University of Gdańsk

Subject card

Subject name and code	Programmer's workshop, PG_00143999		
Field of study	Informatics		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	undergraduate studies	Subject group	Obligatory subject group in the field of study Subject group related to practical vocational preparation
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish Polish
Semester of study	1	ECTS credits	4.0
Learning profile	practical	Assessment form	
Conducting unit	Zakład Optymalizacji Kombinatorycznej -> Instytut Informatyki -> Faculty of Mathematics, Physics and Informatics -> Rektor		
Name and surname of lecturer (lecturers)	Subject supervisor	mgr Michał Zakrzewski	
	Teachers	mgr Michał Zakrzewski mgr Mateusz Miotk	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	0.0	0.0	30
	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	30	0.0	70.0	100

Subject objectives	Develop practical skills necessary for effective work in Unix/Linux systems environments. Techniques for managing files and directories using the terminal, as well as basic system operations, will be taught. A module dedicated to writing scripts in Linux shell will enable the automation of frequently repetitive tasks. The course will also cover skills related to the version control system git, including creating and managing branches, committing changes, and pulling updates from a remote repository.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[INFL3_W04] has ordered, theoretically founded knowledge in programming, algorithms and complexity, programming languages and paradigms	The student knows the concepts related to basic Linux terminal commands. The student knows the principles of creating and executing scripts in Bash. The student knows the basics of using the version control system git, such as creating and deleting repositories, adding, deleting and committing changes, and resolving conflicts. The student knows the concept and syntax of regular expressions and the ability to use them to process text files.	[SW4] test/exam - oral or written [SW5] implementation of a problem task
[INFL3_W08] has knowledge of the use of software development, maintenance and test tools and environments	The student knows the concepts related to basic Linux terminal commands. The student knows the principles of creating and executing scripts in Bash. The student knows the basics of using the version control system git, such as creating and deleting repositories, adding, deleting and committing changes, and resolving conflicts. The student knows the concept and syntax of regular expressions and the ability to use them to process text files.	[SW4] test/exam - oral or written [SW5] implementation of a problem task
[INFL3_U03] is able to work in a team of IT specialists, including being able to manage his/her time, make commitments and meet deadlines, communicate using various techniques in the professional environment, including the use of dedicated tools	The student is able to use basic Linux shell commands. The student can write and run simple scripts in Bash using an editor. The student is capable of creating and managing repositories. The student can work effectively in a team of IT professionals, manage their time, take commitments and meet deadlines, and communicate using various techniques in a professional environment, including using dedicated tools.	[SU4] test/exam - oral or written [SU5] implementation of a problem task
[INFL3_K02] can precisely formulate questions to deepen his/her own understanding of a given topic or to find missing elements of reasoning	The student is able to precisely formulate questions that will help deepen their understanding of a given topic or identify missing elements in reasoning. The student is able to work in an IT team and communicate effectively with other team members.	[SK4] test/exam - oral or written [SK5] implementation of a problem task

Subject contents

1. Introduction to the Linux operating system: history of the Linux operating system and basic commands in the Linux terminal
2. Using the terminal in Linux: working with the console, managing files and directories, redirecting input/output streams, creating and editing files in the terminal
3. Basic git command usage: introduction to the git version control system, creating a git repository, basic operations on a git repository (adding, deleting, cloning), committing changes in a git repository, resolving conflicts in a git repository
4. Regular expressions: introduction to regular expressions, syntax and rules for writing regular expressions, using regular expressions in the Linux terminal, application of regular expressions
5. Operations on text files: processing text files in the Linux terminal, filtering the contents of text files, sorting and merging text files
6. Writing scripts in Bash: introduction to Bash, variables and constants in Bash, loops and conditions in Bash, functions in Bash, and user interaction in Bash
7. Branches in the git version control system: introduction to branches in the git version control system, creating and deleting branches in a git repository, working with branches in a git repository, merging branches in a git repository, resolving conflicts when merging branches in a git repository, retrieving and updating changes from a git repository

Prerequisites and co-requisites

No prerequisites required.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Solving practical tasks	50.0%	40.0%
Quizzes	50.0%	60.0%

Recommended reading	Basic literature	• S. Chacon, B. Straub, Pro Git, Wydawnictwo Apress, 2014. • W. E. Shotts, The Linux Command Line: A Complete Introduction, 2nd ed. San Francisco, CA: No Starch Press, 2019. • Ł. Sosna, Linux. Komendy i polecenia, Wydawnictwo Helion, 2023. • M. G. Sobell, Linux. Programowanie w powłoce. Praktyczny przewodnik, Wydawnictwo Helion, 2013.
	Supplementary literature	• D. J. Barrett, Efficient Linux at the Command Line: Boost Your Command-Line Skills, O'Reilly Media, 2022. • R. Blum and C. Bresnahan, Linux Command Line and Shell Scripting Bible, 3rd ed. Hoboken, NJ: John Wiley & Sons, 2015.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Empty	
Work placement	Not applicable	

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