University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Pharmacotherapy 1

Teachers: Radica M. Stepanović-Petrović, Miroslav M. Savić, Aleksandra N. Novaković, Maja A. Tomić

Course status: mandatory

Semester: 1	**Year of studies:** I
ECTS points: 20	**Course code:** 6ФФПО1ФТ1

Requirements: none

Course aims:

To provide the student with: information necessary for a comprehensive review of cardiovascular, upper and lower respiratory tract and gastrointestinal diseases and appropriate therapeutic options for their treatment; contemporary evidence on the efficacy and safety of medications intended for treating cardiovascular, upper and lower respiratory tract and gastrointestinal disorders; knowledge necessary for critical evaluation of medications, as well as knowledge necessary for the assessment of signs and symptoms reported by patients in pharmacies.

Course outcomes:

Upon completion of the course the student should be able to: understand and differentiate the pathophysiology, clinical presentation, clinical course, prognosis and pharmacological/non-pharmacological therapy of cardiovascular, upper and lower respiratory tract and gastrointestinal diseases; compare the efficacy and safety of different medications intended for a certain disease; present patients and healthcare professionals with evidence-based information on pharmaceutical products, i.e. give advice on the proper use of medications.

Course contents:

Lectures

Arterial hypertension. Coronary artery disease. Heart failure. Arrhythmias. Dyslipidemia. Anemia. Coagulation disorders. Asthma and chronic obstructive pulmonary disease. Pneumonia and tuberculosis. Throat infections. Allergic rhinitis. Peptic ulcer and gastroesophageal reflux disease. Inflammatory bowel diseases. Treatment of nausea, vomiting, diarrhea and constipation.

Practical classes

Case study analysis from pharmaceutical practice (focused on pharmacotherapy).

Recommended literature:

1. Ugrešić N, Stepanović-Petrović R, Savić M (Urednici). Farmakoterapija za farmaceute. 2. Izmenjeno i dopunjeno izdanje, DC Grafički centar Beograd, 2016.

2. Alldredge BK, Corelli RL, Ernst ME et al., editors. Koda-Kimble & Young's Applied Therapeutics: The Clinical Use of Drugs. 10th ed. Philadelphia: Lippincott Williams & Wilkins; 2013.

The total of active learning classes

Lectures: 75	**Practical classes:** 30
Research work: 45	**Other forms of teaching:** 60

Teaching methods:

Lectures, interactive lectures, workshops, research work

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures		Practical	
Practical classes	10	Written	70
Workshops	20	Oral	
Colloquia			

Seminars		
Other activities		

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Pharmacotherapy 2

Teachers: Radica M. Stepanović-Petrović, Miroslav M. Savić, Maja A. Tomić

Course status: mandatory

Semester: 2	**Year of studies:** I
ECTS points: 15	**Course code:** 6ФФПО2ФТ2

Requirements: none

Course aims:

To provide the student with: information necessary for a comprehensive review of central nervous system and renal diseases and appropriate therapeutic options for their treatment; contemporary evidence on the efficacy and safety of medications intended for treating central nervous system and renal disorders; knowledge necessary for critical evaluation of medications, as well as knowledge necessary for the assessment of signs and symptoms reported by patients in pharmacies.

Course outcomes:

Upon completion of the course the student should be able to: understand and differentiate the pathophysiology, clinical presentation, clinical course, prognosis and pharmacological/non-pharmacological therapy of central nervous system and renal diseases; compare the efficacy and safety of different medications intended for a certain disease; present patients and healthcare professionals with evidence-based information on pharmaceutical products, i.e. give advice on the proper use of medications.

Course contents:

Lectures

Anxiety disorders. Sleep disorders. Schizophrenia. Depression. Bipolar disorders. Substance abuse disorders and addiction. Epilepsies. Treatment of pain and headaches. Parkinson's disease and dementias. Multiple sclerosis. Urinary tract infections.

