University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Pharmacoepidemiology and pharmacoeconomics; the critical assessment of the results of published studies; evaluation of quality in pharmaceutical care

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina, Tasić M. Ljiljana

Course status: mandatory

Semester: III	**Year of studies:** II
ECTS points: 6	**Course code:** СФ33О9

Requirements: none

Course aims:

The acquisition of professional knowledge and skills of pharmacoepidemiology and pharmacoeconomics, critical appraisal of published research and evaluation of quality in pharmaceutical care.

Course outcomes:

Application of knowledge and skills in pharmacoepidemiology and pharmacoeconomics, critical appraisal of published research and evaluation of quality in pharmaceutical care.

Course contents:

Lectures

The definition and application of pharmacoepidemiology and pharmacoeconomics. Types of pharmacoeconomic studies, cost-minimization analysis, cost-effectiveness, analysis, cost-benefit analysis and cost-utility analysis. Techniques of decision making. Discounting, one-way and two-way sensitivity analysis. Pharmacoepidemiological studies. Methods for monitoring the consumption of drugs. The design of clinical studies. Observational and interventional studies. Case reports, case-series, cross-sectional, cohort and case control studies. Randomized controlled clinical trials. Determination of the number of participants in clinical studies. The selection of volunteers or patients and the control group. Methods of randomization. Performance, processing and analysis of clinical studies. Absolute and relative risk, confidence interval, number needed to treat and number needed to harm. Assessing the quality of clinical trials, a critical assessment of published studies. Audit and its importance for improving the quality of pharmaceutical services.

Practical classes

A critical evaluation of clinical and pharmacoeconomic studies. Assessment of the applicability of the results of clinical studies in everyday practice. Assessment of the applicability of the results of pharmacoeconomic studies in everyday practice. Conducting audits to assess the quality of pharmaceutical care.

Recommended literature:

1. Waning B, Montagne M. Pharmacoepidemiology Principles and Practice. 1st ed. McGraw-Hill; 2000.

2. Heneghan C, Badenoch D. Evidence-based Medicine Toolkit. 2nd ed. Wiley-Blackwell; 2006.

3. Bootman LJ, Townsend RJ, McGhan WF. Principles of Pharmacoeconomics. 3rd ed. Harvey Whitney Books; 2004.

The total of active learning classes

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

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

Other activities	30	

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Pharmaceutical care in the treatment of diseases of the central nervous system

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina, Dobrić Lj. Silva

Course status: mandatory

Semester: I	**Year of studies:** I
ECTS points: 9	**Course code:** СФ33О2

Requirements: none

Course aims:

The acquisition of professional knowledge and skills to provide pharmaceutical care in the treatment of diseases of the central nervous system.

Course outcomes:

Application of knowledge and skills to provide pharmaceutical care in the treatment of diseases of the central nervous system.

Course contents:

Lectures

The interpretation of laboratory parameters, dosage form, indications and pharmacological effects, contraindications, pharmacokinetic parameters, adherence, interactions and side-effects of drugs in: Parkinson's disease, epilepsy, Alzheimer's disease, multiple sclerosis, affective disorders, schizophrenia, anxiety, sleep disorders, migraine and pain. Dose adjustments of drugs, depending on the individual characteristics of the patient. The role of pharmacists in improving the outcomes of treatment of patients with diseases of the central nervous system. Methods for monitoring and improving the outcomes of patients with diseases of the central nervous system. Non-pharmacological treatment, health promotion and disease prevention in patients with diseases of the central nervous system.

Practical classes

The identification of drug-related problems and interventions in practical examples (case studies) through the develpment of a pharmaceutical care plan for patients with Parkinson's disease, epilepsy, Alzheimer's disease, multiple sclerosis, affective disorders, schizophrenia, anxiety, sleep disorders, migraine and pain. Analysis of the most common drug-related problems of patients with diseases of the central nervous system. The most common clinically significant interactions and adverse reactions to medications that are applied in the therapy of diseases of the central nervous system. Counseling of patients suffering from diseases of the central nervous system, tailored to individual needs.

