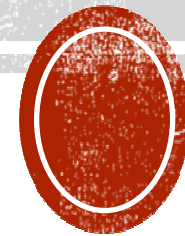


POSTGRADUATE EDUCATION OF PHARMACEUTICAL PROFESSIONALS

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REGULATORY BASIS



Co-funded by the
Erasmus+ Programme
of the European Union



- MoH Regulation N 1/22.01.2015 (For receiving a specialty in the area of medicine, pharmacy, dental medicine, public health)
- Sets the following:
 - Accredited specializations;
 - Accredited institutions to educate;
 - Type of education;
 - Documentation;
 - Governance of education;
 - Governmental exam;
 - Financing;
 - Registry.
- Education Organized by Medical University (Faculty of Pharmacy) after a request from institutions or according to long term program strategies.
- Education organized by Scientific Societies.



TYPE OF PHARMACEUTICAL SPECIALIZATIONS (REGUL. 1)

Clinical	Non Clinical	For non pharmacists working in pharmaceutical facilities
Clinical Pharmacy	Organization and economy of distribution and retail practice	Organization and economy of pharmaceutical industry
Clinical Chemistry	Organization and economy of pharmaceutical industry	Pharmaceutical analysis
	Herbal medicines	
	Pharmaceutical analysis	
	Biochemistry	
	Hospital Pharmacy (2015)	
	Pharmaceutical technology	
	Toxicology and toxicological analysis (2015)	
	Pharmacology and pharmacotherapy (2015)	



GOVERNANCE OF EDUCATION

Admittance	2 times during one year, after public announcement, ranking according to grades after higher pharmaceutical education
Length of education	3 years
Type of education	Theoretical and Practical
Place of theoretical education	Pharmaceutical Faculties
Place of practical education	Accredited hospitals for clinical specialties Working places (e.g. pharmacies, wholesalers, companies etc.)
Governance	Program approved by the Minister of Health Number of people approved by the MoH Admittance – MoH through the University in the accredited bases for education. Order of the Rector for admittance and responsible professor/ tutor Education at the University under the governance of prof. Specialization books Modular theoretical education 6 colloquiums Individual tasks after each colloquim
Governmental exams	Committee established by the Minister of health Theoretical and practical exam in 2 days
Degree	Postgraduate Specialty



PHARMACEUTICAL ANALYSIS

- **Admittance** – pharmacists and chemists
- **Colloquiums** – Spectral analysis; Chromatographic analysis; Functional analysis; Analysis of antibiotics; Analysis of phenothiazine, barbiturates, and their derivatives; Medicines analysis in biological tissues and liquids.
- **Theoretical and practical topics**

Year	Topics	Form		Theoretical education (hours)	Practical education (hours)	Total	Общо за година
		regular	distance				
I	Instrumental methods	Yes		90	60	10	150
II	Analytical methods	Yes		90	60	10	150
III	Analysis in biological tissues and liquids	Yes		90	60	10	150
Total				270	180	30	450



PHARMACOLOGY AND PHARMACOTHERAPY

- **Admittance** – pharmacists
- **Colloquiums** – General pharmacology; Medicines acting on CV system, nervous system, chemotherapeutics, respiratory system, endocrine system, gastrointestinal system, vitamins; Clinical studies; Factors affecting the pharmacotherapy; Pharmacotherapy of CV system, pain, digestive, nervous system, allergic diseases etc.
- **Theoretical and practical topics**

Year	Modules	Theoretical education	Practical education	Individuals tasks	Total
First	I	20	20	-	160
	II	20	20	-	
	III	20	20	-	
	IV	20	20	-	
Second	V	20	20	-	160
	VI	20	20	-	
	VII	20	20	-	
	VIII	20	20	-	
Third	IX	20	10	10	160
	X	20	10	10	
	XI	20	10	10	
	XII	20	10	10	
Total		240	200	40	480



CLINICAL PHARMACY

- **Admittance** – pharmacists
- **Colloquiums** – Pharmacology; Drug toxicology and addiction; HPLC of medicines in biological liquids and tissues; Biopharmaceutical evaluation of medicines; Pharmacotherapy of CV and lung diseases; Clinical Pharmacy.
- **Theoretical and practical topics**