Practical classes

Case study analysis from pharmaceutical practice (focused on pharmacotherapy).

Recommended literature:

1. Ugrešić N, Stepanović-Petrović R, Savić M (Urednici). Farmakoterapija za farmaceute. 2. Izmenjeno i dopunjeno izdanje, DC Grafički centar Beograd, 2016.

2. Alldredge BK, Corelli RL, Ernst ME et al., editors. Koda-Kimble & Young's Applied Therapeutics: The Clinical Use of Drugs. 10th ed. Philadelphia: Lippincott Williams & Wilkins; 2013.

The total of active learning classes

Lectures: 60	**Practical classes:** 30
Research work: 30	**Other forms of teaching:** 45

Teaching methods:

Lectures, interactive lectures, workshops, research work

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures		Practical	
Practical classes	10	Written	70
Workshops	20	Oral	
Colloquia			
Seminars			
Other activities			

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Pharmacotherapy 3

Teachers: Radica M. Stepanović-Petrović, Miroslav M. Savić, Aleksandra N. Novaković, Maja A. Tomić, Marija M. Milić, Ana M. Micov

Course status: mandatory

Semester: 3	**Year of studies:** II
ECTS points: 15	**Course code:** 6ФФПО3ФТ3

Requirements: none

Course aims:

To provide the student with: information necessary for a comprehensive review of endocrine and musculoskeletal disorders, infectious and oncologic diseases, diseases of the skin and eye, and appropriate therapeutic options for their treatment; contemporary evidence on the efficacy and safety of medications intended for treating endocrine and musculoskeletal disorders, infectious and oncologic diseases, as well as diseases of the skin and eye; knowledge necessary for critical evaluation of medications, as well as knowledge necessary for the assessment of signs and symptoms reported by patients in pharmacies.

Course outcomes:

Upon completion of the course the student should be able to: understand and differentiate the pathophysiology, clinical presentation, clinical course, prognosis and pharmacological/non-pharmacological therapy of endocrine and musculoskeletal disorders, infectious and oncologic diseases, diseases of the skin and eye; compare the efficacy and safety of different medications intended for a certain disease; present patients and healthcare professionals with evidence-based information on pharmaceutical products, i.e. give advice on the proper use of medications.

Course contents:

Lectures

Diabetes mellitus. Obesity. Diseases of the thyroid gland. Oral contraception and hormone therapy. Osteoporosis and osteomalacia. Rheumatoid arthritis and osteoarthritis. Hyperuricemia and gout. Cancer chemotherapy. Acne. Psoriasis. Atopic dermatitis. Dermatologic drug reaction. Ophthalmic disorders.

Practical classes

Case study analysis from pharmaceutical practice (focused on pharmacotherapy).

Recommended literature:

1. Ugrešić N, Stepanović-Petrović R, Savić M (Urednici). Farmakoterapija za farmaceute. 2. Izmenjeno i dopunjeno izdanje, DC Grafički centar Beograd, 2016.

2. Alldredge BK, Corelli RL, Ernst ME et al., editors. Koda-Kimble & Young's Applied Therapeutics: The Clinical Use of Drugs. 10th ed. Philadelphia: Lippincott Williams & Wilkins; 2013.

The total of active learning classes

Lectures: 60	**Practical classes:** 30
Research work: 30	**Other forms of teaching:** 45

Teaching methods:

Lectures, interactive lectures, workshops, research work

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures		Practical	
Practical classes	10	Written	70
Workshops	20	Oral	
Colloquia			

Seminars		
Other activities		

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Phytotherapy 1

Teachers: Nada N. Kovačević, Silvana D. Petrović, Zoran A. Maksimović, Tatjana D. Kundaković

Course status: mandatory

Semester: 1	**Year of studies:** I
ECTS points: 5	**Course code:** 6ФФПО1ФИ1

Requirements: None

Course aims:

To provide the information on the place and role of phytotherapy in the system of primary medicinal care, as well as in the self-medication system. Also, to provide the knowledge necessary for appropriate use of herbal medicinal products (herbal drugs and traditional herbal drugs) in treatment of cardiovascular, respiratory and gastrointestinal disorders, as well as those for improving the activity of the immune system and for increasing resistance to diseases.