Recommended literature:

1. Walker R, Whittlesea C. Clinical Pharmacy and Therapeutics. 5th ed. Churchill Livingstone; 2012.

2. Greene R, Harris N. Pathology and Therapeutics for Pharmacists: a Basis for Clinical Pharmacy Practice. 3rd ed. London: Pharmaceutical Press; 2008.

3. Dodds LJ, Drugs in Use. Clinical Case Studies for Pharmacists. 4th ed. London: Pharmaceutical Press; 2010.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 45	**Other forms of teaching:** 15

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

Other activities	30	

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Pharmaceutical care in the treatment of diseases of the gastrointestinal and musculoskeletal system

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina

Course status: mandatory

Semester: II	**Year of studies:** I
ECTS points: 6	**Course code:** СФ33О6

Requirements: none

Course aims:

The acquisition of professional knowledge and skills to provide pharmaceutical care in the treatment of diseases of the gastrointestinal and musculoskeletal system.

Course outcomes:

Application of knowledge and skills to provide pharmaceutical care in the treatment of diseases of the gastrointestinal and musculoskeletal system.

Course contents:

Lectures

The interpretation of laboratory parameters, dosage form, indications and pharmacological effects, contraindications, pharmacokinetic parameters, adherence, interactions and side-effects of drugs in: diarrhea, constipation, gastroesophageal reflux, peptic ulcer disease, inflammatory bowel disease, irritable bowel syndrome, rheumatoid arthritis, osteoarthritis, gout, and osteoporosis. Dose adjustments of drugs, depending on the individual characteristics of the patient. The role of pharmacists in improving the outcomes of patients with diseases of the gastrointestinal and musculoskeletal system. Methods for monitoring and improving outcomes of patients with diseases of the gastrointestinal and musculoskeletal system. Non-pharmacological tretment, health promotion and disease prevention in patients with diseases of the gastrointestinal and musculoskeletal system.

Practical classes

The identification of drug-related problems and interventions in practical examples (case studies) through the develpment of a pharmaceutical care plan for patients with: diarrhea, constipation, gastroesophageal reflux disease, peptic ulcer disease, inflammatory bowel disease, irritable bowel syndrome, rheumatoid arthritis, osteoarthritis, gout and osteoporosis. The most frequent drug-related problems of patients with diseases of the gastrointestinal and musculoskeletal system. The most common clinically significant interactions and adverse reactions to drugs used in the treatment of diseases of the gastrointestinal and musculoskeletal system. Counseling of patients suffering from diseases of the gastrointestinal and musculoskeletal system tailored to individual needs.

Recommended literature:

1. Walker R, Whittlesea C. Clinical Pharmacy and Therapeutics. 5th ed. Churchill Livingstone; 2012.

2. Greene R, Harris N. Pathology and Therapeutics for Pharmacists: a Basis for Clinical Pharmacy Practice. 3rd ed. London: Pharmaceutical Press; 2008.

3. Dodds LJ. Drugs in Use: Clinical Case Studies for Pharmacists. 4th ed. London: Pharmaceutical Press; 2010.

The total of active learning classes

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

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

Seminars		
Other activities	30	

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Pharmaceutical care in the treatment of endocrine diseases

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina

Course status: mandatory

Semester: II	**Year of studies:** I
ECTS points: 6	**Course code:** СФ33О5

Requirements: none

Course aims:

The acquisition of professional knowledge and skills to provide pharmaceutical care in the treatment of endocrine diseases.

Course outcomes:

Application of knowledge and skills to provide pharmaceutical care in the treatment of endocrine diseases.

Course contents:

Lectures

The interpretation of laboratory parameters, dosage form, indications and pharmacological effects, contraindications, pharmacokinetic parameters, adherence, interactions and side-effects of drugs in: metabolic syndrome, diabetes, thyroid disease, contraception and hormone replacement therapy. Dose adjustments of drugs, depending on the individual characteristics of the patient. The role of pharmacists in improving the outcome of treatment of patients with endocrine disease. Methods for monitoring and improving the outcome of patients with endocrine diseases. Non-pharmacological treatment, health promotion and disease prevention in patients with endocrine diseases.

