

Syllabus
Fall semester 2020-2021 y.r.
On the educational program «6B06102 – Information systems»

On the educational program «Software Information Systems»							
Code of the discipline	Name of the discipline	ISW	A number of hours in a week			A number of credits	ISWT
			Lecture	Practice	Laboratory		
OOP 2206	Object-oriented programming	98	15		30	3	6
Academic information about the course							
Type of studying	Type of the course	Type of the lecture	Type of the practice		A number of ISW	Type of the final control	
Offline / Online	Theoretical, practical	Problem oriented	Learning the concepts of object-oriented programming and implementing programs to practice practical skills		Not less than 3	Written exam	
Lecturer	Karyukin Vladislav Igorevich					Office hour	According to the schedule
e-mail	vladislav.karyukin@gmail.com , vladislav.karyukin@kaznu.kz						
Phone number	+77479574800						
Laboratory work	Карюкин Владислав Игоревич						
e-mail	vladislav.karyukin@gmail.com , vladislav.karyukin@kaznu.kz					Office hour	According to the schedule
Phone	+77019405992						
Academic presentation of the course							

The purpose of the course **Expected results of studying (RS)**

Indicators of achieving RS (for each RS at least 2 indicators)

This course is aimed at studying the concepts of object-oriented programming, as well as understanding their practical implementation by solving real-life practical problems of varying complexity.

RS1 (cognitive) Know theoretical and methodological concepts of OOP

- 1.1 – the ability to build diagrams of classes and objects
- 1.2 – know the features of classes and objects, as well as OOP paradigms: inheritance, encapsulation, polymorphism and abstraction

RS2 (functional) Apply knowledge of OOP concepts to create console applications and Windows forms

- 2.1 - create programs for input and output of data in the console and implement the console user interface
- 2.2 - develop multifunctional Windows applications that are well understood by both developers and users

RS3 (functional) Apply OOP paradigms to compose programs of various levels of complexity: from simple console to a product of academic and industrial importance

3.1 - be able to connect to databases and files for input and output of information
3.2 - creating tabular display forms in Windows forms

RS 4 (system) Creation of complex multifunctional applications

4.1 - create application diagrams with methods for processing and storing information
4.2 - building the interaction of various structural elements with each other

Prerequisites and postrequisites	Prerequisites: Programming, database fundamentals Postrequisites: Web programming
Литература и ресурсы	<p>Literature: Main:</p> <ol style="list-style-type: none"> 1. Bill Wagner. More Effective C# (Includes Content Update Program): 50 Specific Ways to Improve Your C# (Effective Software Development Series) 2nd Edition. 2. Jon Skeet. C# in Depth: Fourth Edition 4th Edition 3. Dan Clark. Beginning C# Object-Oriented Programming (Expert's Voice in .NET) 2nd ed. Edition 4. Raihan Taher. Hands-On Object-Oriented Programming with C#: Build maintainable software with reusable code using C# Paperback – February 28, 2019 5. Svetlin Nakov, Vesselin Kolev. Fundamentals of Computer Programming with C#: Programming Principles, Object-Oriented Programming, Data Structures (free programming books) Paperback – February 9, 2014 <p>Additional: The videocourse The Complete C# and Object-Oriented Programming Course available in OneDrive</p> <p>Resources - Software and internet resources: Microsoft Visual Studio, Microsoft SQL Server, Microsoft Office Word, WinRAR, WordPad, Power Point, Adobe Reader, Paint.</p> <p>Online availability: additional study materials, homework assignments and projects can be found in EMCD at univer.kaznu.kz.</p>
Academic policy of the course in the context of university moral and ethical values	<p>Rules of academic conduct:</p> <ol style="list-style-type: none"> 1. For each classroom session, you should prepare in advance according to the schedule below. The preparation of the assignment should be completed before the classroom session where the topic is discussed. 2. Academic values: <ol style="list-style-type: none"> 1. IWS laboratory exercises should be independent, creative. 2. Plagiarism, forgery, the use of cheat sheets, cheating at all stages of knowledge control are inadmissible Students with disabilities can receive consulting assistance by email - vladislav.karyukin@gmail.com
Evaluation policy	<p>Criteria evaluation: assessment of learning outcomes in relation to descriptors (checking the formation of competencies at midterm control and exams). Summative evaluation: assessment of the activity of work in the classroom; assessment of the completed assignment.</p>

