Subject code	Credits
INFN1003	6

Course title in Lithuanian

PROGRAMAVIMO PAGRINDAI

Course title in English

FUNDAMENTALS OF PROGRAMMING

Short course annotation in Lithuanian (up to 500 characters)

Dalyko tikslas – supažindinti studentus su programavimo principais, išmokyti C++ programavimo kalbos sintaksę, išaiškinti programų kūrimo etapus ir taisykles. Kurso metu studentai supažindinami su sąlyginiais ir ciklo sakiniais, išmokomi skaitinių ir tekstinių reikšmių tvarkymo, paiešos, skaičiavimų. Paieškos, įterpimo, išmetimo, rikiavimo algoritmų su vienmačiais ir dvimačiais masyvo elementais principų. Aiškinami programavimo stiliaus, kultūros bei programos dokumentavimo pagrindai. Išklausę kursą studentai sugebės sudaryti taikomųjų uždavinių sprendimo algoritmus, gebės sukurti programas ir parengti dokumentaciją.

Short course annotation in English (up to 500 characters)

The course will cover basic terminology of structural programming, input/output control, decision control, repetition, subroutines, analyses of the data in one and two dimensional arrays, elementary strings and file processing. After finishing the course students will be able to develop algorithms and write computer instructions to solve problems, will learn programming in C language. Teaching methods are: lectures and laboratory works.

Prerequisites for entering the course

No prior programming experience required.

Course aim

Understand of designing of an algorithm and developing program.

Content

No	Content (topics)
1.	Algorithms, data types and variables
2.	Handling of inputs-outputs and the flow control: loop and switch
3.	Functions and principles of computer programming
4.	Handling the text file data
5.	Working with the elements of one-dimensional array
6.	Analysis and calculations with elements of two-dimensional array
7.	Explaining the constructions of an algorithms for calculations (sum, average, number of positives,etc.), finding the minimum or the maximum, the sum of elements by criteria.
8.	Explaining the constructions of an algorithms for searching, sorting, interchanging,

Distribution of workload for students (contact and independent work hours)

Practicum	**75 hours**
Individual students work	**85 hours**
Total:	**160 hours**

Structure of cumulative score and value of its constituent parts

Final written exam (50%), mid-term written exam (17%), and assessments of laboratory (practical) work (33%).

Recommended reference materials

No.	Publication year	Authors of publication and title	Publishing house	Number of copies in		
				University library	*Self-study rooms*	*Other libraries*
Basic materials						
1.	2016	V.Barzdaitis „Programavimo pagrindai“ - distance learning course				Electronic papers, in distance learning system: http://moodle.vdu.lt
2.	2014	Programming video/text lectures				http://programavimopamokos.net/index.php?vaizdas=CPP
3.	2016	Aurimas Šimkus Programming tutorials				http://coderland.lt/
Supplementary materials						
1	2014	Ivor Horton.	SlideShare	Free resources on SlideShare:		

		„Beginning Visual C++“		http://www.slideshare.net/hodienloi/ivor-hortons-beginning-visual-c-2013
2	2016	Visual Studio Quick Reference Guidance		Free resources on Internet: *https://vsarquickguide.codeplex.com*
3	2016	Visual C++ Developer Center		Free resources on Internet: https://msdn.microsoft.com/en-us/vstudio/aa718325.aspx
4	2016	CPP programming tutorials, best practice examples, working examples, debuging instructions		http://www.bogotobogo.com/ cplusplus/cpptut.php http://www.cplusplus.com http://www.learncpp.com/
5		Free forums resources: best news, issues solving solutions.		http://stackoverflow.com/questions/ 388242/the-definitive-c-book-guide-and-list https://www.quora.com/What-are-the-best-C++-books

Course programme designed by

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