

**Code and name of speciality (programme subject area):** 121 Software Engineering

**Title of specialization:**

**Code and title of the field of study:** 12 Information Technologies

**Qualification:** Bachelor of Software Engineering

**Number of credits:** 240 ECTS credits

**Level of higher education:** the first (bachelor)

**Requirements to the previous education level:**

A person has the right to acquire the bachelor level in case he/she has obtained general secondary education or education according to the educational programme of junior bachelor in relevant speciality.

**Qualification requirements:** higher education document is issued to a person who has successfully completed the educational programme and has been attested. Final attestation is carried out by evaluating the degree of maturity of competences. The form of attestation is bachelor's graduation work defence.

**Programme learning outcomes:**

The ability to analyse problems during software development.

The ability to communicate in interactive mode during professional activity with colleagues and experts in subject areas.

The ability to use information and communication technologies in communication, exchange, collection, analysis and processing of information.

The ability to demonstrate processes and outcomes of professional activities, developing presentations and reports.

To know and be able to use methods and tools for collection, analysis and formulation of software requirements.

To know and apply methods of algorithms design, as well as design of software and data and knowledge structures.

To perform motivated choose of programming languages for solving problems of creation and maintenance of software.

To apply software tools of software domain analysis, design, testing, visualization, measurement and documentation.

To know, understand and apply modern approaches to software evaluation and quality assurance.

To know, understand and apply appropriate mathematical concepts, methods of domain, system and object-oriented analysis and mathematical modelling for software development.

To analyse, evaluate and select instrumental and computing tools, technology, algorithmic and software solutions to solve software engineering tasks.

To know and be able to apply methods and tools of project management.

To know and possess the skills to implement basic algorithms and programming data structures.

To know and be able to apply technology and methods of design and programming.

To know the basics of protection of production personnel and people from accidents, catastrophes, to monitor the compliance of production processes with the requirements of environmental protection and life safety.

To use a foreign language at the professional level.

To know, understand and apply fundamental concepts and basic principles of functioning of language, instrumental and computing software engineering tools.

To know the code of professional ethics, to understand social importance and cultural aspects of software engineering and adhere to them in professional activity.

To be able to calculate cost-effectiveness of software systems.

To understand, analyse, purposefully search and choose necessary for solving professional tasks information and knowledge resources taking into account modern science and technology achievements.

To know and apply information technologies of data processing, storage and transmission.

To be able to apply methods of software component development, highlighting interfaces, implementation and interaction among modules, subsystems and components.

To know and be able to apply methods of software verification and validation.

To design software components for information systems.

To design software components for mobile devices.

To know, understand, analyse, select and effectively apply means of information security assurance and data integrity in accordance with applied problems being solved and software systems being created.

To conduct pre-project examination of subject area, systematic analysis of the design objects.

**Employment opportunities:**

Bachelor of speciality 121 “Software Engineering” may hold positions in companies, small enterprises and institutes of technology and information sector, environmental and financial institutions: engineer of computer systems or networks; programmer; administrator of computer systems or networks; research engineer.

**Further study prospects:**

Bachelor of speciality 121 “Software Engineering” may continue study for obtaining the educational and qualification level of master.

**Department graduating a student with degree:** Department of Programming and Mathematics

**Institute/Faculty:** Faculty of Information Technology and Electronics

**Educational program supervisor:** Lyfar Volodymyr Serhiiovych,  
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