Syllabus of the course

«Discrete Mathematics»

Specialty	*121 Software engineering*
Study Programme	*Software engineering*
Study cycle (Bachelor, Master, PhD)	*the first (Bachelor) level of higher education*
Course status	*mandatory*
Language	*English*
Term	*first year, second semester*
ECTS credits	*5*
Workload	*Lectures – 24 hours.*
	Practical studies – 18 hours.
	Laboratory studies – 18 hours.
	Self-study – 90 hours.
Assessment system	*Grading*
Department	*Department of higher mathematics, economical and mathematical methods* *auditorium 329 of the main building* *phone: (057) 702 04 05 (add. 3-33)* *website: http://www.vm.hneu.edu.ua/*
Teaching staff	*Misiura Ievgeniia Iuriivna, PhD in Technics, Associate professor*
Contacts	*Ie. Iu. Misiura Ievgeniia.Misiura@hneu.net*
Course schedule	*Lectures: according to the schedule* *Practical studies: according to the schedule* *Laboratory studies: according to the schedule*
Consultations	*At the Department of Higher Mathematics, Economic and Mathematical methods, offline, according to the schedule, individual, PNS chat.*

Learning objectives and skills:

forming future specialists' mathematical knowledge for solving theoretical and practical economic problems in any sphere of a professional activity

Structural and logical scheme of the course

Prerequisites	Postrequsites
Higher mathematics	Algorithms and data structures
	Object-oriented programming
	Databases
	Distributed and parallel computing

Course content

Module 1: *Set theory and combinatorial analysis. Graph theory*
Topic 1. Set theory and relations
Topic 2. Combinatorial analysis
Topic 3. Graph Theory
Module 2: *Mathematical logic. Elements of the theory of finite automata*
Topic 4. Algebra of statements. Logical formulas
Topic 5. Boolean functions
Topic 6. Predicates and quantifiers
Topic 7. Elements of the theory of finite automata

Teaching environment (software)

Multimedia projector, S. Kuznets PNS, Corporate Zoom system, MatLab, Octave, Excel

Assessment system

Assessment of students' learning outcomes is carried out by the University according to the cumulative 100-point system.

Current control is carried out during lectures, practical and laboratory classes and aims to assess the level of students' readiness to perform particular tasks, and is assessed by the amount of scored points.

The maximum amount during the semester – 100 points; the minimum amount required is 60 points.

Current control includes the following assessment methods: colloquiums, written tests, homework, laboratory works, an individual creative task.

More detailed information on assessment and grading system is given in the technological card of the course.

Course policies

Teaching of the academic discipline is based on the principles of academic integrity.

Violation of academic integrity includes academic plagiarism, fabrication, falsification, cheating, deception, bribery, and biased assessment.

Educational students may be brought to the following academic responsibility for breach of academic integrity: repeated assessment of the corresponding type of learning activity.

More detailed information about competencies, learning outcomes, teaching methods, assessment forms, self-study is given in the Course program