Course outcomes:

After the course completion, the candidates should become familiar with principles of rational phytotherapy of cardiovascular, respiratory and gastrointestinal disorders, as well as the possibilities of herbal medicinal products use for improving the activity of the immune system and for increasing resistance to diseases. The candidates should be qualified to know active constituents of herbal medicinal products and mechanisms of their activities; know indications, use and posology, contraindications, special warnings and precautions, interactions and undesirable effects of herbal medicinal products. Finally, the candidates should develop a critical attitude towards particular herbal medicinal products and should be able to provide the patients with valid information and advice on possibilities of application.

Course contents:

Lectures

Dyslipidemia. Heart disease. Chronic venous disease. Acute infections of upper respiratory tract. Improving the activity of the immune system and resistance to diseases. Functional disorders of liver and bile ducts. Diarrhea, constipation. Anorexia. Functional indigestion. Irritable bowel syndrome.

Practical classes

Composition analysis of herbal medicinal products available at the market. Study of cases from pharmaceutical practice, from the aspect of phytotherapy in relation to mentioned diseases.

Recommended literature:

1. Schulz V, Haensel R, Blumenthal M, Tyler VE. Rational Phytotherapy: A Reference Guide for Physicians and Pharmacists. Springer-Verlag, 2004.

2. ESCOP Monographs. ESCOP, the European Scientific Cooperative on Phytotherapy, Exeter; Georg Thieme Verlag, 2003.

3. ESCOP Monographs. Supplement 2009. ESCOP, the European Scientific Cooperative on Phytotherapy, Exeter; Georg Thieme Verlag, 2009.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 15	**Other forms of teaching:**

Teaching methods:

Lectures, interactive lectures, workshops.

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures		Practical	
Practical classes	30	Written	70
Workshops		Oral	
Colloquia			

Seminars		
Other activities		

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Phytotherapy 2

Teachers: Nada N. Kovačević, Silvana D. Petrović, Tatjana D. Kundaković

Course status: mandatory

Semester: 2	**Year of studies:** I
ECTS points: 5	**Course code:** 6ФФПО2ФИ2

Requirements: None

Course aims:

To provide the knowledge necessary for appropriate use of herbal medicinal products (herbal drugs and traditional herbal drugs) in treatment of central nervous system and urinary tract disorders.

Course outcomes:

After the course completion, the candidates should become familiar with principles of rational phytotherapy of central nervous system and urinary tract disorders. The candidates should be qualified to know active constituents of herbal medicinal products and mechanisms of their activities; know indications, use and posology, contraindications, special warnings and precautions, interactions and undesirable effects of herbal medicinal products. Finally, the candidates should develop a critical attitude towards particular herbal medicinal products and should be able to provide the patients with valid information and advice on possibilities of application.

Course contents:

Lectures

Anxiety disorders. Sleeping disorders. Depression. Cognitive disorders and dementia. Headache. Urinary tract infections.

Practical classes

Composition analysis of herbal medicinal products available at the market. Study of cases from pharmaceutical practice, from the aspect of phytotherapy in relation to mentioned diseases.

Recommended literature:

1. Schulz V, Haensel R, Blumenthal M, Tyler VE. Rational Phytotherapy: A Reference Guide for Physicians and Pharmacists. Springer-Verlag, 2004.

2. ESCOP Monographs. ESCOP, the European Scientific Cooperative on Phytotherapy, Exeter; Georg Thieme Verlag, 2003.

3. ESCOP Monographs. Supplement 2009. ESCOP, the European Scientific Cooperative on Phytotherapy, Exeter; Georg Thieme Verlag, 2009.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 15	**Other forms of teaching:**

Teaching methods:

Lectures, interactive lectures, workshops.

