RĪGAS TEHNISKĀ
UNIVERSITĀTE

RTU Course "Programming Languages"
33000 null

General data

Code	DIP208
Course title	Programming Languages
Course status in the programme	Compulsory/Courses of Limited Choice
Responsible instructor	Marina Uhanova
Academic staff	Natālija Prokofjeva Igors Ščukins Sabina Kataļņikova Jeļena Jevsjukova Ēvalds Masaļskis Igors Mihailovs Valdis Saulespurēns Inese Simkeviča Dzintars Tomsons
Volume of the course: parts and credits points	1 part, 3.0 credits
Language of instruction	LV, EN
Annotation	Programming language concept, standard and versions, alphabet, syntax and semantics. Classifications, characteristics and usage possibilities of programming languages. Technology of program development. Program structure. Example of simple program. Basic objects of programming languages, operators and data, review of control statements. Functions. Objects and storage classes. Pointers, arrays, string processing. Structures. Files. Graphics. Programming language development tendencies.
Goals and objectives of the course in terms of competences and skills	The aim of the course is to present to students different programming languages, concepts of programming language development, as well as to teach them how to develop and to implement software programs in C for different problem solving. Objectives of the course: 1) to consider programming languages of different classes by analyzing their syntax and possibilities of usage; 2) to consider basic elements of programming language C, its syntax and semantics; 3) to teach students to develop programs in C.
Structure and tasks of independent studies	Students should fulfil four laboratory works: 1) programming of branched processes; 2) information processing with functions; 3) structures and string processing; 4) data processing with files.
Recommended literature	Obligātā/Obligatory: 1. Scott L.M. Programming Language Pragmatics. 4th Edition. Morgan Kaufmann, 2015. – 992 p. 2. Gregoire Marc. Professional C++. Wrox; 5. edition, 2021. - 1312 p. Papildu/Additional: 3. Martin Odersky, Lex Spoon, Bill Venners. Programming in Scala. Fifth Edition. Artima Press, 2021 - 898 p. 4. Christian Nagel. Professional C# and .NET 8th Edition. Wrox, 2021 - 1008 p.
Course prerequisites	Algorithms, programming and basics of data structures

Course contents

Content	Full- and part-time intramural studies		Part time extramural studies	
	Contact Hours	Indep. work	Contact Hours	Indep. work
Programming language concept, standard and versions, alphabet, syntax and semantics, classifications.	4	4	0	0
Program structure. Example of simple program. Basic objects of programming languages, operators and data.	8	8	0	0
Control statements. Functions. Objects and storage classes.	8	8	0	0
Pointers, arrays, string processing.	10	10	0	0
Structures and files.	10	10	0	0
Total:	40	40	0	0

Learning outcomes and assessment

Learning outcomes	Assessment methods
Knows basic elements of programming languages, characteristics and usage of different languages, their classifications according to different criteria, and is able to use basic objects of programming language	Prepared report. Tests. Positive assessment of final examination.
Is able to develop, run and analyze a program for processing of branched processes.	Independently completed and positively evaluated laboratory work.

Is able to develop and to run a program for information processing with functions.	Independently completed and positively evaluated laboratory work.
Is able to develop and to run a program for structures and string processing.	Independently completed and positively evaluated laboratory work.
Is able to develop and to run a program for information processing with files.	Independently completed and positively evaluated laboratory work.

Evaluation criteria of study results

Criterion	%
Laboratory works	20
Tests	20
Reports and study projects	20
Examination	40
Total:	100

Study subject structure

Part	CP	Hours			Tests		
		Lectures	Practical	Lab.	Test	Exam	Work
1.	3.0	1.0	0.0	1.0		*	