Practical classes

The identification of drug-related problems and interventions in practical examples (case studies) through the develpment of a pharmaceutical care plan for patients with: metabolic syndrome, diabetes, thyroid disease. The importance and benefit/risk of the use of contraceptives and hormone replacement therapy. The most frequent drug-related problems of patients with diseases of the endocrine system. The most common clinically significant interactions and adverse reactions to drugs used in the treatment of endocrine diseases. Advising patients with endocrine diseases, tailored to individual needs.

Recommended literature:

1. Walker R, Whittlesea C. Clinical Pharmacy and Therapeutics. 5th ed. Churchill Livingstone; 2012.

2. Greene R, Harris N. Pathology and Therapeutics for Pharmacists: a Basis for Clinical Pharmacy Practice. 3rd ed. London: Pharmaceutical Press; 2008.

3. Dodds LJ. Drugs in Use: Clinical Case Studies for Pharmacists. 4th ed. London: Pharmaceutical Press; 2010.

The total of active learning classes

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

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Pharmaceutical care in the treatment of cardiovascular diseases

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina

Course status: mandatory

Semester: I	**Year of studies:** I
ECTS points: 9	**Course code:** СФ33О3

Requirements: none

Course aims:

The acquisition of professional knowledge and skills to provide pharmaceutical care in the treatment of cardiovascular diseases.

Course outcomes:

Application of knowledge and skills to provide pharmaceutical care in the treatment of cardiovascular diseases.

Course contents:

Lectures

The interpretation of laboratory parameters, dosage form, indications and pharmacological effects, contraindications, pharmacokinetic parameters, adherence, interactions and side-effects of drugs in: hypertension, congestive heart failure, ischemic heart disease, hyperlipidemia, atrial fibrillation, coagulation disorders and anemia. Dose adjustments of drugs, depending on the individual characteristics of the patient. The role of pharmacists in improving the outcome of treatment of patients with diseases of the cardiovascular system. Methods for monitoring and improving the outcomes of patients with diseases of the cardiovascular system. Non-pharmacological treatment, health promotion and disease prevention in patients with cardiovascular disease.

Practical classes

The identification of drug-related problems and interventions in practical examples (case studies) through the develpment of a pharmaceutical care plan for patients with: hypertension, congestive heart failure, ischemic heart disease, hyperlipidemia, atrial fibrillation, anemia and coagulation disorders. The most frequent drug-related problems in patients with cardiovascular diseases. The most common clinically significant interactions and adverse reactions to medications in the treatment of cardiovascular diseases. Counseling of patients suffering from cardiovascular disease, tailored to individual needs.

Recommended literature:

1. Walker R, Whittlesea C. Clinical Pharmacy and Therapeutics. 5th ed. Churchill Livingstone; 2012.

2. Greene R, Harris N. Pathology and Therapeutics for Pharmacists: a Basis for Clinical Pharmacy Practice, 3rd ed. London: Pharmaceutical Press; 2008.

3. Dodds LJ. Drugs in Use: Clinical Case Studies for Pharmacists. 4th ed. London: Pharmaceutical Press; 2010.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 45	**Other forms of teaching:** 15

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Pharmaceutical care in the treatment of respiratory, infectious and skin diseases

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina, Prostran Š. Milica

Course status: mandatory

Semester: I	**Year of studies:** I
ECTS points: 9	**Course code:** СФ33О4

Requirements: none

Course aims:

The acquisition of professional knowledge and skills to provide pharmaceutical care in the treatment of respiratory, infectious and skin diseases.

Course outcomes:

Application of knowledge and skills to provide pharmaceutical care in the treatment of respiratory, infectious and skin diseases.

