



**Катедра по технология на лекарствата  
и биофармация**

4002 Пловдив, ул. Братя Бъкстон № 120  
email: pharm.technology@ff.mu-plovdiv.bg

**Department of Pharmaceutical Technology  
and Biopharmacy**

120, Bratya Bakston St., 4002 Plovdiv, Bulgaria  
email: pharm.technology@ff.mu-plovdiv.bg

**SYLLABUS FOR THE SEMESTER EXAM  
in PHARMACEUTICAL TECHNOLOGY PART I  
for students in III course for the academic year 2025/2026**

1. Pharmaceutical technology. Subject and historical development of pharmaceutical technology. Basic concepts and terminology used in the pharmaceutical technology. Classification of the pharmaceutical dosage forms.
2. Biopharmacy. Prerequisites for its foundation. Basic concepts. Pharmaceutical and biological availability. Main biopharmaceutical factors related to the drug substances and the dosage form and their influence on bioavailability. Pharmaceutically, biologically and therapeutically equivalent pharmaceutical products.
3. Stability, respectively instability. Shelf life of the pharmaceutical products. Factors that cause instability. Methods for stability evaluation. Technological approaches for stabilization. Examples.
4. Pharmaceutical packaging. Types of packages. Requirements.
5. Pharmaceutical powders. Classification. Technological scheme for preparation and control.
6. Individual cases in the preparation of powder formulations. Incompatibilities and instability in powders.
7. Liquid dosage forms. Biopharmaceutical characteristics and classification. Gastrointestinal absorption. Factors influencing the absorption.
8. Dissolution. Dissolution rate and degree. Factors influencing the dissolution process.
9. Methods for increasing solubility. Solubilization. Possible mechanisms of solubilization. Technological scheme.
10. Surfactants. General characteristics and classification. Application in the pharmaceutical technology.
11. Liquid dosage forms for oral administration – molecular solutions. Technological scheme and control.
12. Syrups. Technological scheme and control indicators.
13. Solutions of macromolecular substances. Characteristics. Applications in the pharmaceutical technology.
14. Colloidal solutions. Technological scheme for preparation. Control.
15. Phytoproducts. Characteristics. Classification. Standardization of herbal drugs. Pharmacopoeial methods. Grinding and screening of herbal drugs. Phytoproducts obtained from fresh plants.
16. Factors influencing the extraction process. Extraction theory.

17. Extraction methods. Maceration. Characteristics of the method. Percolation. Characteristics of the method. Other extraction methods.
18. Aqueous extracts from herbal drugs. Classification. Preparation. Aromatic waters. Methods for preparation.
19. Ethanol-water extracts. Classification. Preparation and control. Maximum purified phytoproducts.
20. Emulsions. Composition, classification, biopharmaceutical aspects. Physical stability of emulsions. Factors affecting stability. Microbiological stability of emulsions. Preparation of emulsions. Control and storage.
21. Emulsifiers – classification, representatives. Hydrophilic-lipophilic balance. Methods for determination.
22. Suspensions. Classification. Biopharmaceutical aspects. Preparation of suspensions. Control and storage. Suspending excipients. Sedimentation. Kinetics of the sedimentation process – factors.
23. Mixtures. Characteristics. Technological scheme. Taste correction. Control. Incompatibilities in mixtures.
24. Biopharmaceutical aspects of the dosage forms – powders, emulsion solutions, suspensions.
25. Liquid dosage forms for external application. Classification and characteristics.
26. Semi-solid dosage forms for dermal application. Classification. Characteristics. Percutaneous absorption. Factors affecting the percutaneous absorption. Control.
27. Bases for semi-solid formulations. Classification. Excipients for semi-solid bases and ointments. Requirements. Classification.
28. Ointments – homogeneous and heterogeneous disperse systems. Pastes. Preparation. Control.
29. Creams. Preparation. Control.
30. Gels. Characteristics. Gelling agents. Preparation. Control.
31. Suppositories. Characteristics. Classification. Preparation, control, storage.
32. Suppository bases. Classification. Requirements. Representatives.
33. Rectal absorption. Physiological factors. Biopharmaceutical aspects of rectal dosage forms.
34. Vaginal globules – general characteristics and classification. Globule preparation, control and storage. Biopharmaceutical aspects of vaginal dosage forms.
35. Aerosols. Composition. Types of aerosols. Liquefied and compressed gases. Technology. Package.

Accepted by the Department Council with. Prot. № 10/28.10.2025.

Approved by: /S/

Assoc. Prof. Plamen Katsarov, PhD

*Head of Department of Pharmaceutical Technology and Biopharmacy*