

STUDY PROGRAM STRUCTURE: PHARMACY IN ENGLISH LANGUAGE

Number	Course code	Name of course	Semester	Weekly number of classes		Hours per semester		ECTS
				lectures	tutorials	lectures	tutorials	
YEAR ONE								
1	3FMN191925	General and inorganic chemistry	1	3	2	45	30	6
2	2FI100125	Mathematics	1	2	2	30	30	5
3	3FMN192125	Biology for pharmacists	1	3	2	45	30	6
4	3FMN192225	Biophysics	1	2	2	30	30	5
5	3FMN192325	Introduction to pharmacy	1	2	1	30	15	4
6		Elective course group 1	1	2	1	30	15	4
7	3FMN192425	Organic chemistry	2	3	3	45	45	7
8	3FMN192525	Physical chemistry	2	3	2	45	30	6
9	3FMN192625	Human physiology and anatomy	2	3	2	45	30	6
10	3FMN192825	Biochemistry 1	2	3	2	45	30	6
11	3FMN192725	Molecular biology and genetics	2	2	2	30	30	5
Total number of lessons (lectures/tutorials) and ECTS per year:				28	21	420	315	60

Number	Course code	Name of course	Semester	Weekly number of classes		Hours per semester		ECTS
				lectures	tutorials	lectures	tutorials	
YEAR TWO								
12	3FMN193025	Pharmaceutical botany	3	2	3	30	45	6
13	3FMN192925	Biochemistry 2	3	3	2	45	30	6
14	3FMN193125	Bioorganic chemistry	3	3	3	45	45	7
15	3FMN193225	Analytical chemistry 1	3	2	3	30	45	6
16	3FMN193325	Microbiology and parasitology	3	2	2	30	30	5
17	3FMN193425	Instrumental pharmaceutical analysis	4	2	3	30	45	6
18	3FMN193525	Pathophysiology with pathology	4	2	2	30	30	5
19	3FMN193625	Analytical chemistry 2	4	2	3	30	45	6
20	3FMN193725	Pharmacognosy	4	3	2	45	30	6
21	3FMN193825	Pharmaceutical chemistry 1	4	3	3	45	45	7
Total number of lessons (lectures/tutorials) and ECTS per year:				24	26	360	390	60

Number	Course code	Name of course	Semester	Weekly number of classes		Hours per semester		ECTS
				lectures	tutorials	lectures	tutorials	
YEAR THREE								
22	3FMN193925	Phytochemistry	5	2	2	30	30	5
23	3FMN194025	Pharmaceutical technology 1	5	3	3	45	45	7
24	3FMN194125	Pharmaceutical chemistry 2	5	3	3	45	45	7
25	3FMN194225	Pharmacology 1	5	2	2	30	30	5
26	3FMN194325	Immunology and immunochemistry	5	2	3	30	45	6
27	3FMN194425	Pharmaceutical technology 2	6	3	3	45	45	7
28	3FMN194525	Pharmaceutical chemistry 3	6	3	3	45	45	7
29	3FMN194625	Pharmacology 2	6	3	2	45	30	6
30	3FMN194725	Basics of scientific research and biostatistics	6	2	1	30	15	4
31	3FMN194825	Phytotherapy	6	3	2	45	30	6
Total number of lessons (lectures/tutorials) and ECTS per year:				26	24	390	360	60

Number	Course code	Name of course	Semester	Weekly number of classes		Hours per semester		ECTS
				lectures	tutorials	lectures	tutorials	
YEAR FOUR								
32	3FMN194925	Pharmaceutical technology 3	7	3	3	45	45	7
33	3FMN195025	Clinical biochemistry	7	2	2	30	30	5
34	3FMN195125	Drug and medicinal product analysis	7	3	3	45	45	7
35	3FMN195225	Drug metabolism	7	2	2	30	30	5
36	3FMN195325	Bromatology	7	3	2	45	30	6
37	3FMN195425	Advanced drug and medicinal product analysis	8	3	3	45	45	7
38	3FMN195525	Pharmaceutical toxicology	8	3	3	45	45	7
39	3FMN195625	Biopharmacy and pharmacokinetics	8	3	3	45	45	7
40	3FMN195725	Social pharmacy	8	2	2	30	30	5
41		Elective course group 2	8	2	0	30	0	2
42		Elective course group 2	8	2	0	30	0	2
Total number of lessons (lectures/tutorials) and ECTS per year:				28	23	420	345	60
Number	Course code	Name of course	Semester	Weekly number of classes		Hours per semester		ECTS
				lectures	tutorials	lectures	tutorials	
YEAR FIVE								
43	3FMN195825	Pharmaceutical biotechnology	9	2	2	30	30	5
44	3FMN195925	Clinical pharmacy and pharmacotherapy	9	2	2	30	30	5
45	3FMN196025	Community pharmacy and patient communication	9	1	2	15	30	4
46	3FMN196125	Drug information management	9	1	2	15	30	4
47	3FMN196225	Professional practice – hospital and clinical pharmacy	9	0	10	0	150	10
48		Elective course group 3	9	2	0	30	0	2
49	3FMN196325	Professional practice – community pharmacy	10	0	35	0	525	20
50	3FMN196425	Graduation thesis	10	0	5	0	75	10
Total number of lessons (lectures/tutorials) and ECTS per year:				8	58	120	870	60
Total number of lessons and ECTS for all five years				114	152	1710	2280	300
Total number of lessons for all five years				3990				

List of elective courses Group 1 (One course is chosen from the list)								
Number	Course code	Name of course	Semester	Weekly number of classes		Hours per semester		ECTS
				lectures	tutorials	lectures	tutorials	
YEAR ONE								
1	4FF161225	English for Pharmacists	1	2	1	30	15	4
2	4FF161125	Macedonian language for foreign students	1	2	1	30	15	4
3	4FF161325	German language, level A1.1	1	2	1	30	15	4
List of elective courses Group 2 (Two courses are chosen from the list)								
YEAR FOUR								
1	3FMN196825	Industrial pharmacy	8	2	0	30	0	2
2	3FMN196925	Cosmetology	8	2	0	30	0	2
3	3FMN197025	Nutraceuticals	8	2	0	30	0	2
4	3FMN197125	Pharmacoeconomy and pharmaceutical marketing	8	2	0	30	0	2
5	3FMN197225	Enzymes and enzyme inhibitors	8	2	0	30	0	2
6	3FMN197325	Contemporary aspects of herbal drugs	8	2	0	30	0	2
List of elective courses Group 3 (One course is chosen from the list)								
YEAR FIVE								
1	3FMN197425	Radiopharmacy	9	2	0	30	0	2
2	3FMN197525	Validation and qualification in analytical laboratories	9	2	0	30	0	2
3	3FMN197625	Analyses in clinical toxicology	9	2	0	30	0	2
4	3FMN197725	Pharmaceutical legislation and registration of medicines and medical devices	9	2	0	30	0	2
5	3FMN197825	Pharmaceutical care and pharmacovigilance	9	2	0	30	0	2
6	3FMN197925	Stability of medicinal products	9	2	0	30	0	2