



# SOFIA UNIVERSITY "ST. KLIMENT OHRIDSKI"

## FACULTY OF CHEMISTRY AND PHARMACY

### CURRICULUM

Signed by .....



Approved by the Academic Council,  
Record of Proceedings № ..... 1 ..... 19.10.2016z.

Professional Field: **7.3. Pharmacy**

Educational and Qualification Degree: **Master of Science**

Subject Area:

C	H	L	3	8	2	4	1	6
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(code, name)

**Pharmacy**

Form of Study: full-time

Length of Study: 10 semesters

Professional Qualification: **MASTER OF PHARMACY**

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CHL382416

## M. Sc. Program "Pharmacy"

for the academic year beginning in 2016

№	Course code	Course Title	Type – C, E, O	Semester	ECTS credits	Number of hours- total				Number of hours per week	Type of grading* - e, ca, m, a
						Total	Lectures	Seminars	Practical classes / practice		
1	2	3	4	5	6	7	8	9	10	11	12

## Core courses

1	C 0 1 7	Mathematics (Calculus)	C	1	7	175	30	0	45	2/0/3	e
2	C 0 2 5	Biology	C	1	5	125	30	0	30	2/0/2	e
3	C 0 3 6	General and Inorganic Chemistry 1	C	1	6	150	30	0	45	2/0/3	e
4	C 0 4 5	Latin	C	1	5	125	30	30	0	2/2/0	e
5	C 0 5 5	English	C	1	5	125	0	60	0	0/4/0	e
6	C 0 6 2	Sport	C	1	-	30	0	0	30	0/0/2	a
7	C 0 7 4	Human Anatomy	C	2	4	100	30	0	15	2/0/1	e
8	C 0 8 5	General and Inorganic Chemistry 2	C	2	5	125	30	0	30	2/0/2	e
9	C 0 9 7	Physics and Biophysics	C	2	7	175	45	0	45	3/0/3	e
10	C 1 0 5	Pathoanatomy	C	2	5	125	30	0	30	2/0/2	e
11	C 1 1 8	Microbiology and Virology	C	2	8	200	60	0	60	4/0/4	e
12	C 1 2 3	History of Pharmacy	C	2	3	75	30	0	0	2/0/0	ca
13	C 0 6 2	Sport	C	2	2	30	0	0	30	0/0/2	ca
14	C 1 4 6	Human Physiology	C	3	6	150	45	0	45	3/0/3	e
15	C 1 5 6	Analytical Chemistry 1	C	3	6	150	30	0	60	2/0/4	e
16	C 1 6 5	Physical Chemistry with Colloid Chemistry 1	C	3	5	125	30	0	30	2/0/2	e
17	C 1 7 6	Organic Chemistry 1	C	3	6	150	45	0	45	3/0/3	e
18	C 1 8 5	Information Technology and Statistics	C	3	5	125	30	0	30	2/0/2	e
19	C 0 6 2	Sport	C	3	-	30	0	0	30	0/0/2	a

Type of grading:  
e-exam, ca-current assesment,  
m-matriculation,  
a-advances to the next semester

The Faculty Council has decided that min. 50% of the total education load is independent study of the students

20	C	2	0	6	Analytical Chemistry 2	C	4	6	150	30	0	60	2/0/4	e
21	C	2	1	5	Physical Chemistry with Colloid Chemistry 2	C	4	5	125	30	0	30	2/0/2	e
22	C	2	2	6	Organic Chemistry 2	C	4	6	150	45	0	45	3/0/3	e
23	C	2	3	6	Pharmaceutical Botany	C	4	6	150	45	0	45	3/0/3	e
24	C	2	4	5	Pathophysiology	C	4	5	125	30	0	30	2/0/2	e
25	C	0	6	2	Sport	C	4	2	30	0	0	30	0/0/2	ca
26	C	2	6	0	Pharmacognosy 1	C	5	10	250	60	0	90	4/0/6	e
27	C	2	7	7	Pharmaceutical Chemistry 1	C	5	7	175	45	0	60	3/0/4	e
28	C	2	8	7	Biochemistry	C	5	7	175	45	30	30	3/2/2	e
29	C	2	9	5	Pharmacogenetics	C	5	5	125	30	0	30	2/0/2	e
30	C	3	0	4	Hygiene and Ecology	C	5	4	100	30	0	15	2/0/1	e
31	C	3	1	8	Pharmacognosy 2	C	6	8	200	45	0	75	3/0/5	e
32	C	3	2	7	Pharmaceutical Chemistry 2	C	6	7	175	45	0	60	3/0/4	e
33	C	3	3	0	Pharmaceutical Technology 1	C	6	10	250	60	0	90	4/0/6	e
34	C	3	4	6	Pharmacology 1	C	6	6	150	45	0	45	3/0/3	e
35	C	3	5	0	Pharmaceutical Technology 2	C	7	10	250	60	0	90	4/0/6	e
36	C	3	6	7	Pharmacology 2	C	7	7	175	45	0	60	3/0/4	e
37	C	3	7	7	Pharmaceutical Analysis 1	C	7	7	175	45	0	60	3/0/4	e
38	C	3	8	5	Clinical Chemistry	C	7	5	125	30	0	30	2/0/2	e
39	E	3	9	4	Elective course 1	E	7	4	100	30	0	30	2/0/2	e
40	C	4	0	8	Pharmaceutical Technology 3	C	8	8	200	45	0	75	3/0/5	e
41	C	4	1	8	Pharmaceutical Analysis 2	C	8	8	200	45	0	75	3/0/5	e
42	C	4	2	5	Social Pharmacy and Pharmaceutical Law 1	C	8	5	125	30	15	30	2/3/0	ca
43	C	4	3	6	Toxicology	C	8	6	150	45	0	45	3/0/3	e
44	C	4	4	5	Pharmacotherapy 1	C	8	5	125	45	0	30	3/0/2	e
45	C	4	5	7	Biopharmaceutics and Pharmacokinetics	C	9	7	175	45	0	60	3/0/4	e
46	C	4	6	6	Pharmacotherapy 2	C	9	6	150	45	0	30	3/0/2	e
47	C	4	7	5	Social Pharmacy and Pharmaceutical Law 2	C	9	5	125	30	15	30	2/2/0	e

