Simon Kuznets Kharkiv National University of Economics

Syllabus of the course

"Software engineering"

Speciality.	*121 Software engineering*
Educational programme	*Software engineering*
Educational level	*First (bachelor's) level of higher education*
Status of the discipline	*Mandatory*
Language of instruction	*Ukrainian*
Course/semester	*3rd year 6th semester*
Number of ECTS credits	*5*
Distribution of hours by forms of educational process and types of classes	*Lectures - 16 hours.* *Laboratories - 32 hours.* *Independent work - 102 hours.*
Form of semester control	*Exam*
Department	*Information Systems, 9a, Nauky Ave. 9a, Kharkiv, 61166, Ukraine, Tel. +38(057)702-18-31, E-mail: kafis@hneu.edu.ua*
Teacher(s)	*Iryna Zolotaryova, Professor, PhD in Economics*
Contact information teacher(s)	*iryna.zolotaryova@hneu.net*
Training days	*Lectures: according to the current class schedule* *Laboratory: according to the current class schedule*
Consultations	*At the Department of Information Systems, by the schedule of consultations, individual, chats in the PNS*

The discipline aims to provide students with practical skills in analyzing and modeling a problem area, developing the ability to work with software requirements: identifying, analyzing, specifying, and verifying requirements; designing architecture, composition of components, interfaces, and other software characteristics, managing the software development process.

Prerequisites for the course

Structural and logical scheme of studying the discipline

Prerequisites.	Post-qualifications
Algorithms and data structures	Course project: Software engineering
Object-oriented programming	IT project management
System and business analysis in the IT industry	Software quality and testing
	Designing the interface of software systems
	Diploma project

Content of the course

Topic 1: Software life cycle models. Documentation of an automated software system. Vision & Scope, SRS, User Stories.

Topic 2. Software Requirements as a field of knowledge in software engineering. Requirements management and connection with SWEBOK tasks.

Topic 3: Features of defining and analyzing business requirements. Determination of requirements as a stage of software development. Problems of managing the process of developing software requirements.

Topic 4. Object-oriented approach to software design. UML language.

Topic 5. The process of requirements analysis. Diagram of UML use cases.

Topic 6. Methods of object analysis and modeling. Advanced requirements analysis. UML activity diagram.

Topic 7. Managing changes to software requirements. The main tasks of requirements management. Tracing requirements.

Topic 8: The software design stage. UML state diagram.

Topic 9: System architecture design. UML class diagram.

Topic 10. Software developers. Work in a team.

Material and technical (software) support of the discipline

Draw.io, lucidchart, Visual Paradigm, services for UML diagrams

Course page on the Moodle platform (personal learning system)	*https://pns.hneu.edu.ua/course/view.php?id=5515*

Learning outcomes assessment system

The University uses a 100-point cumulative system for assessing the learning outcomes of higher education students.

The current control is carried out during lectures, practical (seminar) classes and is aimed at checking the level of readiness of the higher education student to perform a specific job and is assessed by the amount of points scored.

The final control includes semester control, which is conducted in the form of an exam.

The maximum possible number of points for the current control during the semester for the discipline is 60, the exam - 40 points. The minimum possible number of points is 60.

Current control includes the following control activities: completion of team projects on topics, preparation of current control papers; presentations on topics, and writing essays.

More detailed information on the system of assessment and accumulation of points in the discipline is provided in the curriculum (technological map) for the course.

Policies of the discipline

The teaching of the discipline is based on the principles of academic integrity. Violations of academic integrity include academic plagiarism, fabrication, falsification, cheating, deception, bribery, and biased assessment. For violations of academic integrity, students are held to the following academic responsibility: re-assessment of the relevant type of academic work

More detailed information on competencies, learning outcomes, teaching methods, forms of assessment, and independent work is provided in the Work Programme of the discipline (link)

The Syllabus was approved at a meeting of the department on 19 January 2024.

Minutes No. 8