Syllabus of the educational discipline
«COMPUTER NETWORKS»

Cycle of Higher Education	*First cycle of higher education (Bachelor's degree)*
Field of Study	*12 Information Technologies*
Specialty	*123 Computer engineering*
Educational program	*Computer systems and networks*
Discipline status	*Normative*
Teaching language	*English*
Year of studies, semester	*4 year (7 semester, 8 semester)*
Number of credits ECTS	*6 credits*
Distribution by types of trainings and hours of study	*Lectures, Laboratory studies, Independent training*
Form of final assessment	*Exam*
Teacher	*Korol Yu.Yu., associate professor of the department of computer systems and network*
Teacher's contacts	*yuriy.korol@uzhnu.edu.ua*
Course Schedule	*According to the timetable*

The purpose of studying the discipline "Computer Networks" - to acquaint students with the basic principles of construction and tools of functioning of computer networks.

At the end of this course, students should:

know:

- methods and tools for the design of computer networks, the current state and directions of development of network technologies;
- create and research network models;
- evaluate the performance and fault tolerance.

be able to:

- think systematically and use creativity to develop models and build networks using different technologies.
- make decisions anout the appropriateness of a particular technology and equipment in the construction of a network.

Prerequisites for learning

Prerequisites for the study of the discipline " Computer Networks " is the mastery of students of the following academic disciplines: "System Programming", "Computer Electronics", "Theory of Information and Coding".

Content of the educational discipline

Topic 1. Evolution of computer networks
Topic 2. Building local networks according to physical and data link layer standards
Topic 3. General principles of building networks.
Topic 4. Technologies of local networks.
Topic 5. Computer networks protocols.
Topic 6. IP network addressing.
Topic 7. Concept and definition of global networks
Topic 8. MPLS technology
Topic 9. Carrier Class Ethernet
Topic 10. Services in global networks
Topic 11. Network Security

Course page on the Moodle platform (personal training system)	*Syllabus of the educational discipline, hyperlinks to electronic publications of the discipline, recommended literature, students' attendance, lecture materials, presentations, questions for self-control, tests, tasks for checking students' knowledge.* https://moodle.uzhnu.edu.ua

Recommended literature

1. *Behrouz A. Forouzan TCP/IP Protokol Suite - McGrawHill 2003 -941p. (International Edition ISBN-0-07-119962-4)*
2. *Andrew Tanenbaum. Computer Networks (5th Edition). - Pearson; 5th edition (September 27, 2010). - 960p*
3. *William Stallings Data and Computer Communications.- Pearson; 10th edition (September 13, 2013), - 912p*

Assessment system of learning outcomes

The ECTS grade that a student receives after studying a credit module of a discipline is determined according to the student's rating. The student's rating is made up of the points that the student receives during the semester for such types of work:

1. Module control work (MCW) is 2 acad. hours. The maximum number of points for the MCW is 50 points.

2. Performing laboratory work.

During the semester, students perform laboratory works, where the maximum number of points is 40.

Points for individual and independent work of students are awarded for: preparation of essays, modernization of tasks, for a creative approach to problem solving, performance of tasks to improve didactic materials in the discipline: 0-10 points for each module

Each module is graded a maximum of 100 points.

A necessary condition for admission to the test is the absence of debts on laboratory work and enrollment control works.

ECTS and national grading scale

<table>
<tr><th>Mark scale</th><th>ECTS</th><th>Exam</th><th>Test</th></tr>
<tr><td>90 - 100</td><td>A</td><td>Excellent</td><td rowspan="5">Satisfied</td></tr>
<tr><td>82 - 89</td><td>B</td><td rowspan="2">Good</td></tr>
<tr><td>74 - 81</td><td>C</td></tr>
<tr><td>64 - 73</td><td>D</td><td rowspan="2">Satisfactory</td></tr>
<tr><td>60 - 63</td><td>E</td></tr>
<tr><td>35 - 59</td><td>FX</td><td>“Unsatisfactory” with possibility to pass the exam again</td><td>“Not satisfied” with possibility to pass the exam again</td></tr>
<tr><td>1 - 34</td><td>F</td><td>“Unsatisfactory” with obligatory repeated study of the discipline</td><td>“Not satisfied” with obligatory repeated study of the discipline</td></tr>
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