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures		Practical	
Practical classes	30	Written	70
Workshops		Oral	
Colloquia			
Seminars			
Other activities			

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Phytotherapy 3

Teachers: Nada N. Kovačević, Zoran A. Maksimović, Tatjana D. Kundaković

Course status: mandatory

Semester: 3	**Year of studies:** II
ECTS points: 5	**Course code:** 6ФФПОЗФИЗ

Requirements: None

Course aims:

To provide the knowledge necessary for appropriate use of herbal medicinal products (herbal drugs and traditional herbal drugs) in treatment of the disorders of endocrine and musculoskeletal system, skin and mucous membranes.

Course outcomes:

After the course completion, the candidates should become familiar with principles of rational phytotherapy of the disorders of endocrine and musculoskeletal system, skin and mucous membranes. The candidates should be qualified to know active constituents of herbal medicinal products and mechanisms of their activities; know indications, use and posology, contraindications, special warnings and precautions, interactions and undesirable effects of herbal medicinal products. Finally, the candidates should develop a critical attitude towards particular herbal medicinal products and should be able to provide the patients with valid information and advice on possibilities of application.

Course contents:

Lectures

Obesity. Premenstrual syndrome. Menopause. Rheumatic diseases. Diseases of skin and mucous membranes.

Practical classes

Composition analysis of herbal medicinal products available at the market. Study of cases from pharmaceutical practice, from the aspect of phytotherapy in relation to mentioned diseases.

Recommended literature:

1. Schulz V, Haensel R, Blumenthal M, Tyler VE. Rational Phytotherapy: A Reference Guide for Physicians and Pharmacists. Springer-Verlag, 2004.

2. ESCOP Monographs. ESCOP, the European Scientific Cooperative on Phytotherapy, Exeter; Georg Thieme Verlag, 2003.

3. ESCOP Monographs. Supplement 2009. ESCOP, the European Scientific Cooperative on Phytotherapy, Exeter; Georg Thieme Verlag, 2009.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 15	**Other forms of teaching:**

Teaching methods:

Lectures, interactive lectures, workshops.

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures		Practical	
Practical classes	30	Written	70
Workshops		Oral	
Colloquia			
Seminars			
Other activities			

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Dietetics 1

Teachers: Brižita R. Đorđević, Ivan M. Stanković, Ivana D. Đuričić, Bojana B. Vidović

Course status: mandatory

Semester: I	**Year of studies:** I
ECTS points: 5	**Course code:** 6ФФПО1ДИ1

Requirements: none

Course aims:

Providing information regarding the existing guidances, recommendations and other tools used to design dietary regimens in primary pharmaceutical care, prevention and therapy; information of specific nutritive needs for certain age groups and during the course of therapy or prevention of illnesses; information of dietary products for cardiovascular, respiratory and gastrointestinal disorders.

Course outcomes:

Appropriate interpretation of dietary recommendations; appropriate advice on the healthy nutrition of the general population as well as advices on nutrition to patients suffering from cardiovascular, respiratory and gastrointestinal disorders; integration and evaluation of the relationship between food and nutrition in health and in pathological conditions; counseling patients about dietary foods and supplements.

Course contents:

Lectures

Identification of dietary and nutritional problems, the risk factors and inadequate dietary habits; interpretion and integration of clinical, biochemical and pharmacological data in the nutritional assessment of the patient and their dietetic and nutritional treatment; evaluation of diets for the following deseases: Hypertension. Dyslipidemia. Atherosclerosis. Anemia. Thrombosis. Asthma. Chronic obstructive pulmonary disease. Diarrhea, constipation. Functional dyspepsia. Gastritis and ulcer. Celiac disease.

Practical classes

Analysis of nutritional status, dietary routines, nutrient intake in patients (cardiovascular, respiratory and gastrointestinal disorders); interpretation of information given in food labelling of dietary products.

