

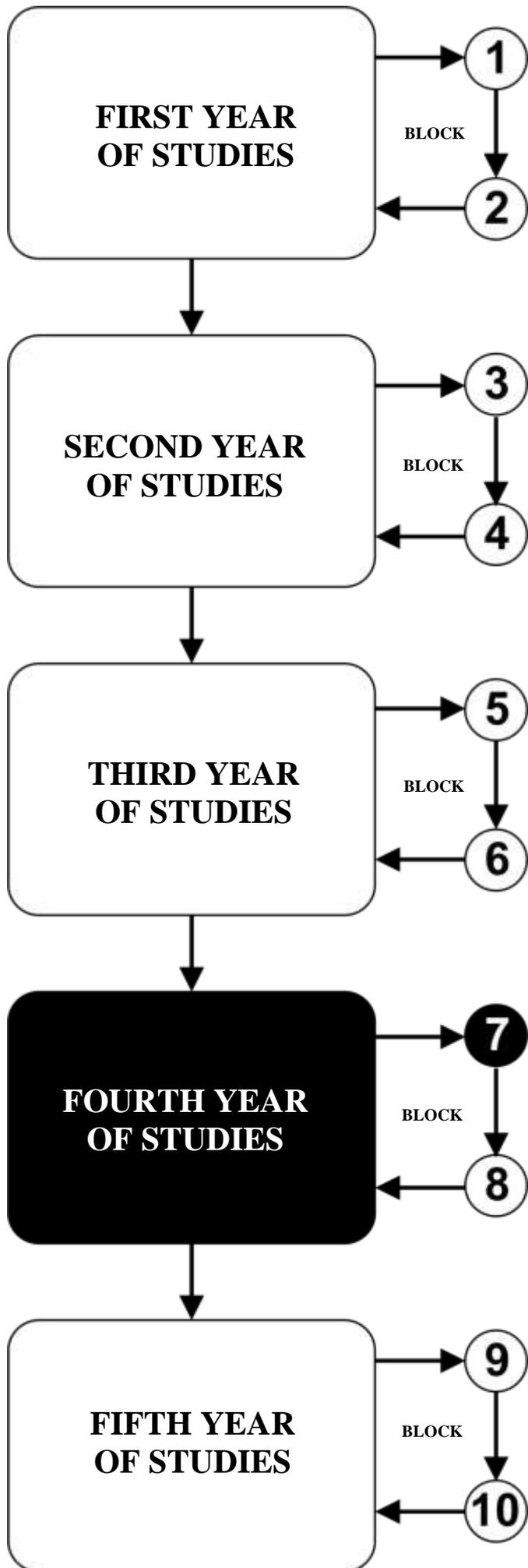


**INTEGRATED ACADEMIC STUDIES OF  
PHARMACY**

**FORTH YEAR OF STUDIES**

2023/2024. school year

**INDUSTRIAL PHARMACY WITH COSMETOLOGY**



Course unit:

## **INDUSTRIAL PHARMACY WITH COSMETOLOGY**

The course is evaluated with 7 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 Bradić	jovanabradickg@gmail.com	Assistant Professor
2.	Marina Tomovic	marinapop@gmail.com	Associate Professor
3.	Anica Petrović	petkovicanica0@gmail.com	Assistant Professor
4.	Marijana Andjic	andjicmarijana10@gmail.com	Teaching Assistant
5.	Marko Simic	simic.marko.kg@gmail.com	Teaching Assistant

## COURSE STRUCTURE:

Module	Module name	Week	Leading teacher
1	Introduction to cosmetology. Legislation of cosmetic products. Patents. Skin, hair and nails. Formulation, choice of active and auxiliary compounds for the production of various cosmetic products. Cosmeceuticals.	7	Ass. prof. Anica Petrović
2	Regulations for development, production and storage of cosmetic and medicinal products. Influence of formulation factors and production processes on the stability of drugs and cosmetic products. Stability assaying methods for medications. Pharmaceutical and technological operations and devices used in the pharmaceutical industry.	8	Ass. prof. Anica Petrović

## GRADING SYSTEM:

Student completes the course via modules. Final grade is equivalent to the number of obtained points (see table). The points are obtained in the following way:

### PRE-EXAM ACTIVITIES:

**ACTIVITY DURING CLASSES:** In this way the student can obtain up to 30 points by taking a written test at the end of each module, and, according to knowledge shown, can get 0-15 points for the first module and 0-15 points for the second module.

