



COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Language and Applied Informatics / Kalba ir praktinė informatika	DSTLAI

Academic staff	Core academic unit(s)
Coordinating: Assoc. Prof. Dr. Rita Juknevičienė Other: Assist. Prof. Dr. Andrius Vytautas Misiukas Misiūnas, Assist. Dr. Alminas Čivilis, Assoc. Prof. Dr. Agnė Brilingaitė, Austėja Bauraitė.	Vilnius University Faculty of Mathematics and Informatics, Naugarduko g. 24, LT-03225, Vilnius, tel. +370 5 219 3050, e-mail studijos@mif.vu.lt; Vilnius University Faculty of Philology, Universiteto g. 5, LT-01131, Vilnius, tel. +370 5 268 7207, e-mail studijos@flf.vu.lt

Study cycle	Type of the course unit
1 st (bachelor)	Compulsory

Mode of delivery	Semester or period when it is delivered	Language of instruction
Face-to-face	1 st semester	English

Requisites	
Prerequisites: ≥ B2 level of English	Co-requisites (if relevant): none

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
10	266	96	170

Purpose of the course unit		
The course aims to develop knowledge of software development and usage principles and provide practical skills in finding and applying software solutions, based on command line or having a graphical user interface, when solving linguistic problems.		
Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
After completing the course, students will be able to:		
DK.1.1 define natural language as a system and explain its key linguistic features, functions, structures, and societal roles, including multilingual communication in digital environments	Interactive lectures and seminars, literature analysis, discussions, group work, individual and group mini-projects	Continuous assessment and examination at the end of the course
DK.3.5 identify and apply common data formats, character encodings, and language typologies to manage, process, and exchange linguistic data across platforms	Group activities, visual aids, practical exercises, guided discovery, tutorials	Project defense and report, continuous assessment
DK.3.6 formulate and execute basic commands and programs in a command-line environment,	Tutorials, practical exercises, code tracing, debugging	Project defense and implementation

demonstrating the ability to specify input and output with IT/AI-based tools		
DK.3.7 apply principles of digital ethics to the use of open-source software, operating systems, and AI-driven tools, with attention to copyright, data integrity, and responsible digital practice	Discussions, interactive lectures, case studies, visual aids, brainstorming	Project report and implementation
BK.4.4 identify interdisciplinary problems at the intersection of linguistics and informatics, assess potential risks, and propose feasible digital solutions using algorithmic thinking and minimal programming	Interactive lectures, problem-based learning, group activities	Examination, project defense

Content	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	Tasks for individual work
Introduction to digital humanities. Intersection between the humanities and digital technologies. Core branches of linguistics.	2		2		0		4	10	Reading and analysis of relevant texts/literature, preparing for classroom discussion
Linking natural and programming languages. Statement vs sentence.	2		8		2		12	10	Reading and analysis of relevant texts/literature, practical assignments and tasks, case study
Word and word formation. Parsing principles. Parts of speech. Phrases.	2		2		2		6	10	Reading and analysis of relevant texts/literature
Typological language analysis, language universals. Programming language paradigms. Classification of natural and programming languages.	4		2		2		8	10	Reading and analysis of relevant texts/literature, practical assignments and tasks
Interdisciplinary branches of linguistics, defining problems in linguistics, and digital solutions for humanities, including AI integration.	4		2		0		6	35	Project work, research activities
Cross-disciplinary approach: language change, evolution, death.	2		2		0		4	10	Reading and analysis of relevant texts/literature, case studies
Multilingualism: communication strategies in a multilingual environment. Translation apps: pros and cons. Shifting multilingualism principle to programming languages. Passing parameters to AI-driven tools.	4		6		0		10	10	Reading and analysis of relevant texts/literature, practical assignments and tasks
Overview of software development and usage principles: operating systems,	4		0		6		10	20	Project work, assigned readings, case study

open-source software, free software, copyrights.									
Support of natural languages: encodings.	2		0		4		6	10	Assigned readings of documentation, practical exercises
Programming basics. Transforming linguistic instructions to programming code. Diving into the Python programming language.	4		0		6		10	16	Practical exercises, project work, assigned readings from documentation
Command line in practice. Ethical and responsible code development.	2		0		4		6	10	Practical exercises, project work
Brief introduction to state of the art in AI for humanities and big data management.	4		0		4		8	10	Assigned readings, watching videos
Test in a virtual learning environment	0		0		2		2	4	Repetition tasks
Project presentations	0		4		0		4	5	Preparation
Total	36		28		32		96	170	

