



**INTEGRATED ACADEMIC
PHARMACY STUDIES**

FOURTH YEAR OF STUDIES

school year 2025/2026.

BIOPHARMACY

Subject:

BIOPHARMACY

The course is evaluated with 5 ECTS. There are 4 hours of active classes per week (2 hours of lectures and 2 hours of work in a small group)

TEACHERS AND ASSOCIATES:

RB	Name and surname	E-mail address	Vocation
1	Jovana Bradic	jovanabradickg@gmail.com	Associate Professor
2.	Marina Tomovic	marinapop@gmail.com	Full Professor
3.	Marijana Andjic	andjicmarijana10@gmail.com	Assistant professor
4.	Marko Simic	simic.marko.kg@gmail.com	Teaching Assistant
5.			

COURSE STRUCTURE:

Module	Name of the module	Weeks	Teacher-leader
1	Drug development. Principles of drug absorption. Bioequivalence. Physico-chemical factors affecting drug release and absorption. Oral, buccal and sublingual administration of drugs. Parenteral, ophthalmic and transdermal drug administration: factors affecting release and absorption. Stability of the preparation.	7	Associate prof Jovana Bradić
2	Nasal, inhalation, rectal and vaginal administration of drugs: factors affecting release and absorption. The role of new therapeutic systems in improving the bioavailability of drugs. Methods for examining the absorption and intestinal permeability of drugs.	8	Associate prof Jovana Bradić

ASSESSMENT:

The student masters the subject in modules. The grade is equivalent to the number of points earned (see tables). Points are earned in the following ways:

TESTS: In this way, a student can earn up to 50 points.

FINAL EXAM: In this way, the student can gain up to 50 points.

In order to pass the exam, the student must achieve more than 50 percent of points on each of the defined elements.

MODULE		MAXIMUM POINTS		
		Teaching colloquium	Final exam	Σ
1	Drug development. Principles of drug absorption. Bioequivalence. Physico-chemical factors affecting drug release and absorption. Oral, buccal and sublingual administration of drugs. Parenteral, ophthalmic and transdermal drug administration: factors affecting release and absorption. Stability of the preparation.	15	70	
2	Nasal, inhalation, rectal and vaginal administration of drugs: factors affecting release and absorption. The role of new therapeutic systems in improving the bioavailability of drugs. Methods for examining the absorption and intestinal permeability of drugs.	15		
Σ		30		100

Assessment method based on points earned :

Grading system		
Grade	No. of points	Description
10	91-100	Excellent
9	81-90	Exceptionally good
8	71-80	Very good
7	61-70	Good
6	51-60	Passing
5	< 51	Failing

LITERATURE:

TITLE OF THE TEXTBOOK	THE AUTHORS	PUBLISHER	THE LIBRARY
Physicochemical Principles of Pharmacy.4th edition.	Florence T, Attwood D	United Kingdom, Pharmaceutical Press, 2006.	Does not have
Pharmaceutical Technology with Biopharmaceutics, Part I	Đurić Z	Shade, Zemun, 2004.	Has
Pharmaceutical medicine	Prostran M, Stanulović M, Marisavljević D, Đurić D	Belgrade, Faculty of Medicine, University of Belgrade, 2009.	Does not have
Reformulation and formulation of medicines. First edition.	Ibrić S, Parojičić J	Belgrade, Faculty of Pharmacy, University of Belgrade, 2012.	Does not have

All lectures are available on the website of the Faculty of Medical Sciences: www.medf.kg.ac.rs

THE PROGRAM:

FIRST MODULE: Drug development. Principles of drug absorption. Bioequivalence. Physico-chemical factors affecting drug release and absorption. Oral, buccal and sublingual administration of drugs. Parenteral, ophthalmic and transdermal drug administration: factors affecting release and absorption. Stability of the preparation.

TEACHING UNIT 1 (FIRST WEEK):

lecture	Practice
Drug development. Principles of drug absorption.	Drug development. Principles of drug absorption.

TEACHING UNIT 2 (SECOND WEEK):

lecture	Practice
Biological availability and bioequivalence.	Biological availability and bioequivalence.

TEACHING UNIT 3 (THIRD WEEK):

lecture	Practice
Physico-chemical factors affecting the release and absorption of drugs. Methods for improving the solubility of poorly soluble drugs	Methods for improving the bioavailability of poorly soluble drugs

UNIT 4 (FOURTH WEEK):

lecture	Practice
Oral route of drug administration. Factors influencing the release and absorption of oral dosage forms.	Oral route of drug administration. Factors influencing the release and absorption of oral dosage forms.

UNIT 5 (FIFTH WEEK):

lecture	Practice
Buccal and sublingual administration of drugs. Factors affecting the release and absorption of dosage forms for buccal and sublingual administration.	Buccal and sublingual administration of drugs. Factors affecting the release and absorption of dosage forms for buccal and sublingual administration.

UNIT 6 (SIXTH WEEK):

lecture	Practice
Parenteral administration of drugs. Factors influencing the release and absorption of medicinal forms for parenteral administration.	Parenteral administration of drugs. Factors influencing the release and absorption of medicinal forms for parenteral administration.

UNIT 7 (SEVENTH WEEK):

lecture	Practice
Application of medicines through the skin. Factors affecting the release and absorption of preparations for application to the skin.	Application of medicines through the skin. Factors affecting the release and absorption of preparations for application to the skin.

UNIT 8 (EIGHTH WEEK):

lecture	Practice
Methods for improving the delivery of drugs through the skin.	Methods for improving the delivery of drugs through the skin.

UNIT 9 (NINTH WEEK):

lecture	Practice
Stability of medicinal forms. Methods for improving stability.	Stability of medicinal forms. Methods for improving stability.

UNIT 10 (TENTH WEEK):

lecture	Practice
Ophthalmological application of drugs. Factors affecting the release and absorption of ophthalmic preparations.	Ophthalmological application of drugs. Factors affecting the release and absorption of ophthalmic preparations.

SECOND MODULE: Nasal, inhalation, rectal and vaginal administration of drugs: factors affecting release and absorption. The role of new therapeutic systems in improving the bioavailability of drugs. Methods for examining the absorption and intestinal permeability of drugs.

UNIT 11 (ELEVENTH WEEK):

lectures	Practice
Nasal administration of drugs. Factors influencing the release and absorption of nasal preparations.	Nasal administration of drugs. Factors influencing the release and absorption of nasal preparations.

UNIT 12 (Twelfth Week):

lecture	Practice
Inhalation administration of drugs. Factors influencing the release and absorption of inhalation preparations.	Inhalation administration of drugs. Factors influencing the release and absorption of inhalation preparations.

UNIT 13 (WEEK THIRTEEN):

lecture	Practice
Rectal and vaginal administration of drugs. Factors influencing the release and absorption of rectal and vaginal preparations.	Rectal and vaginal administration of drugs. Factors influencing the release and absorption of rectal and vaginal preparations.

UNIT 14 (FOURTEENTH WEEK):

lecture	Practice
The role of new therapeutic systems in improving the bioavailability of drugs.	The role of new therapeutic systems in improving the bioavailability of drugs.

UNIT 15 (FIFTEENTH WEEK):

lecture	Practice
Methods for examining the absorption and intestinal permeability of drugs.	Methods for examining the absorption and intestinal permeability of drugs.