Syllabus of the course
«Object-Oriented Programming»

Specialty	*121 Software Engineering*
Study Programme	*Software Engineering*
Study cycle (Bachelor, Master, PhD)	*the first (Bachelor) level of higher education*
Course status	*mandatory*
Language	*English*
Term	*second year, third&fourth semesters*
ECTS credits	*12*
Workload	*Lectures – 64 hours.*
	Practical studies – 0 hours.
	Laboratory studies – 68 hours.
	Self-study – 228 hours.
Assessment system	*Grading (third semester), Grading including Exam (fourth semester)*
Department	*Department of Information Systems, 61166, Kharkiv, Nauky Av., 9a, Simon Kuznets KhNUE, main building, office 413* *phone. +38(057)702-18-31 (add. 4-37)* *website: https://kafis.hneu.net/*
Teaching staff	*Yurii Eduardovich Parfonov, PhD (Information technology), Senior Researcher*
Contacts	*Y. E. Parfonov yurii.parfonov@hneu.net*
Course schedule	*Lectures: according to the schedule* *Laboratory studies: according to the schedule*
Consultations	*At the Information Systems Department, offline, according to the schedule, individual, PNS chat.*

Learning objectives and skills:

mastering object-oriented approach and modern programming languages required to develop object-oriented applications

Structural and logical scheme of the course

Prerequisites	Postrequsites
Basics of algorithmisation	Internet Programming
Discrete mathematics	Software quality and testing
Programming	Web programming
	Software engineering

Course content

Module 1: *The basics of the Object-Oriented Paradigm*

Topic 1. The basics of .NET and Java SE

Topic 2. The fundamentals of an object oriented programming language

Topic 3. Object-oriented analysis (OOA), Object-oriented design (OOD) and Object-oriented programming (OOP)

Module 2: *Technology of OOP*

Topic 4. Data abstraction and encapsulation

Topic 5. Code reuse

Topic 6. Basic usage of Git version control system

Topic 7. Object-oriented design principles SOLID

Topic 8. Introduction to design patterns
Topic 9. Class libraries
Module 3. *Exception Handling and Class Libraries*
Topic 10. Exception handling
Topic 11. Standard class libraries of Java SE and .NET

Teaching environment (software)

Multimedia projector, S. Kuznets PNS, Corporate Zoom system

Assessment system

Assessment of students' learning outcomes is carried out by the University according to the cumulative 100-point system.

Current control is carried out during lectures and practical (seminar) classes and aims to assess the level of students' readiness to perform particular tasks, and is assessed by the amount of scored points.

The maximum amount during the *third* semester – 100 points; the minimum amount required is 60 points.

Current control includes the following assessment methods: assignments on a particular topic; testing; presentations.

The maximum amount during the *fourth* semester – 60 points; the minimum amount required is 35 points. Final control is carried out at the end of the semester in the form of an exam (the maximum amount is 40 points, the minimum amount required is 25 points).

Current control includes the following assessment methods: assignments on a particular topic; testing; presentations.

More detailed information on assessment and grading system is given in the technological card of the course.

Course policies

Teaching of the academic discipline is based on the principles of academic integrity.

Violation of academic integrity includes academic plagiarism, fabrication, falsification, cheating, deception, bribery, and biased assessment.

Educational students may be brought to the following academic responsibility for breach of academic integrity: repeated assessment of the corresponding type of learning activity.

More detailed information about competencies, learning outcomes, teaching methods, assessment forms, self-study is given in the Course program