Assessment strategy	Weight %	Deadline	Assessment criteria
Test	20	In the middle of the semester	The online test is organized using a virtual learning environment. The test contains a set of questions (various types, including interactive ones such as matching) to assess student's knowledge of basic software development and usage principles, command line usage, copyrights, vital algorithmic constructs, and encodings. Each question is assigned a number of points based on the level of knowledge or skill being assessed. Multiple-choice questions have penalty points for an incorrectly chosen answer. The total amount of points is rescaled to 2 points as a cumulative assessment.
Group project	30	During the semester	The activity includes group and individual assessment. The total assessment is structured using a 10-point scale and afterwards is mapped to a 3-point scale as a cumulative assessment. The project is done in groups of 2-3 students. The groups are formed by students themselves until the defined deadline. Group assessment: 7 points. The rubric includes the ability to define linguistic problems and needs for digital technologies to solve them, applying basic algorithmic constructs, digital solutions, and command line tools, finding digital solutions, and presenting results and insights. The group prepares a written report to be submitted before the defined deadline. Individual assessment: 3 points. The rubric includes the ability to present, prepare slides, argue, and answer questions regarding the solved linguistic problem using digital technologies. The group prepares the presentation for the project defense.
Exam	50	Examination period	<u>Students gain admission</u> to the exam if they collect at least 1.4 points (out of 2) in the test and 2 points (out of 3) in the project activity. The exam is organized as hybrid. The first part of the exam is executed using a virtual learning environment. No material can be used when solving the quiz tasks. The quiz contains various types of questions, including interactive ones. The second part is an open book exam. Students can use their notes, books, and any paper-based material. The part of the exam contains a set of continuous tasks setup to

			demonstrate the subject specific and generic competences developed in this subject. Ten-point assessment scale: 10 (excellent). Excellent, exceptional knowledge and abilities. 95-100% of questions answered correctly. 9 (very good). Very good knowledge and abilities. 85-94 % of questions answered correctly. 8 (good). Knowledge and abilities are above average. 75-84 % of questions answered correctly. 7 (average). Average knowledge and abilities; there are a few non-essential mistakes. 65-74 % of questions answered correctly. 6 (satisfactory). Knowledge and abilities are below average; there are mistakes. 55-64 % of questions answered correctly. 5 (weak). Knowledge and abilities meet the minimum requirements. 51-54 % of questions answered correctly. 4, 3, 2, 1. Minimum requirements are not met to varying extents.
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Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
Required reading				
VU	2025	Virtual learning environment		https://emokymai.vu.lt
Blake, Barry J.	2008	<i>All about Language</i>	(excerpts)	Oxford: Oxford University Press
Cenoz, Jasone	2013	Defining Multilingualism	Annual Review of Applied Linguistics 33, pp. 3–18	https://doi.org/10.1017/S026719051300007X
Duff, Patricia A.	2015	Transnationalism, Multilingualism, and Identity	Annual Review of Applied Linguistics 35, pp. 57–80	https://doi.org/10.1017/S026719051400018X
McGillivray, Barbara, and Gábor Mihály Tóth	2020	<i>Applying Language Technology in Humanities Research</i>	(excerpts)	https://doi.org/10.1007/978-3-030-46493-6
McGregor, William B.	2024	<i>Linguistics: An Introduction</i>	(excerpts)	London/New York: Bloomsbury Publishing
Schuster, Kristen, and Dunn, Stuart, eds.	2020	<i>Routledge International Handbook of Research Methods in Digital Humanities</i>	(excerpts)	Oxford: Taylor & Francis Group. https://ebookcentral.proquest.com/lib/viluniv-ebooks/detail.action?pq-origsite=primo&docID=6267325#
Schwandt, Silke	2020	<i>Digital Methods in the Humanities: Challenges, Ideas, Perspectives</i>	(excerpts)	Bielefeld: Bielefeld University Press. https://doi.org/10.1515/9783839454190
Stavans, Anat, and Charlotte Hoffmann	2015	<i>Multilingualism</i>	(excerpts)	Cambridge: Cambridge University Press. https://www.cambridge.org/core/books/multilingualism/844178FFA34A2BDE689819DE118D3BBE
Cruz-Ferreira, Madalena, and Sunita A Abraham	2011	<i>The Language of Language: A Linguistics Course for Starters</i>	3rd ed.	Seattle, WA: CreateSpace
Recommended reading				

Crystal, David	2017	<i>The Cambridge Encyclopedia of Language</i>	third edition	Cambridge: Cambridge University Press.
Šeškauskienė, Inesa	2013	<i>Ways with Words: Insights into the English lexicon and some cross-linguistic aspects of study</i>		Vilnius: VU Publishing House

Updated: 2026-08-17