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48	C	4	8	5	Pharmacoeconomics	C	9	5	125	30	30	0	2/2/0	e
49	C	4	9	5	Pharmaceutical Care	C	9	5	125	30	30	0	2/2/0	e
50	E	5	0	4	Elective course 2	E	9	4	100	30	0	30	2/0/2	e

**Elective courses – courses with minimum of 8 ECTS (total) must be elected**

1	E	0	1	4	Analytical Toxicology	E	7,9	4	100	30	0	30	2/0/2	e
2	E	0	2	4	Bioactive and Medico-pharmaceutical Polymers	E	7,9	4	100	30	0	30	2/0/2	e
3	E	0	3	4	Bioinorganic Chemistry	E	7,9	4	100	30	0	30	2/0/2	e
4	E	0	4	4	Bioorganic Chemistry	E	7,9	4	100	30	0	30	2/0/2	e
5	E	0	5	4	Biophysical Chemistry	E	7,9	4	100	30	0	30	2/0/2	e
6	E	0	6	4	Bromatology	E	7,9	4	100	30	0	30	2/0/2	e
7	E	0	7	4	Cosmetic Materials and Care	E	7,9	4	100	30	0	30	2/0/2	e
8	E	0	8	4	Coordination Compounds in Medicine	E	7,9	4	100	30	0	30	2/0/2	e
9	E	0	9	4	Molecular Modeling of Pharmacophores	E	7,9	4	100	30	0	30	2/0/2	e
10	E	1	0	4	Nanotechnologies in Pharmacy	E	7,9	4	100	30	0	30	2/0/2	e
11	E	1	1	4	Dispersions in foods	E	7,9	4	100	30	0	30	2/0/2	e
12	E	1	2	4	Presentation skills	E	7,9	4	100	30	0	30	2/0/2	e
13	E	1	3	4	Quality Management in Pharmacy	E	7,9	4	100	30	0	30	2/0/2	e
14	E	1	4	4	Chemistry of Natural Products	E	7,9	4	100	30	0	30	2/0/2	e
15	E	1	5	4	QSAR and Drug Design	E	7,9	4	100	30	0	30	2/0/2	e

**Optional courses**

1	O	0	1	3	Introduction to University Chemistry	O	1	3	75	0	0	30	0/0/2	ca
2	O	0	2	3	Basic Mathematics	O	1	3	75	0	0	30	0/0/2	ca
3	O	0	3	3	Fundamentals of Pharmaceutics	O	2,3	3	75	30	15	0	2/1/0	ca
4	O	0	4	4	Optical and Electron Microscopy	O	3-9	4	100	30	0	30	2/0/2	e

