



**Syllabus of the educational discipline**  
*«Higher Mathematics»*

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| <b>Specialty</b>   | <i>073 Management</i>  |
| <b>Educational program</b>                                   | <i>Logistics</i>   |
| <b>Level of education</b>                                    | <i>first (bachelor)</i>  |
| <b>Discipline status</b>                                     | <i>Compulsory discipline</i>   |
| <b>Teaching language</b>                                     | <i>English</i>   |
| <b>Course / semester</b>                                     | <i>1 st course, 1 st semester</i>  |
| <b>Number of credits ECTS</b>                                | <i>5</i>   |
| <b>Distribution by types of trainings and hours of study</b> | <i>Lectures – 24 hours.<br/>Practical studies (seminars) – 12 hours<br/>Laboratory studies – 12 hours<br/>Independent training – 102 hours</i>   |
| <b>Form of final assessment</b>                              | <i>Exam</i>  |
| <b>Department</b>  | <i>Department of higher mathematics, economical and mathematical methods, Simon Kuznets KNUE, room 329 (main building), +38(057)702-04-05 (or 3-33), E-mail: <a href="mailto:kafmath@hneu.edu.ua">kafmath@hneu.edu.ua</a>, <a href="http://www.vm.hneu.edu.ua/">http://www.vm.hneu.edu.ua/</a></i> |
| <b>Teacher (-s)</b>  | <i>Lebedev Stepan Sergovych, Senior Lecturer</i>   |
| <b>Teacher's contacts</b>                                    | <i><a href="mailto:Stepan.Lebedev@hneu.net">Stepan.Lebedev@hneu.net</a></i>  |
| <b>Days of the classes</b>                                   | <i>According to the schedule</i>   |
| <b>Consultations</b>   | <i>Distance, according to the schedule</i>   |

**The purpose of the discipline**

*is forming future specialists' basic mathematical knowledge for solving theoretical and practical problems in professional activity of a competent specialist in any sphere of his activity, skills in analytical thinking and skills in using mathematical knowledge for formation of real processes and developments, and for solving economic problems.*

**Prerequisites for learning**

*Assimilation of the material of school disciplines "Algebra" and "Geometry"*

**Content of the educational discipline**

**Content module 1. Linear algebra and analytical geometry**

**Theme 1.** *The elements of the theory of matrices and determinants*

**Theme 2.** *The general theory of the system of linear algebraic equations*

**Theme 3.** *The elements of vector algebra. Elements of analytical geometry*

**Content module 2. The elements of mathematical analysis**

**Theme 4.** *The limit of a function and continuity*

**Theme 5.** *Differential calculus of the function of one variable*

**Theme 6.** *Analysis of the function of several variables*

**Theme 7.** *Integral calculus*

**Theme 8.** *Differential equations*

**Theme 9.** *Series*

**Material and technical support (software) of the discipline**

*Software MatLab, Octave*

**Course page on the Moodle platform (personal training system)**

*Syllabus (working program), working plan (technological card), recommended literature, journal of students' attendance, materials of lectures (notes*



and presentations), questions to independent work, guidelines to conducting practical and laboratory studies, tasks for independent work, tests for checking students' knowledge, example of an examination paper and a criteria of an assessment of examination work.  
<https://pns.hneu.edu.ua/course/view.php?id=5180>

#### Assessment system of learning outcomes

Current control is carried out on a cumulative 100-point system (the maximum is 60 points; the minimum that allows a student to take the exam is 35); final control is conducted in the form of an exam according to the schedule of the educational process (maximum is 40 points, minimum is 25 points).

More detailed information on assessment is given in the technological card of the discipline

#### Accumulation of rating points in the discipline

| Types of training         | Max points |
|---------------------------|------------|
| Homework                  | 12         |
| Competence oriented tasks | 12         |
| Written tests             | 12         |
| Independent creative task | 8          |
| Colloquiums               | 16         |
| Exam                      | 40         |
| <b>Max points</b>         | <b>100</b> |

#### Discipline policies

Policy of academic integrity (according to the Law of Ukraine "On Education") - "Teaching discipline is based on the principles of academic integrity - a set of ethical principles and statutory rules that should guide participants in the educational process during training, teaching and conducting scientific (creative) activities to ensure confidence in learning outcomes and / or scientific (creative) achievements. Violations of academic integrity are: academic plagiarism, self-plagiarism, fabrication, falsification, write-off, deception, bribery, biased evaluation. For violation of academic integrity, students may be held subject to the following academic liability: re-assessment (test, exam, test, etc.); re-passing the relevant educational component of the educational program. Write-off during control (modular) works is forbidden (including with use of mobile devices).

<https://www.hneu.edu.ua/akademichna-dobrochesnist/>

More detailed information about competencies, learning outcomes, teaching methods, assessment forms, independent training is given in the Syllabus (working plan) of the educational discipline.