



**FACULTY OF PHARMACY
MEDICAL UNIVERSITY SOFIA**

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Approved from the Faculty council with protocol: 3/04.05.2022 г.

DEAN:

/prof. Al.Zlatkov, DSc/

DEPARTMENT “ORGANIZATION AND ECONOMICS OF PHARMACY”

SYLLABUS

of

HIGH MATH IN PHARMACY

INCLUDED IN “**PHARMACY**” EDUCATION CURRICULUM

DEGREE OF EDUCATION: “**MASTER**”

CREDITS (ECTS): 5

ANNOTATION

The course on "High Math", pharmacy students get acquainted with the basic methods, which prepares them theoretically and practically for successful modelling of chemical processes and analysis of experimental data in pharmacy. The future pharmacist, who has mastered the basics of higher mathematics, will be ready for systematic research, processing and analysis of available mathematical models to improve the drug supply process. The methods of mathematical modelling will prepare the students successfully establish relationships between the chemical structure and pharmacological action of biologically active substances and the biopharmaceutical and pharmacokinetic characterization of different drugs.

Aim of the education on the subject – The aim of the course is for students to achieve theoretical knowledge and practical skills for the successful identification, modelling and solving of the main tasks in High Math.

Structure of the program – The program includes a lecture course and practical classes, in which students are trained in the necessary theoretical knowledge and practical skills to achieve the objectives described above.

Acquired competencies – At the end of the course students will have the necessary theoretical knowledge and practical skills related to:

- Successfully identify, classify and solve the main mathematical tasks.
- Successful modelling of various processes in the field of pharmacy, with the apparatus of mathematical theory.

Type of control and evaluation: Students will be evaluated on the basis of the tests during semester and exam test result.

SYLLABUS

1. Coordinate systems on a straight line, in a plane and space.
2. Equations of the line.
3. Functions.
4. Infinite numerical sequences. Napier number e - definition and applications.
5. Limit of a function and continuity of a function.
- 6.** Differential calculus for the function in one variable. A derivative and differential.
7. Higher order derivatives. Applications of derivative of functions.
8. Integral calculus of the function in one variable. Indefinite integral.
9. Definite integrals. Improper integrals.
10. Applications of the definite integral.
11. Functions of several variables.
12. Partial derivatives and local extremum.
13. Ordinary differential equations. First-order ordinary differential equations.
14. Second-order linear differential equations with constant coefficients.
- 15.** Applications of ODE in Pharmacy.

Date

Program authors:

/Team of Department "Organization and economics of pharmacy/"

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