**FINAL EXAM:** In this way the student can obtain up to 70 points by taking a test graded according to the table shown.

In order to pass this course, the student must obtain at least 50% of points on each pre-exam activity and also on the final exam. The condition for a student to take the **final exam** is to pass all of the **pre-exam** activities first

MODULE		MAXIMUM POINTS		
		Tests	Final exam	Σ
1	Introduction to cosmetology. Legislation of cosmetic products. Patents. Skin, hair and nails. Formulation, choice of active and auxiliary compounds for the production of various cosmetic products. Cosmeceuticals.	15		
2	Regulations for development, production and storage of cosmetic and medicinal products. Influence of formulation factors and production processes on the stability of drugs and cosmetic products. Stability assaying methods for medications. Pharmaceutical and technological operations and devices used in the pharmaceutical industry.	15		
Σ		30	70	100

### The final grade is formed in the following way:

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

# MODULE TESTS AND FINAL EXAM

## TEST 1.

**TEST**  
**0-15 POINTS**

### TEST GRADING

The test has 15 questions.  
Every question is worth 1 point.

## TEST 2.

**TEST**  
**0-15 POINTS**

### TEST GRADING

The test has 15 questions.  
Every question is worth 1 point.

## FINAL EXAM

**TEST**  
**0 – 70 POINTS**

### TEST GRADING

The test has 70 questions  
40 questions are worth 1 point and 15 questions are worth 2 points

## LITERATURE:

BOOK NAME	AUTHORS	PUBLISHER	LIBRARY
Основи индустријске фармације	Јовановић М., Ђурић З	Нијанса. Београд 2005.	Yes
Приручник из козметологије, друго издање	Васиљевић Д., Савић С., Ђорђевић Љ., Крајишник Д.	Наука, Београд 2009.	Yes
Фармацеутска технологија са биофармацијом, I део,	Ђурић З	Нијанса, Земун, 2004.	Yes
Encyclopedia of Pharmaceutical Technology	Swabrick J, Boylan J.	New York, Basel, 2002	No
Примењена козметологија	Др Данијела Пецарски, Марина Томовић	Факултет медицинских наука, Универзитет у Крагујевцу	Yes

All lectures and practice classes can be found on the Faculty of medical sciences website: [www.medf.kg.ac.rs](http://www.medf.kg.ac.rs)

# THE PROGRAM:

## FIRST MODULE: INTRODUCTION TO COSMETOLOGY FORMULATION, CHOICE OF ACTIVE AND AUXILIARY COMPOUNDS FOR THE PRODUCTION OF VARIOUS COSMETIC PRODUCTS. COSMECEUTICALS.

### LESSON 1 (FIRST WEEK):

Lecture 2 classes	Practice 2 classes
Introduction to cosmetology. Legislation of cosmetic products. Patents.	Introduction to cosmetology. Legislation of cosmetic products. Patents.

### LESSON 2 (SECOND WEEK):

Lecture 2 classes	Practice 2 classes
Skin, hair and nails	Skin, hair and nails

### LESSON 3 (THIRD WEEK):

Lecture 2 classes	Practice 2 classes
Formulation, production and testing of cosmetic products (creams and lotions)	Formulation, production and testing of cosmetic products (creams and lotions)

### LESSON 4 (FOURTH WEEK):

Lecture 2 classes	Practice 2 classes
Formulation, production and testing of cosmetic products (cosmetic products for sun protection)	Formulation, production and testing of cosmetic products (cosmetic products for sun protection)

### LESSON 5 (FIFTH WEEK):

Lecture 2 classes	Practice 2 classes
Formulation, production and testing of cosmetic products (cosmetic products for skin care and protection)	Formulation, production and testing of cosmetic products (cosmetic products for skin care and protection)

### LESSON 6 (SIXTH WEEK):

Lecture 2 classes	Practice 2 classes
Formulation, production and testing of cosmetic products (deodorants and antiperspirants. Oral cavity care products)	Formulation, production and testing of cosmetic products (deodorants and antiperspirants. Oral cavity care products)

### LESSON 7 (SEVENTH WEEK):

Lecture 2 classes	Practice 2 classes
Cosmeceuticals-function, toxicity and use	Cosmeceuticals-function, toxicity and use

**SECOND MODULE: REGULATIONS FOR DEVELOPMENT, PRODUCTION AND STORAGE OF COSMETIC AND MEDICINAL PRODUCTS. INFLUENCE OF FORMULATION FACTORS AND PRODUCTION PROCESSES ON THE STABILITY OF DRUGS AND COSMETIC PRODUCTS. STABILITY ASSAYING METHODS FOR MEDICATIONS. PHARMACEUTICAL AND TECHNOLOGICAL OPERATIONS AND DEVICES USED IN THE PHARMACEUTICAL INDUSTRY.**

LESSON 8 (EIGHTH WEEK):

Lecture 2 classes	Practice 2 classes
Formulation and stabilization of medicinal products	Formulation and stabilization of medicinal products

LESSON 9 (NINTH WEEK):

Lecture 2 classes	Practice 2 classes
Pharmaceutical and technological operations in the pharmaceutical industry (shredding and sifting)	Pharmaceutical and technological operations in the pharmaceutical industry (shredding and sifting)

LESSON 10 (TENTH WEEK):

Lecture 2 classes	Practice 2 classes
Pharmaceutical and technological operations in the pharmaceutical industry (mixing and homogenisation)	Pharmaceutical and technological operations in the pharmaceutical industry (mixing and homogenisation)

