Syllabus of the educational discipline

« TECHNOLOGIES OF APPLIED PROGRAMMING IN C# »

Cycle of Higher Education	*First cycle of higher education (Bachelor's degree)*
Field of Study	*12 Information Technologies*
Specialty	*123 Computer engineering*
Educational program	*Computer systems and networks*
Discipline status	*Compulsory*
Teaching language	*English*
Year of studies, semester	*3 year (5 semester)*
Number of credits ECTS	*4 credits*
Distribution by types of trainings and hours of study	*Lectures, Laboratory studies, Independent training*
Form of final assessment	*Test*
Teacher	*Voitovich B. V., assistant lecturer of department of computer systems and networks*
Teacher's contacts	*bohdan.voitovych@uzhnu.edu.ua*
Course Schedule	*According to the timetable*

The purpose of the study discipline "Technologies of applied programming in C#" is to get acquainted with the basics of structural, modular and object-oriented programming in C# language. To learn the basics of .NET platform and Framework environment. The C# programming course is one of the main courses devoted to modern programming systems.

As a result of studying the discipline the student must:

know:

- fundamental concepts and system methodologies, international and professional standards in the field of information technology, the ability to use modern tools and computing (according to the profile)

- basics of structural, modular and object-oriented programming in C# Basics of .NET platform and Framework, principles of using .NET class libraries in program development

be able to:

- create programs in C# to solve a wide variety of engineering practice problems and apply the knowledge in their professional activities. Possess the components of graphical interface, be familiar with the latest programming technologies, learn to create Windows applications

Prerequisites for learning

Programming, Object-Oriented Programming, System Programming

Content of the educational discipline

Topic 1. Overview of .NET, .NET types and the .NET namespace
Topic 2. C# basics. Variables, operations, operators and expressions
Topic 3. Basic OOP concepts
Topic 4. The concept of class
Topic 5. Class methods
Topic 6. Operator overloading and type conversion
Topic 7. Basic class libraries
Topic 8. Working with arrays and strings
Topic 9. Regular expression classes
Topic 10. Exceptional situations
Topic 11. Class inheritance
Topic 12. Using delegates
Topic 13. Anonymous functions
Topic 14. Interfaces and structured types
Topic 15. Universal types
Topic 16. Graphical interface

Course page on the	*Syllabus of the educational discipline, hyperlinks to electronic*

Moodle platform (personal training system)	*publications of the discipline, recommended literature, students' attendance, lecture materials, presentations, questions for self-control, methodical materials for laboratory works, tests, tasks for checking students' knowledge.* https://moodle.uzhnu.edu.ua

Recommended literature

1. *Herbert Schildt C# 4.0 The Complete Reference. - McGraw Hill; 1st edition, 2010. - 976p*
2. *Andrew Troelsen Pro C# 7: With .NET and .NET Core. - Apress; 8th edition, 2017. - 2077p*
3. *Jeffrey Richter CLR via C#. - Microsoft Press; 4th edition, 2012. - 896p.*

Assessment system of learning outcomes

The ECTS grade that a student receives after studying a credit module of a discipline is determined according to the student's rating. A student's credit module rating consists of the points the student receives during the semester for the following types of work:

1. Modular control work (MCW) duration of 2 acad. hours each. The maximum number of points for the MCW is 50 points.

2. Performance of laboratory works.

During the semester, students perform laboratory works(maximum number of points - 40)

Scores on individual and independent work of students are awarded for: preparation of essays, modernization of tasks, creative approach to task performance, performance of tasks to improve didactic materials on the discipline: 0-10 points for each module.

Each module is assessed a maximum of 100 points. At the end of the discipline a rating score is derived as the arithmetic average of the points from the two modules.

ECTS and national grading scale

Mark scale	ECTS	Exam	Test
90 - 100	A	Excellent	Satisfied
82 - 89	B	Good	
74 - 81	C		
64 - 73	D	Satisfactory	
60 - 63	E		
35 - 59	FX	“Unsatisfactory” with possibility to pass the exam again	“Not satisfied” with possibility to pass the exam again
1 - 34	F	“Unsatisfactory” with obligatory repeated study of the discipline	“Not satisfied” with obligatory repeated study of the discipline