Course contents:

Lectures

The interpretation of laboratory parameters, dosage form, indications and pharmacological effects, contraindications, pharmacokinetic parameters, adherence, interactions and side-effects of medications in the treatment of: asthma, chronic obstructive pulmonary disease, dermatitis, herpes, psoriasis, acne and alopecia. Antimicrobial therapy. Dose adjustments of drugs, depending on the individual characteristics of the patient. The role of pharmacists in improving the outcome of treatment of patients with respiratory, infectious and skin diseases. Methods for monitoring and improving the outcomes of patients with respiratory, infectious and skin diseases. Non-pharmacological treatment, health promotion and disease prevention in patients with respiratory, infectious and skin diseases.

Practical classes

The identification of drug-related problems and interventions in practical examples (case studies) through the develpment of a pharmaceutical care plan for patients with: bronchial asthma, chronic obstructive pulmonary disease, dermatitis, herpes, psoriasis, acne, alopecia and infections. The most frequent drug-related problems in patients with respiratory diseases, infectious and skin diseases. The most common clinically significant interactions and adverse reactions to drugs used in the treatment of respiratory, infectious and skin diseases. Counseling of patients suffering from a respiratory, skin disease and infectious tailored, to individual needs.

Recommended literature:

1. Walker R, Whittlesea C. Clinical Pharmacy and Therapeutics. 5th ed. Churchill Livingstone; 2012.

2. Greene R, Harris N. Pathology and Therapeutics for Pharmacists: a Basis for Clinical Pharmacy Practice. 3rd ed. London: Pharmaceutical Press; 2008.

3. Dodds LJ. Drugs in Use: Clinical Case Studies for Pharmacists. 4th ed. London: Pharmaceutical Press; 2010.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 45	**Other forms of teaching:** 15

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

Other activities	30	

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Development of a pharmaceutical care plan, interpretation of laboratory parameters and medcine information sources

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina, Jelić Ivanović D. Zorana

Course status: mandatory

Semester: I	**Year of studies:** I
ECTS points: 3	**Course code:** СФ33О1

Requirements: none

Course aims:

The acquisition of professional knowledge and skills for the development of pharmaceutical care plans, interpreting laboratory parameters of the patient and the use of sources of information about medicines.

Course outcomes:

Application of knowledge and skills for the development of pharmaceutical care plans, interpreting laboratory parameters of the patient and the use of sources of information about medicines.

Course contents:

Lectures

The concept of pharmaceutical care, collecting data from the patient and the identification of drug-related problems, development of pharmaceutical care plan that includes treatment goals, identified problems, interventions, a plan for monitoring outcomes and patient counseling. The most common drug-related problems, treatment errors. Interactions and adverse reactions as potential and actual drug-related problems. Interpretation of laboratory parameters in order to identify problems and monitor treatment outcome. The role of laboratory parameters to assess interactions and adverse reactions. The importance of medicines information sources for solving patient's drug-related problems. Primary, secondary and tertiary sources of information. Reliability, relevance and validity of the sources of information about medicines. The importance of guidelines in clinical practice.

Practical classes

Identifying and solving drug-related problems in practical examples (case studies) through the development of pharmaceutical care plans. Selection of adequate medicines information sources in order to adress the identified drug-related problems. Search of reference journals. Implementation of clinical practice guidelines and related policies in the development of pharmaceutical care plans. Analysis of potential drug-related problems in practical examples.

Recommended literature:

1. Sexton J, Nickless G, Green C. Pharmaceutical Care Made Easy: Essentials of Medicines Management in the Individual Patient. 1st ed. London: Pharmaceutical Press; 2006.

2. Jones RM, Rospond RM. Patient Assessment in Pharmacy Practice.2nd ed. Philadelphia: Lippincott Williams & Wilkins; 2008.

3. Tietze KJ. Clinical Skills for Pharmacists A Patient – Focused Approach. 3rd ed. Elsevier Mosby; 2012.

4. Rovers JP, Currie JD. A Practical Guide to Pharmaceutical Care. 3rd ed. APhA; 2007.

5. Malone PM, Kier K, Stanovich J. Drug Information: A Guide for Pharmacists. 3rd ed, McGraw-Hill Medical; 2006.

The total of active learning classes

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

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

Colloquia		Oral	
Seminars			
Other activities			

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Presentation of case studies

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina

Course status: mandatory

Semester: III	**Year of studies:** II
ECTS points: 6	**Course code:** СФ33О10

Requirements: none

Course aims:

The acquisition of professional knowledge and skills for written and oral presentation of a pharmaceutical care plan, examples of case studies.