Recommended literature:

1. Staci Nix. Williams' Basic Nutrition and Diet Therapy, 13th edition. Elsevier, 2009.
2. Banerjee B: Nutritional Management of Digestive Disorders. Boca Raton: CRC Press; 2010.
3. Badham J, Zimmermann MB, Kraemer K: The guidebook nutritional anemia. Basel: Sight and Life; 2007.
4.. Mahan LK, Escott-Stump S: Krause's food & nutrition therapy. 12th ed. St. Louis, Mo: Saunders/Elsevier; 2008.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 15	**Other forms of teaching:**

Teaching methods:

Lectures, problem-and team-based learning, workshop

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures		Practical	
Practical classes	30	Written	70
Workshops		Oral	
Colloquia			
Seminars			

Other activities		

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Dietetics 2

Teachers: Sladjana S. Šobajić, Brižita I.Đorđević, Ivana D. Đuričić

Course status: mandatory

Semester: II	**Year of studies:** I
ECTS points: 5	**Course code:** 6ФФПО2ДИ2

Requirements: none

Course aims:

Providing basic knowledges on special designed food products: dietary supplemements, funcional food and foods for specific medicinal use, with special emphasise in their use in nervous system diseases.

Course outcomes:

Appropriate advice on nutrition to patients suffering from nervous system diseases; integration and evaluation of the relationship between food and nutrition in pathological conditions; counseling patients about dietary foods and supplements.

Course contents:

Lectures

Identification of dietary and nutritional problems, the risk factors and inadequate dietary habits; interpretion and integration of clinical, biochemical and pharmacological data in the nutritional assessment of the patient and their dietetic and nutritional treatment; evaluation of diets for the following deseases: Schizophrenia. Epilepsy. Parkinson's disease. Headache and pain. Cognitive disorders. Dementia. Multiple sclerosis.

Practical classes

Analysis of nutritional status, dietary routines, nutrient intake in patients (nervous system diseasess); interpretation of information given in food labelling of dietary products.

Recommended literature:

1. Staci Nix. Williams' Basic Nutrition and Diet Therapy, 13th edition. Elsevier, 2009.

2. Erdman JW. MacDonald IA, Zeisel SH. Present Knowledge in Nutrition. 10th Ed. Wiley-Blackwell; 2012

3. Barasi M. Human Nutrition: A Health Perspective. 2nd ed. Boca Raton: CRC Press; 2003.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 15	**Other forms of teaching:**

Teaching methods:

Lectures, workshop, case studies.

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures		Practical	
Practical classes	30	Written	70
Workshops		Oral	
Colloquia			
Seminars			
Other activities			

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Dietetics 3

Teachers: Sladjana S. Šobajić, Brižita I.Đorđević, Bojana B. Vidović

Course status: mandatory

Semester: III	**Year of studies:** II
ECTS points: 5	**Course code:** 6ФФПОЗДИ3

Requirements: none

Course aims:

Providing basic knowledges on special designed food products: dietary supplemements, funcional food and foods for specific medicinal use, with special emphasise in their use in certain medical condition (muscle and bone diseases, endocrine and skin disorders, eye diseases).

Course outcomes:

Appropriate advice on nutrition to patients suffering from muscle and bone diseases, endocrine and skin disorders, eye diseases; integration and evaluation of the relationship between food and nutrition in pathological conditions; counseling patients about dietary foods and supplements.

Course contents:

Lectures

Identification of dietary and nutritional problems, the risk factors and inadequate dietary habits; interpretion and integration of clinical, biochemical and pharmacological data in the nutritional assessment of the patient and their dietetic and nutritional treatment; evaluation of diets for the following deseases: Cancer. Diabetes mellitus. Endocrine disfunctions. Obesity. Osteoporosis. Eye diseases. Skin disorders.