LESSON 11 (ELEVENTH WEEK):

Lecture 2 classes	Practice 2 classes
Pharmaceutical and technological operations in the pharmaceutical industry (operations involving heat)	Pharmaceutical and technological operations in the pharmaceutical industry (operations including heat)

LESSON 12 (TWELFTH WEEK):

Lecture 2 classes	Practice 2 classes
Pharmaceutical and technological operations in the pharmaceutical industry (drying)	Pharmaceutical and technological operations in the pharmaceutical industry (drying)

LESSON 13 (THIRTEENTH WEEK):

Lecture 2 classes	Practice 2 classes
Pharmaceutical and technological operations in the pharmaceutical industry (filtration)	Pharmaceutical and technological operations in the pharmaceutical industry (filtration)

LESSON 14 (FOURTEENTH WEEK):

Lecture 2 classes	Practice 2 classes
Pharmaceutical and technological operations in the pharmaceutical industry (making of tablets and capsules)	Pharmaceutical and technological operations in the pharmaceutical industry (making of tablets and capsules)

LESSON 15 (FIFTEENTH WEEK):

Lecture 2 classes	Practice 2 classes
Pharmaceutical and technological operations in the pharmaceutical industry (compression and packaging)	Pharmaceutical and technological operations in the pharmaceutical industry (compression and packaging)



## LESSON SCHEDULE FOR THE COURSE INDUSTRIAL PHARMACY WITH COSMETOLOGY

week	Type	Methodological unit name	Teacher
<b>1</b>	<b>L</b>	Introduction to cosmetology. Legislation of cosmetic products. Patents.	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Introduction to cosmetology. Legislation of cosmetic products. Patents.	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>2</b>	<b>L</b>	Skin, hair and nails	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Skin, hair and nails	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>3</b>	<b>L</b>	Formulation, production and testing of cosmetic products (creams and lotions)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Formulation, production and testing of cosmetic products (creams and lotions)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>4</b>	<b>L</b>	Formulation, production and testing of cosmetic products (cosmetic products for sun protection)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Formulation, production and testing of cosmetic products (cosmetic products for sun protection)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>5</b>	<b>L</b>	Formulation, production and testing of cosmetic products (cosmetic products for skin care and protection)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić

## LESSON SCHEDULE FOR THE COURSE INDUSTRIAL PHARMACY WITH COSMETOLOGY

week	Type	Methodological unit name	Teacher
	<b>P</b>	Formulation, production and testing of cosmetic products (cosmetic products for skin care and protection)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>6</b>	<b>L</b>	Formulation, production and testing of cosmetic products (deodorants and antiperspirants. Oral cavity care products)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Formulation, production and testing of cosmetic products (deodorants and antiperspirants. Oral cavity care products)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>7</b>	<b>L</b>	Cosmeceuticals-function, toxicity and use	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Cosmeceuticals-function, toxicity and use	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>8</b>	<b>L</b>	Formulation and stabilization of medicinal products	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Formulation and stabilization of medicinal products	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>9</b>	<b>L</b>	Pharmaceutical and technological operations in the pharmaceutical industry (shredding and sifting)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Pharmaceutical and technological operations in the pharmaceutical industry (shredding and sifting)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic

## LESSON SCHEDULE FOR THE COURSE INDUSTRIAL PHARMACY WITH COSMETOLOGY

week	Type	Methodological unit name	Teacher
<b>10</b>	<b>L</b>	Pharmaceutical and technological operations in the pharmaceutical industry (mixing and homogenisation)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Pharmaceutical and technological operations in the pharmaceutical industry (mixing and homogenisation)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>11</b>	<b>L</b>	Pharmaceutical and technological operations in the pharmaceutical industry (operations involving heat)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Pharmaceutical and technological operations in the pharmaceutical industry (operations involving heat)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>12</b>	<b>L</b>	Pharmaceutical and technological operations in the pharmaceutical industry (drying)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Pharmaceutical and technological operations in the pharmaceutical industry (drying)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>13</b>	<b>L</b>	Pharmaceutical and technological operations in the pharmaceutical industry (filtration)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Pharmaceutical and technological operations in the pharmaceutical industry (filtration)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>14</b>	<b>L</b>	Pharmaceutical and technological operations in the pharmaceutical industry (making of tablets and capsules)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić

## LESSON SCHEDULE FOR THE COURSE INDUSTRIAL PHARMACY WITH COSMETOLOGY

week	Type	Methodological unit name	Teacher
		Pharmaceutical and technological operations in the pharmaceutical industry (making of tablets and capsules)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic
<b>15</b>	<b>L</b>	Pharmaceutical and technological operations in the pharmaceutical industry (compression and packaging)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić
	<b>P</b>	Pharmaceutical and technological operations in the pharmaceutical industry (compression and packaging)	Ass. prof. Anica Petrović Ass. prof. Marina Tomović Ass. prof. Jovana Bradić Ass. Marijana Anđić Ass. Marko Simic