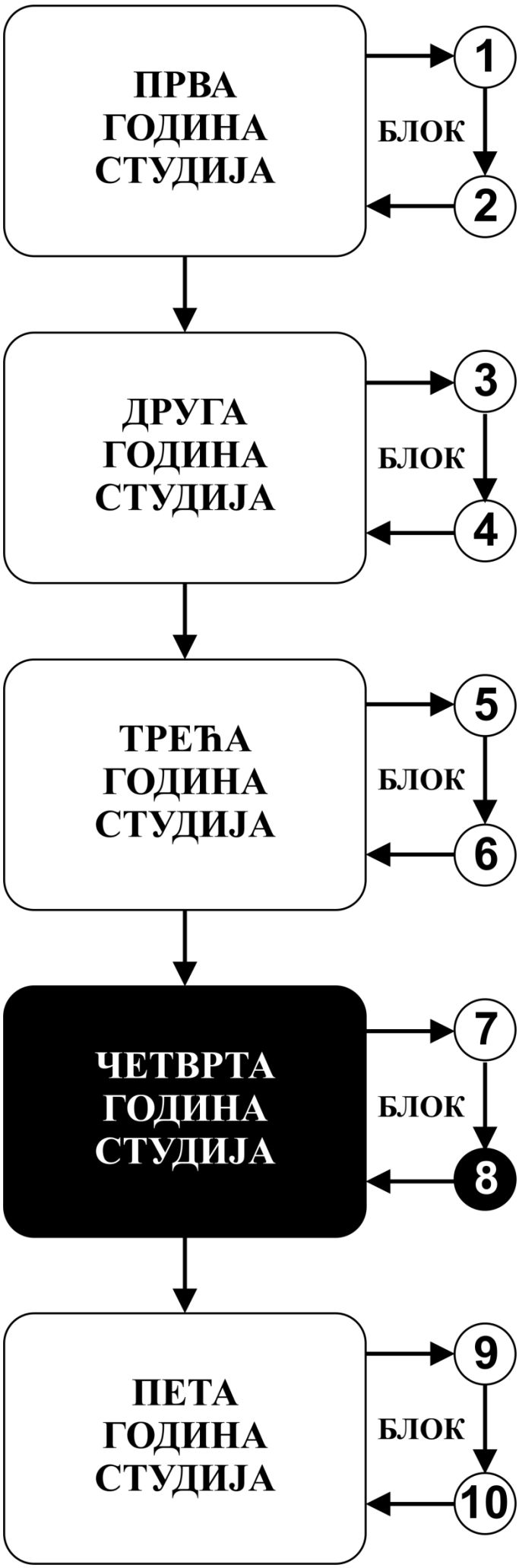
SPORTS PHYARMACY

INTEGRATED ACADEMIC STUDIES OF PHARMACY

FOURTH YEAR OF STUDIES

school 2024/2025.


ПРВА ГОДИНА СТУДИЈА
1
БЛОК
2
ДРУГА ГОДИНА СТУДИЈА
3
БЛОК
4
ТРЕЋА ГОДИНА СТУДИЈА
5
БЛОК
6
ЧЕТВРТА ГОДИНА СТУДИЈА
7
БЛОК
8
ПЕТА ГОДИНА СТУДИЈА
9
БЛОК
10

Subject:

SPORTS PHARMACY

The course is evaluated with 5 ECTS. There are 4 hours of active teaching per week (2 hours of lectures, 1 hours of work in a small group and 1 hour of seminars).

TEACHERS AND ASSOCIATES:

No	Name and surname	Email address	Vocation
1.	Vladimir Jakovljevic	drvladakgbg@yahoo.com	full professor
2.	Gvozden Rosic	grosic@medf.kg.ac.rs	full professor
4.	Nela Djonovic	nela@medf.kg.ac.rs	full professor
6.	Ivan Srejovic	ivan_srejovic@hotmail.com	associate professor
7.	Dragan Vasiljevic	dvg_gana@yahoo.com	associate professor
8.	Dragica Selakovic	dragica984@gmail.com	associate professor
9.	Jovana Joksimovic Jovic	jovana_joksimovic@yahoo.com	associate professor
10.	Marija Sekulic	msekulic82@gmail.com	assistant professor
11.	Aleksandra Stojanovic	vranicaleksandra90@gmail.com	assistant professor
12.	Jasmina Sretenovic	drj.sretenovic@gmail.com	assistant professor
13.	Dalibor Stajic	stajicdalibor@yahoo.com	assistant professor
14.	Marina Nikolic	marina.rankovic.95@gmail.com	assistant assistant
15.	Marko Ravic	markoravic@hotmail.com	teaching assistant
16.	Maja Muric	majanikolickg90@gmail.com	teaching assistant
17.	Bozidar Pindovic		teaching assistant