Course outcomes:

Application of knowledge and skills in writing and oral presentation of pharmaceutical care plans, examples of case studies.

Course contents:

Lectures

Pharmaceutical care plans in patients with comorbidities. Data collection, identification of drug-related problems, interventions and monitoring of outcomes in multimorbid patients. Priorities in addressing drug-related issues, analysis of pharmacotherapy, laboratory parameters, interactions, adverse reactions and the degree of adherence in multimorbid patients. Analysis of the need to adjust the dosing regimen in multimorbid patients. Critical evaluation of treatment guidelines and choice of therapy in patients with comorbidities. Patient counseling tailored to individual needs. Non-pharmacological treatment, health promotion and the prevention of new diseases in patients with comorbidities. Improving pharmaceutical care services for patients with comorbidities. The importance of the medical record of the patient and continuous monitoring of the treatment outcome. Oral presentation of case studies.

Practical classes

The identification of drug-related problems and interventions in the treatment of multimorbid patients, examples from practice (case studies). Development of a pharmaceutical care plan and monitoring of outcomes of therapy in patients with comorbidities. Patient counseling tailored to individual needs. A critical evaluation of the presented case studies.

Recommended literature:

1. Walker R, Whittlesea C. Clinical Pharmacy and Therapeutics. 5th ed. Churchill Livingstone; 2012.

2. Sexton J, Nickless G, Green C. Pharmaceutical Care Made Easy: Essentials of Medicines Management in the Individual Patient. 1st ed. London: Pharmaceutical Press; 2006.

3. Sodha M, Dhillon S. Non-medical Prescribing. 1st ed. London: Pharmaceutical Press; 2009.

4. Rickles NM, Wertheimer AI, Smith MC. Social and Behavioral Aspects of Pharmaceutical Care. 2nd ed. Jones and Bartlett; 2010.

5. Goode JVR, Roman LM, Weitzel KW. Community Pharmacy Practice Case Studies. American Pharmacists Association; 2009.

The total of active learning classes

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

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

Other activities	30	

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Pharmaceutical care in pediatric patients, pregnant women, nursing mothers, geriatric patients and patients with impaired renal and/or liver function

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina

Course status: mandatory

Semester: II	**Year of studies:** I
ECTS points: 9	**Course code:** СФ33О7

Requirements: none

Course aims:

The acquisition of professional knowledge and skills in providing pharmaceutical care for the following patient populations: pediatric patients, pregnant women, nursing mothers, geriatric patients and patients with impaired renal and/or liver function.

Course outcomes:

The application of professional knowledge and skills in providing pharmaceutical care for the following patient populations: pediatric patients, pregnant women, nursing mothers, geriatric patients and patients with impaired renal and/or liver function.

Course contents:

Lectures

Specific aspects of pharmacotherapy and pharmacokinetics in pediatric patients: premature infants, neonates, infants, children aged 2-12 years and adolescents. Specific aspects of pharmacotherapy and pharmacokinetics in pregnant women, nursing mothers, the elderly and patients with impaired renal and/or liver function. Pharmacokinetic parameters that determine the dosage regimen. Factors that influence the pharmacokinetics of the medicine and the dosage regimen. Determination and ways of adjusting dosage regimen. Monitoring of a medicament for the treatment and the dosage adjustment. The role of pharmacists in improving the outcomes of pediatric patients, pregnant women, nursing mothers, the elderly and patients with impaired renal and/or liver function. The most common drug-related problems, adverse reactions and interactions of drugs used in the treatment of pediatric patients, pregnant women, nursing mothers, the elderly and patients with impaired liver and/or renal function.

