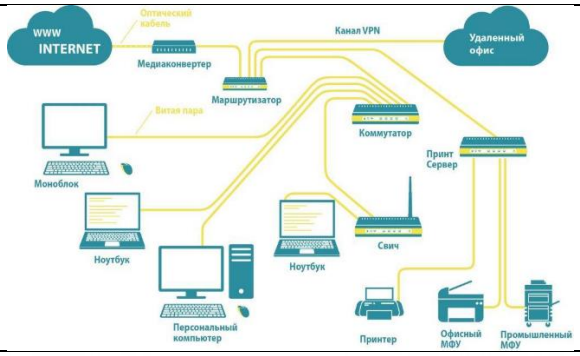
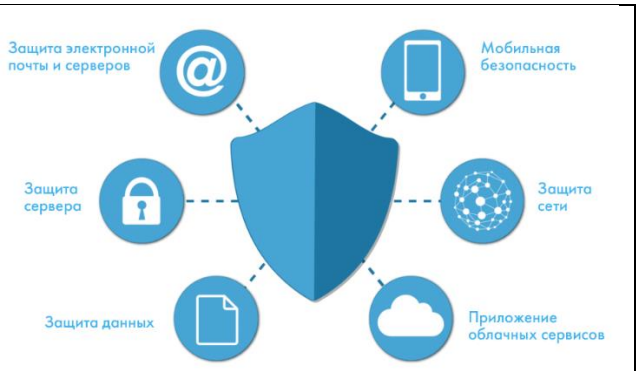
Name of the educational program	Network technologies and communication systems
Code of the educational program	6B06202
Assigned degree	Bachelor in the field of information and communication technologies in the educational program 6B06202 – “Network technologies and communication systems”
Duration of education	4 years
Language of education	Kazakh and russian
Goals and objectives of the educational program	The goal of the EP “Network Technologies and Communication Systems” is to training specialists in the field of development, projection and operation of network technologies, telecommunications, system connection and development of Architecture, Components and operations of servers, routers and switches, as well as familiarization with free local networks (WLAN) and the concept of security. The objectives of the specialty "Network Technologies and Communication Systems" include: - development of network architectures and plans that take into account the needs of an organization or enterprise for data transmission and communication; - installation, configuration and maintenance of network equipment, including routers, switches, routers, firewalls and other devices; - regular maintenance of network infrastructure, performance monitoring and identification of network problems; - development and implementation of measures to ensure network security, including protection against cyber attacks, authentication and access control, etc.
Department	"Communication systems technologies"

National qualifications framework	6
Industry qualifications framework	6

The educational program “Network Technologies and Communication Systems” is an area of professional activity related to the development, management, maintenance and optimization of network infrastructures and communication systems. This educational program is the focus of modern information technology and is key to ensuring connectivity and efficient data transmission in networks.

The main areas of work and tasks of network technology and communication systems specialists include:

Network design: *Development of network architecture, selection of equipment and technologies to ensure reliable and fast data transfer.*	
Equipment installation and configuration: *Installing network equipment (routers, switches, routers) and configuring its parameters for optimal operation.*	
Maintenance and Technical Support: *Regularly maintain the network infrastructure, identify and resolve failures, and provide technical support to users.*	

Network security: *Development and implementation of measures to protect networks from cyber attacks and data leaks.*	
Virtualization and cloud technologies: *Working with virtual networks and cloud services for more flexible and scalable resource management.*	
Data analysis and monitoring: *Collect and analyze data on the status of networks in order to identify problems and optimize operation.*	

Core competencies that are usually developed by students and professionals:

- knowledge of network protocols: Understanding of the operation of basic network protocols, such as TCP/IP, DHCP, DNS, HTTP, FTP, and the ability to configure and debug network connections.
- network architecture: Ability to develop network architectures, including local and wide area networks, virtual networks and cloud infrastructures.
- equipment installation and configuration: Skills in installing, configuring and maintaining network equipment, including routers, switches, routers and firewalls.
- network security: Knowledge of network security methods and technologies, including firewalls, VPNs, authentication and access control.
- network administration: Skills in network administration, monitoring and managing network resources, as well as solving network problems.
- virtualization and cloud technologies: Knowledge of the principles and methods of working with virtual networks and cloud resources.
- data analysis and monitoring: Ability to collect and analyze data on network operation using monitoring and analytics tools.

- network design and optimization: Skills in designing network solutions, optimizing network infrastructure and traffic management.

- standardization and compliance: Knowledge of network standards and regulations, as well as the ability to comply with them in professional activities.

These competencies enable networking and communications professionals to create, maintain and improve network infrastructures, ensuring reliable and efficient functioning of networks in various organizations and business areas.

Networking and communications specialists can work in a variety of industries, including telecommunications, information technology, banking, Internet service companies, and many others. This specialty requires in-depth knowledge of network protocols, hardware and software, as well as skills in analyzing and solving network infrastructure problems.