Practical classes

Analysis of nutritional status, dietary routines, nutrient intake in patients (muscle and bone diseases, endocrine and skin disorders, eye diseases); interpretation of information given in food labelling of dietary products.

Recommended literature:

1. Staci Nix. Williams' Basic Nutrition and Diet Therapy, 13th edition. Elsevier, 2009.

2. Erdman JW. MacDonald IA, Zeisel SH. Present Knowledge in Nutrition. 10th Ed. Wiley-Blackwell; 2012

3. Barasi M. Human Nutrition: A Health Perspective. 2nd ed. Boca Raton: CRC Press; 2003.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 15	**Other forms of teaching:**

Teaching methods:

Lectures, workshop, case studies.

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures		Practical	
Practical classes	30	Written	70
Workshops		Oral	
Colloquia			
Seminars			
Other activities			

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Interpretation of laboratory tests in therapy control

Teachers: Violeta B. Dopsaj

Course status: elective

Semester: 2	**Year of studies:** I
ECTS points: 5	**Course code:** 6ФФПИЗИЛТ

Requirements:

Course aims:

Improving professional knowledge about the application of laboratory tests in the selection of therapy, controlling and monitoring the effects of therapy, improving the success of therapy and reducing the risk of adverse effects and complications.

Course outcomes:

Application of knowledge from clinical chemistry and the importance of laboratory tests for assessment of physiological processes and functions of the organ in order to apply an adequate dose of the drug and therapeutic monitoring. Interpretation of the results of biochemical and hematological tests in various diseases and knowledge of their clinical significance. Knowledge of the principles of rational laboratory diagnostics and application of diagnostic algorithms in order to set diagnosis of the disease and effective treatment of the patient, with the possibility of individual laboratory therapeutic monitoring.

Course contents:

Lectures

The role of laboratory tests in diagnosis, monitoring and disease prognosis.Laboratory diagnostics of kidney function, kidney, liver, gastrointestinal tract diseases.Determination of blood count and significance of hematological parameters in monitoring of therapy.Laboratory tests in diagnosis of anemia and monitoring of the effects of therapy in the treatment of anemia.Laboratory diagnostics in cardiovascular diseases, hyperlipidemia, diabetes mellitus, hypertension - laboratory control of therapy.Inflammatory markers.Clinical significance of D-dimer, examination of thrombophilia. Laboratory monitoring of the effects of anticoagulant therapy.Laboratory protocol for testing thyroid function, drug effects.Biochemical profile in osteoporosis and therapy.Clinical significance of tumor markers.Diagnostic characteristics of PSA in prostate carcinoma screening.Laboratory profile of the old patients.

Practical classes

Recommended literature:

1. Jadranka Sertic et al.Clinical Chemistry and Molecular Diagnostics in Clinical Practice, Second Edition.Medical Edition, Zagreb, 2015.

2. Mary Lee. Basic skills in interpreting laboratory data, 4th ed. American society of Health-System Pharmacists., 2009.

3.Violeta B Dopsaj, Vesna Spasojevic-Kalimanovska, Dragomir Marisavljevic, et al.Basics of laboratory diagnostics and the treatment of anemia, second ed. Faculty of Pharmacy 2012.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 15	**Other forms of teaching:**

Teaching methods:

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures	20	Practical	
Practical classes		Written	60
Workshops		Oral	
Colloquia	20		
Seminars			

Other activities		

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACY PRACTICE**	

Study programme: Pharmacotherapy in pharmacy practice

Course title: Pharmaceutical management and marketing

Teachers: Marinković Valentina; Tasić Ljiljana

Course status: elective

Semester: II	**Year of studies:** 1
ECTS points: 5	**Course code:** 6ФФПИЗФММ

Requirements: none

Course aims:

Knowledge of the basic principles of pharmaceutical management and marketing, pharmaceutical quality management systems (QMS), basic methods of planning and organization of pharmaceutical marketing activities (promotional and sales) in pharmaceutical and pharmacy practice.