STRUCTURE OF SUBJECT:

Module	Name of the module	Week	Lectures	Work in a small group	Teacher-manager modules
1	Basics of sports pharmacy 1	5	2	2	Doc. dr Jasmina Sretenovic
2	Basics of sports pharmacy 2	5	2	2	Doc. dr. Jasmina Sretenovic
3	Basics of sports pharmacy 3	5	2	2	Doc. dr Jasmina Sretenovic
					Σ 60+30=90

EVALUATION:

The student overcomes the subject by modules. The grade is equivalent to the number of points earned (see tables). Points are acquired in two ways:

1. ACTIVITY DURING THE LESSON: In this way, a student can gain up to 30 points by answering 2 exam questions from that week of classes in the last class of work in a small group, and in accordance with the demonstrated knowledge, he gains 0-2 points.

2. FINAL EXAM: The final exam is organized as a final test. In this way, the student can gain up to 70 points, according to the attached table. The test consists of 35 questions. Each question is worth 2 points. If the student achieves 36 or more points on the test, the final exam has been passed.

A student has the right to take the final test if he has achieved more than 50% of the points provided for the activity and tests per modules.
Postponed passing of the final test (in subsequent exam periods) does not reduce the number of points used to define the final grade.

MODULE		MAXIMUM POINTS		
		activity during classes	**Final test**	**Σ**
1	**Basics of sports pharmacy**	30	70	100
Σ		**30**	**70**	**100**

<u>The final mark is formed as follows:</u>

In order to pass the course, the student must obtain a minimum of 51 points and pass all modules.
To pass the module the student must:
1. acquire more than 50% points in each module
2. acquire more than 50% of the points provided for the teaching activity in each module
3. pass the final exam, i.e. have more than 50% correct answers on the final test.

the number of points acquired	**mark**
0 - 50	**5**
51 - 60	**6**
61 - 70	**7**
71 - 80	**8**
81 - 90	**9**
91 - 100	**10**

ACTIVITY IN LESSON
0-30 POINTS

2 exam questions per teaching unit
Each question is worth 1 points

FINAL TEST
0-70 POINTS

EVALUATION
FINAL TEST
The test has 35 questions
Each question is worth 2 points

LITERATURE:

MODULE	TITLE OF THE TEXTBOOK	AUTHORS	PUBLISHER	THE LIBRARY
BASICS OF SPORTS PHARMACY 1	Ganong's Review of Medical Physiology, first edition in Serbian.	Ganong William. Vladimir Jakovljevic editor-in-chief	Faculty of Medical Sciences, Kragujevac 2015.	Has
	Sports medicine	Vladimir Jakovljevic, Nenad Dikic	Faculty of Medical Sciences, Kragujevac 2016.	Has
BASICS OF SPORTS PHARMACY 2	Ganong's Review of Medical Physiology, first edition in Serbian.	Ganong William. Vladimir Jakovljevic editor-in-chief	Faculty of Medical Sciences, Kragujevac 2015.	Has
	Sports medicine	Vladimir Jakovljevic, Nenad Dikic	Faculty of Medical Sciences, Kragujevac 2016.	Has
BASICS OF SPORTS PHARMACY 3	Ganong's Review of Medical Physiology, first edition in Serbian.	Ganong William. Vladimir Jakovljevic editor-in-chief	Faculty of Medical Sciences, Kragujevac 2015.	Has
	Sports medicine	Vladimir Jakovljevic, Nenad Dikic	Faculty of Medical Sciences, Kragujevac 2016.	Has

All lectures and material for small group work are available on the website of the Faculty of Medical Sciences: www.medf.kg.ac.rs

THE PROGRAM:

TEACHING UNIT 1 (FIRST WEEK):

BIOMEDICAL SCIENCES IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
The importance of biomedical sciences in sports. Development of medical-pharmaceutical doctrine in sports. Sports medical-pharmaceutical doctrine in Serbia.	Sports medicine organizations in the world and their importance.

TEACHING UNIT 2 (SECOND WEEK):

HEALTH EFFECTS OF MODERN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
The influence of modern sports on the human body. Positive and negative effects of sports on health.	Physical ability

TEACHING UNIT 3 (THIRD WEEK):

PHARMACISTS IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
The role and place of pharmacists in modern sports.	The role and place of the pharmacist in the sports team.