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5	O	0	5	3	Molecular Mechanics	O	3,5,7,9	3	75	30	0	15	2/0/1	e
6	O	0	6	4	Molecular Dynamics and Monte Carlo Simulations	O	6,8	4	100	30	0	30	2/0/2	e
7	O	0	7	4	Ab initio MO Calculations	O	6,8	4	100	30	0	30	2/0/2	e
8	O	0	8	5	Colloids and Dispersions in Medicine and Pharmacy	O	3,5,7,9	5	125	45	0	30	3/0/2	e
9	O	0	9	5	Biomembranes in Norm and Pathology	O	4,6,8	5	125	45	0	30	3/0/2	e
10	O	1	0	4	Bioelectronics	O	4,6,8	4	100	30	0	30	2/0/2	e
11	O	1	1	4	Immunochemistry	O	3-9	4	100	30	0	30	2/0/2	e
15	O	1	5	4	Radioactive Isotopes in Nuclear Medicine	O	5,7,9	4	100	30	0	30	2/0/2	e
13	O	1	3	4	Organic Biolabels for Diagnostics	O	4,6,8	4	100	30	0	30	2/0/2	e
14	O	1	4	4	Green Chemistry	O	4,6,8	4	100	30	0	30	2/0/2	e
15	O	1	5	4	Sport (two semesters)	O	5,6,7,8	4	60	0	0	60	0/0/2	ca
16	O	1	6	4	Business English	O	6,8	4	100	15	0	45	1/0/3	e

Study Internships											
No	code			Internship	Type - C, E, O	Semester	ECTS credits	Days	Hours	Type of grading* - e, ca, m	
1	I	0	1	2	Study Internship in Botany	C	4	2	6	48	ca
2	I	0	2	2	Study Internship in Pharmacognosy	C	6	2	6	48	ca
3	I	0	3	2	Study Internship in Pharmaceutical Technology	C	8	2	7	60	ca
4	I	0	4	0	Professional Internship	C	10	28	168	720	ca

Type of grading:  
e-exam, ca-current assesment,  
m-matriculation,  
a-advances to the next semester

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### Degree completion

Form of degree completion	ECTS credits	First state exam/ thesis defence session	Second state exam/ thesis defence session
State exam in Pharmaceutical Technology and Biopharmacy	15	October- November	February- March
State exam in Pharmacognosy, Pharmacology, and Toxicology			
State exam in Pharmaceutical Chemistry and Pharmaceutical Analysis			
State exam in Social Pharmacy and Pharmaceutical Law			

The curriculum has been approved by the Faculty Council, Record of Proceedings № 19 from 12. 07. 2016

DEAN:.....

*The Faculty Council has decided that min. 50% of the total education load is independent study of the students*

Type of grading:  
e-exam, ca-current assesment,  
m-matriculation,  
a-advances to the next semester

## Sofia University "St. Kliment Ohridski"

**Curriculum Reference Statement**

M. Sc. Program "Pharmacy"

Form of study: full-time; Length of study: ten semesters

In-class course load, ECTS credits and courses completed per semester																								
Type of courses	I semester			II semester			III semester			IV semester			V semester			VI semester			VII semester			VIII semester		
	Course Load - number of hours	ECTS credits	Number of grades	Course Load - number of hours	ECTS credits	Number of grades	Course Load - number of hours	ECTS credits	Number of grades	Course Load - number of hours	ECTS credits	Number of grades	Course Load - number of hours	ECTS – кредити	Number of grades	Course Load - number of hours	ECTS credits	Number of grades	Course Load - number of hours	ECTS credits	Number of grades	Course Load - number of hours	ECTS credits	Number of grades
Compulsory courses	360	28	5	435	34	7	420	28	5	420	30	6	465	33	5	465	31	4	420	29	4	480	32	5
Min. of elective courses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	4	1	0	0	0
Study internships	0	0	0	0	0	0	0	0	0	48	2	1	0	0	0	48	2	1	0	0	0	60	2	1
<b>Total:</b>	<b>360</b>	<b>28</b>	<b>5</b>	<b>435</b>	<b>34</b>	<b>7</b>	<b>420</b>	<b>28</b>	<b>5</b>	<b>468</b>	<b>32</b>	<b>7</b>	<b>465</b>	<b>33</b>	<b>5</b>	<b>513</b>	<b>33</b>	<b>5</b>	<b>480</b>	<b>33</b>	<b>5</b>	<b>540</b>	<b>34</b>	<b>6</b>

Degree completion	ECTS credits	Number of hours for preparation	First state exam/thesis defence session
State exam in Pharmaceutical Technology and Biopharmacy State exam in Pharmacognosy, Pharmacology, and Toxicology State exam in Pharmaceutical Chemistry and Pharmaceutical Analysis State exam in Social Pharmacy and Pharmaceutical Law	15	300	October-November

**Professional Qualification: Master of Pharmacy****Record of Proceedings of the Faculty Council № 19 from 12. 07. 2016****Dean:**

IX semester			X semester			Total		
Course Load - number of hours	ECTS credits	Number of grades	Course Load - number of hours	ECTS credits	Number of grades	Course Load - number of hours	ECTS credits	Number of grades
375	28	5	0	0	0	3840	273	46
60	4	1	0	0	0	120	8	2
0	0	0	720	28	1	876	34	4
435	32	6	720	28	1	4836	315	52

Second state exam/ thesis defence session

February-March