**The name of the academic discipline:**

**“Network technologies and administration of operating systems”**

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| **Specialty code and name** | 1-40 01 01 Information Technology Software |
| **Year of study** | 4 |
| **Semester of study** | 7 |
| **Number of in-class academic hours:** | 78 |
| **Lectures****Seminar classes** **Practical classes****Laboratory classes** | 46 |
| - |
| - |
| 32 |
| **Form of the current assessment (*credit/ graded credit /exam*)** | credit |
| **Number of credit points** | 3 |
| **Competences** | Mastering the academic discipline "Network technologies and administration of operating systems" should provide the following competencies: application of technologies for administering network operating systems to ensure the required performance. |
| **Summary of the academic discipline:**Dividing networks into subnets. The need to divide networks into subnets. Fixed subnetting. Calculating the number of networks, calculating the number of nodes. Disadvantages of fixed subnetting. Subnetting using variable-length masks. Advantages of using variable-length masks. IPv6 protocol. The need to switch to IPv6. Comparison of IPv6 and IPv4. IPv6 address types: unicast, multicast, anycast addresses. Static packet routing. Routing in data networks. Algorithm for making a decision on forwarding a packet. Gateway. Directly connected routes and remote routes. Optimal path. Metric and administrative Interpretation of entries in the routing table. Static routing. Standard static route, default route, summary static route, default route. Protocols for dynamic assignment of IPv4 and IPv6 addresses. Operation of the DHCPv4 protocol. Configuring the DHCPv4 protocol on routers. The DHCPv6 protocol. Stateless Dynamic Allocation of IPv6 Addresses (SLAAC). Specifying the host portion of an address using the EUI-64 mechanism. Configuring SLAAC and EUI-64 on routers. |