Academic calendar and the content of the course

Week	A name of the topic	RS	ID	A number of hours	Maximum points	Knowledge evaluation form	A form of classes / platform
1	L1. Fundamentals of C# language	RS1	ID 1.1.	1	0		Classroom, video lecture in MS Teams
1	LW1. Simple operations in C#	RS1	ID 2.2	2	5	A report in Word file	Classroom, webinar in MS Teams
2	L2. Fundamentals of object-oriented programming	RS1	ID 1.1	1	0		Classroom, video lecture in MS Teams
2	LW2. Operations with structs and strings	RS1	ID 1.1	2	10	A report in Word file	Classroom, webinar in MS Teams
3	L3. Concepts of object-oriented programming	RS2	ID 2.1	1	0		Classroom, video lecture in MS Teams
3	LW3. Loops, functions and recursions	RS2	ID 1.2	1	10	A report in Word file	Classroom, webinar in MS Teams
3	ISWT1. Consultation on doing ISW1				0		Classroom, webinar in MS Teams
3	ISW1. Implementation of project with classes	RS1	ID 1.1		25		Classroom, webinar in MS Teams
4	L4. Inheritance, encapsulation, polymorphism and abstraction	RS1	ID 1.1	1	0		Classroom, video lecture in MS Teams
4	LW4. Creating classes and objects	RS2	ID 2.1	2	10	A report in Word file	Classroom, webinar in MS Teams
5	L5. Constructors and destructors	RS2	ID 2.1	1	0		Classroom, video lecture in MS Teams

5	LW5. Creating constructors and work with access modifiers	RS2	ID 2.2	2	15	A report in Word file	Classroom, webinar in MS Teams
5	ISWT2. Consultation on doing ISW 2				0		Webinar in MS Teams
5	ISW 2. Implementation of project with classes 2	RS1	ID 1.6		25	A report in Word file	Classroom, webinar in MS Teams
5	BC 1				100		
6	L6. Types of classes. Sealed and partial classes	RS1	ID 1.2	1	0		Classroom, video lecture in MS Teams
6	LW6. Building constructors and destructors for the class Person	RS2	ID 2.2	2	10	A report in Word file	Classroom, webinar in MS Teams
7	LW7. Comparison between structs and enumerators	RS2	ID 2.2	1	10		Classroom, video lecture in MS Teams
7	ISWT 3. Consultation on doing ISW3				0		Classroom, webinar in MS Teams
7	ISW 3. Implementation of project with classes 3	RS1	ID 1.6		25	A report in Word file	Classroom, webinar in MS Teams
8	L8. Collections	RS2	ID 2.2	1	0		Classroom, video lecture in MS Teams
8	LW8. Creation Photobook classes	RS2	ID 2.2	2	10	A report in Word file	Classroom, webinar in MS Teams
9	L9. Windows forms applications	RS4	ID 4.1	1	0		Classroom, video lecture in MS Teams
9	LW9. Designing the Windows Forms application	RS2	ID 2.2	2	10	A report in Word file	Classroom, webinar in MS Teams
9	ISWT 4. Consultation on doing ISW 4				0		Classroom, webinar in MS Teams
9	ISW 4. Creating Notepad in Windows Forms	RS4	ID 4.1 ID 4.2		25	A report in Word file	Classroom, webinar in MS Teams

10	L10. Creating elements of Windows forms	RS2	ID 2.2	1	0		Classroom, video lecture in MS Teams
10	LW10. Adding buttons to Windows forms	RS2	ID 2.2	2	10	A report in Word file	Classroom, webinar in MS Teams
10	MT (Midterm Exam)				100		
11	L11. Exception handling in Windows forms	RS2	ID 2.2	1	0		Classroom, video lecture in MS Teams
11	LW11. Adding exception handling to Windows forms	RS2	ID 2.2	2	10	A report in Word file	Classroom, webinar in MS Teams
12	L12. CRUD operations in Windows Forms	RS2	ID 2.1 ID 2.2	1			Classroom, video lecture in MS Teams
12	LW12. Adding CRUD operations to Windows Forms	RS3	ID 3.1 ID 3.2	2	10	A report in Word file	Classroom, webinar in MS Teams
13	L13. Working with XML files	RS3	ID 3.1 ID 3.2	1	0		Classroom, video lecture in MS Teams
13	LW13. Adding information to XML files	RS3	ID 3.1 ID 3.2	2	10	A report in Word file	Classroom, webinar in MS Teams
13	ISWT 5. Consultation on doing ISW 5				0		Webinar in MS Teams
13	ISW5. Creating a calculator in Windows Forms	RS 4	ID 4.1 ID 4.2		25	A report in Word file	Classroom, webinar in MS Teams
14	L14. ListViews and TreeViews in Windows Forms	RS3	ID 3.1 ID 3.2	1	0		Classroom, video lecture in MS Teams
14	LW14. Adding ListViews and TreeViews to Windows Forms	RS3	ID 3.1 ID 3.2	1	10	A report in Word file	Classroom, webinar in MS Teams
15	L15. Visualization in Windows Forms	RS3	ID 3.1 ID 3.2	1	0		Classroom, video lecture in MS Teams

15	LW15. Adding images to Windows Forms	RS3	ID 3.1 ID 3.2	1	10	A report in Word file	Classroom, webinar in MS Teams
15	ISWT 6. Consultation on ISW 6				5		Webinar in MS Teams
15	ISW 6. Creating a gallery in Windows Forms	RS4	ID 4.1 ID 4.2		25	A report in Word file	Classroom, webinar in MS Teams
	BC 2				100		

Dean of the faculty, associate professor

Urmashev B.A.

A chairman of the methodological bureau

Gusmanova F.R.

A head of department

Mussiraliyeva Sh.Zh.

Lecturer

Karyukin V.I.