TEACHING UNIT 4 (FOURTH WEEK):

PHYSICAL ACTIVITY OF SPECIAL GROUPS	
2 class of lectures and 1 class of seminars	1 class of practice
Functional characteristics and physical activity of special groups.	Assessment of physical ability of special groups

TEACHING UNIT 5 (FIFTH WEEK):

PHARMACOLOGY THERAPY OF SPORTS INJURIES	
2 class of lectures and 1 class of seminars	1 class of practice
The most common injuries in sports. Pharmacological therapy of the most common sports injuries.	Prevention of the most common injuries in sports.

TEACHING UNIT 6 (SIXTH WEEK):

PHARMACEUTICAL PRINCIPLES OF HYDRATION IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
Changes in water-salt balance during physical exertion. Ionic homeostasis during prolonged physical activity. Effects of dehydration on the body.	Principles of proper and timely hydration in sports. Specifics of hydration in relation to gender, athlete's age and type of sport.

TEACHING UNIT 7 (SEVENTH WEEK):

PHARMACEUTICAL PRINCIPLES OF NUTRITION IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
Nutritional needs of athletes. Basic principles of correct and timely nutrition for athletes. The influence of nutritional correction on the metabolic status of the organism.	Principles of composing a nutritious meal for athletes. Needs for different forms of nutrients during different types of physical activity.

TEACHING UNIT 8 (EIGHTH WEEK):

DIETARY SUPPLEMENTS IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
General characteristics of dietary supplements: definition and types. The effect of dietary supplements on the body.	Application of dietary supplements in athletes. Specifics of the use of dietary supplements in relation to gender, age and type of sport.

TEACHING UNIT 9 (NINTH WEEK):

VITAMINS AND MINERALS AS SUPPLEMENTS IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
Basic characteristics of vitamins and minerals as nutritional supplements. The influence of the most important vitamins and minerals on metabolic processes and the function of organic systems.	The use of vitamins and minerals in sports. Specifics of the application of vitamin and mineral supplementation in relation to gender, age and type of sports activity.

TEACHING UNIT 10 (TENTH WEEK):

AMINO ACIDS AND PROTEINS AS SUPPLEMENTS IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
Basic characteristics of amino acids and proteins. Amino acids and proteins as dietary supplements. The influence of the use of amino acids and proteins on metabolic processes and the function of organic systems.	Use of amino acids and proteins in sports. The specifics of the use of amino acids and proteins in relation to gender, age and type of sport.

TEACHING UNIT 11 (ELEVENTH WEEK):

ERGOGENIC AGENTS AS SUPPLEMENTS IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
Ergogenic agents: definition and types. Ergogenic agents as dietary supplements. The effects of the use of ergogenic agents on metabolic processes and the function of organic systems.	Application of ergogenic agents in athletes. Specifics of the use of ergogenic agents in relation to gender, age and type of sport.

TEACHING UNIT 12 (TWELFTH WEEK):

DOPING IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
Illegal drugs and medicinal substances in sports. Abuse of drugs in sports.	Doping control.

TEACHING UNIT 13 (THIRTEEN WEEK):

THERAPEUTIC EXCEPTIONS IN SPORTS	
2 class of lectures and 1 class of seminars	1 class of practice
Use of permitted drugs and medicinal substances in sports. Therapeutic Use Exemption (TUE).	Analysis of TUE in Serbia.

TEACHING UNIT 14 (FOURTEENTH WEEK):

SUPPLEMENTATION AND DOPING	
2 class of lectures and 1 class of seminars	1 class of practice
Proper use of supplements in sports. Supplementation and doping.	Studies on dietary supplements and contamination.

TEACHING UNIT 15 (FIFTEENTH WEEK):

SANCTIONING OF DOPING	
2 class of lectures and 1 class of seminars	1 class of practice
Duties and rights of athletes during doping control. Legal sanctions for the use of prohibited substances.	The most common practical questions related to the use of supplements.

