 5 |
| 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 Cybersecurity and Computer Forensics specialization |

1. Learning outcomes and course delivery
   1. Subject Objectives

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| No. | Subject Objectives |
|
| C1 | Understand the meaning and role of scripts run from the command line. |
| C2 | Gaining the ability to run scripts and create your own |
| C3 | Gaining server administration skills, including database servers |

* 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 effects  learning (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 | Commands from the command line. | INF\_W13 |  | X |  | X |
| W2 | Knows the file system and understands how access rights are set. |  | X |  | X |
| W3 | Knows what special files are and what they are used for. |  | X |  | X |
| W4 | Understands the need to configure the system |  | X |  | X |
| After passing the course, the student is **able** to: | | | | | | |
| U1 | Write basic commands on both Windows and MacOS computers. | INF\_U03 INF\_U22 | X |  | X |  |
| U2 | Define and use functions you write. | X |  | X |  |
| U3 | Use conditional statements when writing scripts. | X |  | X |  |
| U4 | Create, list, save, and delete files from the command line, and display simple conditional statement data. | X |  | X |  |
| U5 | Log in as an administrator to both systems via the command line, view and change access rights in both systems | X |  | X |  |
| After completing the course, the student is ready to take part in **social competences.** | | | | | | |
| K1 | Compliance with security rules during server administration activities | INF\_K01  INF\_K05 | X |  | X |  |
| K2 | Diagnosing and eliminating errors in scripts and proposing effective solutions to given problems | X |  | X |  |
| K3 | Efficiently find the information you need on the web and critically use OpenAI support. | 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** |  |  |  |  | 30 |  |  | 20 |  | 5 |
| **NST** |  |  |  |  | 20 |  |  | 10 |  | 5 |

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. | Basic Command Prompts (Working on MacOS) | W1 |  | X |  | X |
| 2. | Creating folders and files, saving to file. | W2, W3 |  | X |  | X |
| 3. | Writing basic scripts | W1 |  | X |  | X |
| 4. | Using conditional statements | W1 |  | X |  | X |
| 5. | Server administration, including database servers (MySql and Postgresql) | W4 |  | X |  | X |
| 6. | 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. | Writing Basic Terminal Commands in a Unix System | U1 | X |  | X |  |
| 2. | Using scripts to achieve your goals | U2, U3 | X |  | X |  |
| 3. | Server administration | U4, U5, K1 | X |  | X |  |
| 4. | Scripts for database server administration (different databases) | U2, U3, K2 | X |  | X |  |
| 5. | Remote server management | U5, K1, K3 | X |  | X |  |
| 6. | 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 lecture using multimedia. | Passing lectures:  Test containing a set of 14 questions - 10 closed questions, 2 points each, and 4 open questions, 5 points each = 40 points.  Grade 3 (sufficient): 21 – 24 points  Grade 3.5 (sufficient plus): 25 – 28 points  Rating 4 (good): 29 – 32 points  Rating 4.5 (good plus) 33 – 36 points  Rating 5 (very good): 37 – 40 points | Archived test sheet. |
| SKILLS | | | |
| U1-U4 | Labs, writing and running live scripts. Debug discussions. Help search tips. | Laboratory assessment: solving laboratory tasks given by the lecturer – the final grade is the average of the grades obtained for the individual tasks. | Task files |
| SOCIAL COMPETENCES | | | |
| K1-K2 | Labs, writing and running live scripts. Debug discussions. Help search tips. | Laboratory assessment: solving laboratory tasks given by the lecturer – the final grade is the average of the grades obtained for the individual tasks. | Task files |

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**

* Architektura serwera PostgreSQL <https://www.tutorialdba.com/p/postgresql-architecture.html>
* Dokumentacja Postgresql <https://www.postgresql.org/docs/current/catalogs-overview.html>
* Komendy macOS<https://myapple.pl/posts/10481-ogromne-mozliwosci-terminala-w-os-x>
* Komendy Linux: <https://pixelozaa.wordpress.com/podstawowe-komendy-linuxa/>

**Supplementary**

* Systemy operacyjne. Wydanie IV - Andrew S. Tanenbaum, Herbert Bos, helion.pl
* Lee, Thomas. PowerShell 7 dla profesjonalistów IT. Promise, 2022.

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** | **50** | **30** |
| Classes included in the study plan | 50 | 30 |
| **Student's own work** | **75** | **95** |
| Ongoing preparation for classes, preparation of project work/presentations/etc. | 45 | 50 |
| Preparation for passing classes | 30 | 45 |
| **TOTAL STUDENT HOURLY LOAD** | **125** | **125** |
| **Number of ECTS points** | **5** | **5** |

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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. |