

DESCRIPTION OF THE STUDY SUBJECT

Title

BASICS OF PROGRAMMING

Scope of the subject

Semester	Mode of studies	Structure*				Total number of hours	Number of credits	Group and type of subjects
		L	Lw	C	S			
II	Full-time	18	48	12	83	161	6	Compulsory subjects of the study field
III	Part-time	8	28	42	83	161	6	

*L – lectures, PS – practical activities, seminars, LW – laboratory work, PR – practice, CP – course paper, C – consultations, S – self-study

Aim of the subject

To know and understand programming environments, the structure of the programme, the purpose of variables, arrays, functions, procedures, modules, condition and loop structures, graphics and animation development tools, possibilities of using files, to be able to program in high-level programming languages, combine information, formulate and detail objectives, design and submit universal programs.
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Necessary background knowledge for studying the subject

Students shall have heard subjects basics of algorithmization, discrete mathematics.
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Content of the subject

Title of the topic and description of the content	Number of contact hours			S	Total number of hours
	L	Lw	C		
1. The overview of programming languages and styles. The main elements of programming languages. The structure of the program. Variables, constants. Data types. Operators. Arrays. Derived data types.	2		-	-	2
Laboratory work No. 1. To prepare program codes, which would employ logical (boolean), the whole number (byte, interger, long), the real number (single, double), symbolic (string), date (date) type variables, arrays.	-	2	-	4	6
2. Branching algorithms. Choice of alternatives. Loops.	2	-	-	-	2
Laboratory work No. 2. Preparation of the program, which uses commands “If ... Then ... Else”, “Select Case”, “For ... Next”, “Do ... Loop”, “For Each ... Next”, “With”.	-	4	1	6	11
3. Files. Programmatic management of files and directories. File types.	2	-	-	-	2
Laboratory work No. 3. To prepare program codes, in which data would be recorded / read to / from a file(s), in which consistent and direct addressing methods for storing information would be used.	-	6	1	8	15
4. Functions, procedures, modules. Implementation of communications between sub-programs.	2	-	-	-	2
Laboratory work No. 4. To prepare program codes, in which at least one function, one procedure, one module are used.	-	6	1	8	15
5. Templates. Dialogue boxes, menus of commands Projects.	4	-	-	-	4
Laboratory work No. 5. To prepare a design of the program, in which at least 2 dialogue forms, command menus, lists of objects are used.	-	8	1	10	19
6. Identification of communication between the program code and the data base management system. Programmatic management of the database.	4	-	-	-	4
Laboratory work No. 6. To prepare a program in which data would be recorded / read to DB tables, relations between DB tables would be identified, reports would be formed.	-	10	2	12	24
7. Graphic objects. The object of time and animation.	2	-	-	-	2
Laboratory work No. 7. To prepare a program code, in which graphic object animation would be implemented.	-	12	2	8	22
Individual work. Preparation (development) of the program (project) – animated game.	-	-	2	16	18
Preparation and taking the exam			2	11	13
Total number of hours	18	48	12	83	161

Assessment of learning outcomes

Ten-point criteria-based assessment system as well as cumulative assessment using individual cumulative index (ICI) are applied. The overall grade is the sum of grades for intermediate accountings and examination (E) multiplied by
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weighted coefficients.
 ICI = 0,4 Lw + 0,2 IND + 0,4 E, where Lw – laboratory works, IND – individual work

Recommended literature

Key literature						
No.	Year of publishing	Author(s) and title of the publication	Publishing house	Number of copies and/or internet link		
				ŠSC library	Other premises	Other libraries *
1.	2013	Blonskis J., Bukšnaitis V. ir kt. Programavimo įvadas	Technologija	3	-	5
2.	2012	Ostreika, A., Platužienė J. Įvadas į programavimą VB.NET aplinkoje	Technologija	3	-	7
3.	2008	Ostreika A. Programavimo Visual Basic pagrindai: mokomoji knyga	Technologija	5	-	7
4.	2006	Starkus B. Visual Basic 6 jūsų kompiuteryje	Smaltija	6	-	8
Additional literature						
No.	Year of publishing	Author(s) and title of the publication	Publishing house and/or internet link			
1.	2014	Halvorson M. Microsoft Visual Basic 2013 Step by Step	Microsoft			
2.	2011	Stephen R. Stephens' Visual Basic Programming 24-Hour Trainer	Wiley Publishing			

* ŠAVB – Šiauliai Region Povilas Višinskis Public Library, ŠU – library of Šiauliai University

Required material resources and their short description

<ul style="list-style-type: none"> • Equipment (devices): computers (16 units), computers connected to the local network and connected to the Internet, multimedia projector, printer. • Software: Visual Basic V. 6.0 , VB.net, Windows 10, MS SQL Server 2012 or later version.

The description prepared by:

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