Course outcomes:

Efficient and effective organization of organisatonal, business and marketing activities (market research, development and sustainable operation of the pharmacy in accordance with the market and regulations).

Course contents:

Lectures

General concepts of health system management and drug policies. Pharmaceutical quality systems, strategic management, pharmacy business development and new services; marketing orientation to the customer, methods of marketing planning and innovative marketing tools. Marketing in the pharmaceutical industry.

Practical classes

Practical tasks and examples from pharmaceutical practice based on the application of theoretical teaching units are studied, analyzed, discussed and produced. For example: analysis of the organization and structure of the pharmaceutical sector and the ph

Recommended literature:

1. Kotler Ph. Marketing menadžment. Data Status Beograd, 2006.
2. National drug policy WHO 2002 and Esential drug list 15th 2007.
3. Тасић Љ. Фармацеутски менаџмент и маркетинг. Плацебо Београд 2007.
4. Николин М. и сар. Галерија фармацеутских вештина. Београд Плацебо 2005.
5. Маринковић В и Тасић Љ, Квалитет у фармацији- од теорије до праксе, Фармацеутски факултет, Београд, 2012.
6. Dimitris Dogramatzis. Pharmaceutical Marketing: A Practical Guide. Taylor&Francis 2002.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 0	**Other forms of teaching:** 15

Teaching methods:

Lecturers, case studies, workshops, panel disscussion.

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures	10	Practical	
Practical classes	20	Written	50
Workshops		Oral	
Colloquia	20		
Seminars			
Other activities			

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Dermocosmetic preparations

Teachers: Savić D. Snežana

Course status: elective

Semester: III	**Year of studies:** II
ECTS points: 5	**Course code:** 6ФФПИЗДКП

Requirements: none

Course aims:

To introduce the candidate to legal/regulatory status of dermocosmetic products/cosmeceuticals and their application, active substances present in dermocosmetic preparations and types of these products, as well as their effects and safety profiles on the skin and its appendages.

Course outcomes:

The candidate is familiar with diverse ingredients needed for preparation of dermocosmetic preparations, types and aspects of efficacy and safey of dermocosmetic preparations/cosmeceuticals, in particular products available in a pharmacy and/or used in dermatological practice.

Course contents:

Lectures

Definition of dermocosmetic preparations/cosmeceuticals. Regulatory requirements concerning dermocosmetic preparations. Active substances in dermocosmetic preparations. Principles of dermocosmetic preparations formulation development. Efficacy and safety assessment of dermocosmetic preparations. Dermocosmetic preparation for dry skin care and treatment and relation with the skin barrier. Dermocosmetic preparations for treatment of problematic and acne-prone skin. Dermocosmetic anti-age preparations: formulations for prevention of signs of premature skin aging vs. formulations for treatment of photo-aged skin. Dermocosmetic preparations for skin protection during and skin care after sun exposure (dermocosmetic sunscreens). Dermocosmetic preparations in a pharmacy and dermatological practice.

Practical classes

Analisys of the composition of the dermocosmetic products (list of ingredients). Evaluation of the expected effects, compliance with the given cosmetic claims and possibilities of the safety risks. Formulation of advices for the patients/consumers accordi

Recommended literature:

1. Regulation (EC) No 1223/2009 of the European Parliament and of the Council of 30 November 2009 on cosmetic products. Official Journal of the European Union. L 342/59.
2. Handbook of cosmetic science and technology. Fourth edition. André O Barel, Marc Paye, Howard I. Maibach, eds. CRC Press, Taylor and Francis Group. 2014.
3. Baumann L. Cosmetic dermatology: Principles and Practice (1st edition in Croatian). Zagreb: Interpreta, 2011.
4. Principles and practice of photoprotection. Steven Q. Wang, Henry W. Lim, eds. Adic. Springer International Publishing Switzerland, 2016.
5. Seifen, Öle, Fette, Wachse (journal specialized for cosmetology in EU- selected articles), Verlag fuer Chemische Industrie H. Ziolkowsky GmbH, Germany (2012-2017).

