

DEPARTMENT OF GALENIC PHARMACY

Subject: PHARMACEUTICAL TECHNOLOGY 1
Type of course: lectures/ laboratory practicals
Hours in week: 4/ 5
Year: 3., Summer semester 2025/2026
Lectures: Monday 9.20-11.00; 11.10-12.50, classroom O419

1. **Technology of dosage forms. Galenic pharmacy. Composition of drug products and importance of dosage form. Classification of drug products and dosage forms according to the Ph. Eur. Latin nomenclature of dosage forms. Drug product as a dispersion system. Routes of drug administration.**

PharmDr. ThLic. Mária Raučinová, PhD.

16.2.2026

2. **Basic operations and general procedures in pharmaceutical technology. Particle-size reduction, particle-size separation. Mixing. Filtration, centrifugation of liquids. Lyophilization.**

Michael Lawson, MSc., PhD.

16.2.2026

3. **Basics of pharmaceutical compounding. Pharmacist in a galenic laboratory.**

PharmDr. Miroslava Potůčková, PhD.

23.2.2026

4. **Powders as a starting material and dosage form. Particle-size reduction, particle-size classification. Powders for cutaneous application, powders for oral and parenteral application.**

PharmDr. Alžbeta Lengyelová

23.2.2026

5. **Pharmaceutical excipients – constitutive excipients, bases of liquid, semi-solid and solid dosage forms.**

PharmDr. Alžbeta Lengyelová

2.3.2026

- 6. Pharmaceutical excipients – excipients stabilizing of drug product composition, excipients modifying sensory perception of dosage forms, technical excipients.**

PharmDr. Alžbeta Lengyelová

2.3.2026

- 7. Pharmaceutical solvents. Solutions. Solubility. Solubilization, solubilizers. Rate of dissolution of solids, relations to bioavailability. Aromatic spirits, syrups.**

Michael Lawson, MSc., PhD.

9.3.2026

- 8. Pharmaceutical excipients – surfactants. Surface activity, chemical structure, classification, examples of surfactants.**

PharmDr. Mária Čuchorová, PhD.

9.3.2026

- 9. Polymers as pharmaceutical excipients. Gels and gel structure.**

PharmDr. Veronika Šimunková, PhD.

16.3.2026

- 10. Drug products obtained by extraction methods. Physical and chemical aspects of extraction of drugs. Extraction methods. Tinctures, production procedures, properties, quality control. Extracts, production procedures, properties, quality control.**

Mgr. Daniel Krchňák, Dis.

16.3.2026

- 11. Dispersion systems liquid in liquid. Stability of emulsions, stabilizers of liquid coarse systems. Emulsions as dosage forms.**

PharmDr. Mária Čuchorová, PhD.

23.3.2026

- 12. Dispersion systems of solids in liquids. Sedimentation. Wetting of solids. Excipients stabilizing dispersions of solids in liquids. Kinetic and aggregate instability. Suspensions as dosage forms.**

PharmDr. Miroslava Špaglová, PhD.

23.3.2026

- 13. Rectal drug products, constitutive excipients, bioavailability. Suppositories. Production methods, quality control.**

Michael Lawson, MSc., PhD.

30.3.2026

- 14. Vaginal preparations, bioavailability. Pessaries, excipients, preparation, dosing, quality tests. Vaginal preparations with controlled release.**
PharmDr. Miroslava Potůčková, PhD. 30.3.2026
- 15. Ophtalmic dosage forms. Eye drops and lotions. Physical and microbiological aspects of eye preparations. Bioavailability, excipients, production, quality control.**
PharmDr. Veronika Šimunková, PhD. 13.4.2026
- 16. Parenteral dosage forms. Routes of parenteral application. Composition, required properties, bioavailability. Sterility, sterilization, microbiological quality, clean room classification.**
Michael Lawson, MSc., PhD. 13.4.2026
- 17. Production of injections and infusions. Water in pharmaceutical technology. Products based on human blood.**
Michael Lawson, MSc., PhD. 20.4.2026
- 18. The use of intravenous infusions: substitution of water, ions, plasma expanders, artificial feeding. Identification and labelling of parenterals. Parenteral depot products, possibility of their formulation.**
Michael Lawson, MSc., PhD. 20.4.2026
- 19. Technological aspects of vaccine preparation.**
Doc. RNDr. Miroslava Šupolíková, PhD. 27.4.2026
- 20. Nasal dosage forms. Ear dosage forms. Bioavailability from nasal and ear preparations.**
PharmDr. Miroslava Špaglová, PhD. 27.4.2026
- 21. Parenterals with drug targeting – liposomes, niosomes, lipid nanoparticles, protein and polymeric micro- and nanoparticles, erythrocyte carrier .**
Michael Lawson, MSc., PhD. 4.5.2026

22. Oral dosage forms solid (pastilles, orodispersible films) and liquid (mouthwashes, gargles, drops). Medicinal chewing gum.

PharmDr. Mária Čuchorová, PhD.

4.5.2026

23. Granules. Formation of granular grains and compacts. Binding forces. Granulation, granulation methods.

Michael Lawson, MSc., PhD.

11.5.2026

24. Solid drugs for oral and peroral use. Tablets.

Michael Lawson, MSc., PhD

11.5.2026

25. Quality control of pharmaceutical dosage forms.

doc. PharmDr. Juraj Piešťanský, PhD.

18.5.2026

26. Quality control of biologics.

doc. PharmDr. Juraj Piešťanský, PhD.

18.5.2026