Practical classes

The identification of drug-related problems and interventions in practical examples (case studies) through the develpment of a pharmaceutical care plan for premature infants, neonates, infants, children aged 2-12 years, adolescents, pregnant women, nursing mothers, the elderly and patients with impaired renal and/or liver function. Patient counseling tailored to individual needs.

Recommended literature:

1. DiPiro JT. Concepts in Clinical Pharmacokinetics. 5th ed. Society of Health-System Pharmacists; 2010.

2. Burton ME, Shaw LM, Schentag JJ, Evans WE. Applied Pharmacokinetics and Pharmacodynamics: Principles of Therapeutic Drug Monitoring. 4th ed. Lippincott Williams & Wilkins; 2005.

3. Dodds LJ. Drugs in Use: Clinical Case Studies for Pharmacists. 4th ed. London: Pharmaceutical Press; 2010.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 45	**Other forms of teaching:** 15

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

Seminars		
Other activities	30	

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Implementation of pharmaceutical care in primary care. Self-medication, phytotherapy, dietetics; Public health

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina, Kovačević N. Nada, Tasić M. Ljiljana

Course status: elective

Semester: III	**Year of studies:** II
ECTS points: 18	**Course code:** СФ33И1

Requirements: none

Course aims:

The acquisition of professional knowledge and skills to implement the concept of pharmaceutical care in primary care.

Course outcomes:

Application of acquired knowledge and skills to implement pharmaceutical care in primary care.

Course contents:

Lectures

The role of the pharmacist in the health care system. Specific aspects of the pharmaceutical industry in primary care. Public health in pharmacy practice. The organization of pharmacy practice. Phytotherapy, dietetics and self-medication. Categorization of phytotherapy and regulatory aspects of traditional herbal medicines, herbal medicines and dietary supplements. Efficacy and safety of traditional herbal medicines, herbal medicines and dietary supplements. Functional food. Nutrition adapted to the health condition of the patient. The importance of nutrition for health promotion, disease prevention and alleviation of symptoms of illness. Efficacy and safety of medicines obtained without a prescription. Assessment of signs and symptoms that can be treated in primary care. Assessment of patient referral to a doctor. The role of pharmacists in counseling patients about nutrition, use of herbal medicines, dietary supplements and over-the-counter (OTC) medicines.

Practical classes

Analysis of case studies. Improving pharmaceutical activity in primary care. Counseling patients about the use of phytotherapy and OTC medicines. Counseling about adequate nutrition, depending on the patient's health status.

Recommended literature:

1. Rovers JP, Currie JD. A Practical Guide to Pharmaceutical Care. 3rd ed. APhA; 2007.

2. Tasić L. Farmaceutski menadžment i marketing. 2. izdanje. Placebo; 2007.

3. Goode JVR, Roman LM, Weitzel KW. Community Pharmacy Practice Case Studies. American Pharmacists Association; 2009.

4. Rickles NM, Wertheimer AI, Smith MC. Social and Behavioral Aspects of Pharmaceutical Care. 2nd ed. Jones and Bartlett; 2010.

The total of active learning classes

Lectures: 45	**Practical classes:** 45
Research work: 75	**Other forms of teaching:** 15

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Implementation of pharmaceutical care in secondary health care. Pharmaceutical care in cancer therapy, supportive and palliative therapy; Drug Lists

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina, Tasić M. Ljiljana

Course status: elective

Semester: III	**Year of studies:** II
ECTS points: 18	**Course code:** СФ33И2

Requirements: none

Course aims:

The acquisition of professional knowledge and skills to implement the concept of pharmaceutical care in secondary health care.

Course outcomes:

Application of acquired knowledge and skills to implement pharmaceutical care in secondary health care.

Course contents:

Lectures

The role of the pharmacist in the health care system. Organization of the pharmaceutical industry in the secondary and tertiary health care. Role of clinical and hospital pharmacists in promoting rational pharmacotherapy of patients and reducing the costs of the health care system. Therapeutic protocols, dosage, pharmacokinetic parameters interactions, adverse reactions and the degree of adherence to the treatment of oncological diseases. Supportive and palliative therapy. Selection of medicines for the treatment of nausea, vomiting and pain in cancer patients. The role of the family and members of the health care team in the health care of patients with cancer. The role of pharmacists in improving the outcomes cancer patients. Drug Lists. Vital, essential and non-essential drugs. Pharmacoeconomic analysis of drug use in secondary and tertiary practice. Quantification of drug needs, the method of consumption, morbidity method.