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 15	**Other forms of teaching:**

Teaching methods:

Lectures, interactive sessions, individual research work (IRW), seminars.

Grading system

Exam prerequisites	Points	Final exam	Points
Active participation in lectures	10	Practical	
Practical classes		Written	50

Workshops		Oral	
Colloquia	40		
Seminars			
Other activities			

University of Belgrade Faculty of Pharmacy	Specialized academic study **PHARMACOTHERAPY IN PHARMACEUTICAL PRACTICE**	

Study programme: Pharmacotherapy in Pharmaceutical Practice

Course title: Pharmacovigilance and authorization of medicines

Teachers: Maja A. Tomić

Course status: elective

Semester: 3	**Year of studies:** II
ECTS points: 5	**Course code:** 6ФФПИЗФИР

Requirements: none

Course aims:

To provide the student with information on pharmacovigilance and medicine authorization procedures. To provide students with the ability to critically evaluate the safety of medicines. To familiarize students with databases used for pharmacovigilance activities. To provide students with the ability to comprehend national, European and international legislature on medicine authorization. To familiarize students with authorization procedures, labeling and marketing of medicines.

Course outcomes:

Upon completion of the course the student should be able to: critically evaluate pharmacovigilance data/information, use pharmacovigilance databases, understand and use pharmacovigilance methods in daily practice, understand and use legislature on medicine authorization,understand the purpose of authorization procedures, the contents of an application dossier, renewal and variation procedures of authorized medicines

Course contents:

Lectures

Clinical trials of medicines. Safe use of medicines. Safety assessment of medicines. Pharmacovigilance methods. Pharmacovigilance in clinical trials. Post marketing surveillance of medicines. Spontaneous reporting of adverse effects of medicines. Centers for monitoring adverse effects of medicines. Risk assessment and management. Preparing periodic safety update reports according to regulatory demands and procedures.

Legislation relevant for medicine authorization. Medicine authorization procedures (centralized procedure, mutual recognition procedure, decentralized procedure, national procedure). Over-the-counter medicines. Counterfeit medicines. Rulebook on the labeling of medicines. Rulebook on the marketing of medicines. Content of the application dossier for medicine authorization in CTD format. Summary of product characteristics. Patient information leaflet.

Assessing the risk from an adverse drug effect. Assessment of severity, expectedness and relatedness of adverse effects. Preparing periodic safety update reports. Informing physicians-prescribers, pharmacists, patients and the general public on adverse drug effects. Content of the application dossier – difference between the older NtA (Notice to Applicants) and newer CTD (Common Technical Document) format. Analyzing information in the Summary of product characteristics. Analyzing information in the Patient information leaflet.

Practical classes

Preparing an adverse effect report. Preparing an application for marketing authorization of medicines.

Recommended literature:

1. EMEA Guidelines on Pharmacovigilance for Medicinal Products for Human Use, 2008.

2. Ilić K, Ugrešić N. Farmakovigilanca u kliničkim istraživanjima. Vojnosanitetski pregled. 2007, 64 (4): 265270.

3. Edwards RI, Lindquist M, Meyboom R, Olsson S and others. Drug Safety. Pharmacovigilance in Focus. 2005.

4. Law on medicines and medical devices. The Official Gazette of the Republic of Serbia 30/12, 10.4.2012.

5. Rulebook on the contents of the application, documentation and procedure for marketing authorization approval of medicines. The Official Gazette of the Republic of Serbia 30/12, 10.4.2012.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 15	**Other forms of teaching:**

Teaching methods:

Lectures, interactive lectures, workshops, group seminars.			
Grading system			
Exam prerequisites	**Points**	**Final exam**	**Points**
Active participation in lectures	10	Practical	
Practical classes	30	Written	20
Workshops		Oral	
Colloquia	40		
Seminars			
Other activities			