LECTURES & PRACTICE SCHEDULE

FRIDAY

08:00 – 11:00

Hall 2- Dentistry

LESSON SCHEDULE FOR THE COURSE OF SPORTS PHARMACY

week	type	Method unit name	teacher
1	**L**	Biomedical sciences in sports.	Prof. dr Vladimir Jakovljevic
1	**P**	Sports medicine organizations in the world and their importance.	Doc. dr Jasmina Sretenovic Doc.dr Marina Nikolic
1	**S**	Biomedical sciences in sports.	Prof. dr Vladimir Jakovljevic
2	**L**	Health effects of modern sports.	Prof. dr Gvozden Rosic
2	**P**	Physical ability.	Ass. dr Maja Muric Doc. dr. Jasmina Sretenovic
2	**S**	Health effects of modern sports.	Prof. dr Gvozden Rosic
3	**L**	Pharmacists in sports.	Doc. dr Marina Nikolic
3	**P**	The role and place of the pharmacist in the sports team.	Doc. dr Jovana Joksimovic Jovic Ass. dr. Maja Muric
3	**S**	Pharmacists in sports.	Doc. dr Marina Nikolic
4	**L**	Functional characteristics and physical activity of special groups.	Prof. dr Ivan Srejovic
4	**P**	Assessment of physical ability of special groups	Ass. dr. Maja Muric Doc. dr Marina Nikolic
4	**S**	Functional characteristics and physical activity of special groups.	Prof. dr Ivan Srejovic
5	**L**	Pharmacological therapy of sports injuries.	Doc. dr Aleksandra Stojanovic
5	**P**	Prevention of the most common sports injuries.	Ass. dr Bozidar Pindovic Ass. dr Marko Ravic
5	**S**	Pharmacological therapy of sports injuries.	Doc. dr Aleksandra Stojanovic
6	**L**	Pharmaceutical principles of hydration in sports.	Doc. dr Marina Nikolic

LESSON SCHEDULE FOR THE COURSE OF SPORTS PHARMACY

week	type	Method unit name	teacher
6	**P**	Principles of proper and timely hydration in sports. Specifics of hydration in relation to gender, athlete's age and type of sport.	Prof. dr Jovana Joksimovic Jovic Ass. Maja Nikolic
6	**S**	Pharmaceutical principles of hydration in sports.	Doc. dr Marina Nikolic
7	**L**	Supplementation and doping.	Prof. dr Dragica Selakovic
7	**P**	Studies on dietary supplements and contamination.	Ass. Maja Muric Doc. dr Jasmina Sretenovic
7	**S**	Supplementation and doping.	Prof. dr Dragica Selakovic
8	**L**	Sanctioning of doping.	Prof. dr Dragica Selakovic
8	**P**	The most common practical questions related to the use of supplements.	Doc. dr Marina Nikolic Ass. dr Maja Muric
8	**S**	Sanctioning of doping.	Prof. dr Dragica Selakovic
9	**L**	Vitamins and minerals as supplements in sports	Doc. dr Jasmina Sretenovic
9	**P**	The use of vitamins and minerals in sports. Specifics of the application of vitamin and mineral supplementation in relation to gender, age and type of sports activity.	Doc. dr Jovana Joksimovic Jovic Ass. dr Maja Muric
9	**S**	Vitamins and minerals as supplements in sports	Doc. dr Jasmina Sretenovic
10	**L**	Amino acids and proteins as supplements in sports	Doc. dr Jovana Joksimovic Jovic
10	**P**	Use of amino acids and proteins in sports. The specifics of the use of amino acids and proteins in relation to gender, age and type of sport.	Ass. Maja Muric Doc. dr Marina Nikolic
10	**S**	Amino acids and proteins as supplements in sports	Doc. dr Jovana Joksimovic Jovic
11	**L**	Ergogenic agents as supplements in sports	Doc. dr Jovana Joksimovic Jovic
11	**P**	Application of ergogenic means in athletes. Specifics of the use of ergogenic means in relation to gender, age and type of sport.	Doc. dr Jasmina Sretenovic Ass. dr Maja Muric

LESSON SCHEDULE FOR THE COURSE OF SPORTS PHARMACY

week	type	Method unit name	teacher
11	**S**	Ergogenic agents as supplements in sports	Doc. dr Jovana Joksimovic Jovic
12	**L**	Doping in sports.	Doc. Aleksandra Stojanovic
12	**P**	Doping in sports.	Ass. dr Bozidar Pindovic Ass. dr Marko Ravic
12	**S**	Doping in sports.	Doc. Aleksandra Stojanovic
13	**L**	Therapeutic exceptions in sports.	Doc. dr Jasmina Sretenovic
13	**P**	Analysis of TUE in Serbia.	Doc. dr Marina Nikolic Ass. dr Maja Muric
13	**S**	Therapeutic exceptions in sports.	Doc. dr Jasmina Sretenovic
14	**L**	Pharmaceutical principles of nutrition in sports.	Prof. dr Nela Djonovic
14	**P**	Principles of composing a nutritious meal for athletes. Needs for different forms of nutrients during different types of physical activity.	Doc. dr Marija Sekulic Doc. dr Dalibor Stajic
14	**S**	Pharmaceutical principles of nutrition in sports.	Prof. dr Nela Djonovic
15	**L**	Dietary supplements in sports	Prof. dr Dragan Vasiljevic
15	**P**	Application of dietary supplements in athletes. Specifics of the use of dietary supplements in relation to gender, age and type of sport.	Doc. dr Marija Sekulic Doc. dr Dalibor Stajic
15	**S**	Dietary supplements in sports	Prof. dr Dragan Vasiljevic
	E	**FINAL TEST** (January-February deadline)	