Practical classes

Analysis of the consumption of drugs in the practice, examples. Improving pharmaceutical care services in secondary health care. Identification of drug-related problems, interventions and monitoring of outcomes of cancer patients through the development of pharmaceutcal care plans. Counseling of cancer patients tailored to individual needs.

Recommended literature:

1. Rovers JP, Currie JD. A Practical Guide to Pharmaceutical Care. 3rd ed. APhA; 2007.
2. Tasić L. Farmaceutski menadžment i marketing. 2. izdanje. Placebo; 2007.
3. Sodha M, Dhillon S. Non-medical Prescribing. London: Pharmaceutical Press; 2009.
4. Dodds LJ, Drugs in Use. Clinical Case Studies for Pharmacists. 4th ed. London: Pharmaceutical Press; 2010.
5. Tietze KJ. Clinical Skills for Pharmacists A Patient – Focused Approach. 3rd ed. Elsevier Mosby; 2012.

The total of active learning classes

Lectures: 45	**Practical classes:** 45
Research work: 75	**Other forms of teaching:** 15

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

University of Belgrade Faculty of Pharmacy	Specialized Academic Studies **PHARMACEUTICAL CARE**	

Study programme: Pharmaceutical Care

Course title: Communication skills, adherence, interactions and adverse drug reactions; research in the field of pharmaceutical care

Teachers: Miljković R. Branislava, Vezmar Kovačević D. Sandra, Vučićević M. Katarina

Course status: mandatory

Semester: II	**Year of studies:** I
ECTS points: 9	**Course code:** СФ33О8

Requirements: none

Course aims:

The acquisition of professional knowledge and skills in communication, adherence, interactions, adverse effects of drugs and pharmaceutical care research.

Course outcomes:

Application of knowledge and skills in communication, adherence, interactions, adverse effects of drugs and pharmaceutical care research.

Course contents:

Lectures

The importance of counseling patients, communication skills with patients and members of the health care team. The importance of verbal and non-verbal communication. Barriers in communication. Specific aspects of communication with agitated patients, with patients suffering from cancer in the terminal stage, children and patients with disabilities. The consequences of the absence or low level of adherence to the health of the patient. Adherence model based on perception and practicality. Development of adherence (concordance). Ways to assess adherence. Mechanisms of pharmacodynamic and pharmacokinetic interactions. Drug interactions and results of laboratory tests. Research and evaluation of the clinical significance of drug interactions. Identification and monitoring of adverse effects of medicines (pharmacovigilance). The role of pharmacists in improving the degree of adherence and prevention of adverse outcomes of interactions and adverse reactions of drugs. Research in pharmaceutical care. Presentation of the obtained results: oral, poster presentation or written abstract.

Practical classes

The identification of drug-related problems and interventions in practical examples (case studies) through the develpment of a pharmaceutical care plan for non-adherent patients. The role of pharmacists in improving the degree of adherence through patient counseling tailored to individual needs. Clinically significant interactions and adverse reactions in multimorbid patients.

Recommended literature:

1. Tatro D. Drug Interaction Facts 2013: The Authority on Drug Interactions, Facts & Comparisons; 2012.

2. PDR Guide to Drug Interactions, Side Effects, and Indications, 2008, 62nd ed. Thomson Healthcare; 2007.

3. Beardsley RS, Kimberlin CL, Tindall WN. Communication Skills in Pharmacy Practice: A Practical Guide for Students and Practitioners. 5th ed. Lippincott Williams & Wilkins; 2008.

The total of active learning classes

Lectures: 15	**Practical classes:** 15
Research work: 45	**Other forms of teaching:** 15

Teaching methods:

Lectures, problem- and team-based learning, homework, seminar paper

Grading system:

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

Other activities	30	