Year	Modules	Form		Theoretical education	Practical education	Individual tasks	Total
		regular	distance				
I	I	x	x	48	-	18	199
	II	x	-	30	20	33	
	III	-	x	-	20	30	
II	IVa	x	-	28	12	-	186
	IVб	x	-	-	30	-	
	V	x	-	46	20	-	
	VI	-	x	-	20	30	
III	VII	x	x	24	-	36	170
	VIII	x	-	30	30	-	
	IX	-	x	-	20	30	
Общо часове:				206	172	177	555



CLINICAL CHEMISTRY

- **Admittance** – pharmacists, chemistry, biochemistry, biology,
- **Colloquiums** – Analytical chemistry; Quality assurance; Clinical chemistry; Laboratory analysis; Laboratory analysis.
- **Theoretical and practical topics**

Module	Year	Hours
Analytical chemistry	I	5 months
Laboratory management and quality assurance	I	6 months
Clinical chemistry	II, III	18 months
Laboratory hematology and hemostasis	III	3 months
Laboratory assay of urine and other biological tissues	III	4 months



HERBAL MEDICINES

- **Admittance** – pharmacists
- **Colloquiums** – Herbal anatomy, morphology, and systematization; Primary and secondary metabolites of herbal substances; Steroid, Alkaloids, CV glycosides; Biotechnology; Pharmacognosy.
- **Theoretical and practical topics**

Years	Modules	Forms		Theoretical education	Practical education	Hours	Total
		regular	distance				
I	Pharmaceutical botany	regular	-	15	30	28	73
	Pharmacognosy			18	30	30	78
II	Pharmacognosy	regular	-	36	60	60	156
III	Pharmaceutical biotechnology	regular	-	18	30	30	78
	Pharmacognosy		-	30	-	30	60
Total				117	150	178	445



OEDR PRACTICE

- **Admittance** – pharmacists
- **Colloquiums** – Legislation, MDS, Pharmcare, Pharmepi, PhamEcon, Accounting and financing.
- **Theoretical and practical topics**

Years	Modules	Forms		Theoretical education	Practical education	Total
		regular	Individual			
I	A. European pharm legislation and market	regular	30	20	30	130
	B. Management of drug supply			20	30	
II	A. Pharmaceutical care	regular	48	20	30	148
	B. Pharmacoepidemiology			20	30	
III	A. Pharmacoeconomics	regular	20	20	30	120
	B. Accounting and financing of pharm sector			20	30	
Total			98	120	180	398



PHARMACEUTICAL MANUFACTURING

- **Admittance** – pharmacists, chemists, chemical engineers, biologists, economists
- **Colloquiums** – Legislation, Economics of pharm Manufacturing, Marketing, Management of industry, QA and QP, Pharm Legislation
- **Theoretical and practical topics**

Years	Modules	Forms		Theoretical education	Practical education	Total
		regular	Individual			
I	A. Industrial organization	regular	30	20	30	130
	B. Manufacturing management			20	30	
II	A. Industrial marketing	regular	48	20	30	148
	B. Economic of Pharm manufacturing			20	30	
III	A. Quality assurance	regular	20	20	30	120
	B. Pharm Legislation			20	30	
Total			98	120	180	398



PHARMACEUTICAL TECHNOLOGY

- **Admittance** – pharmacists
- **Colloquiums** – Liquid dosage forms; Solid dosage form; Dermal products; Sterile dosage forms; Stability; Biopharmaceutical control; Dosage forms with modified release
- **Theoretical and practical topics**

Yea	Modules	Forms		Theoretical education	Practical education	Total
		regular	Individual			
I	A. Liquid and solid dosage forms. Phytoproducts. B. Solutions	regular	100	120	80	300
II	A. Sterile dosage forms B. Dermal dosage forms	regular	100	120	80	300
III	A. Ophthalmological dosage forms B. Biopharmacy, stability	regular	100	120	800	300
Total			300	360	240	900



PHARMACEUTICAL TOXICOLOGY

- **Admittance** – pharmacists, chemists, biologists, biochemistry, molecular biology, biotechnology
- **Colloquiums** – Clinical toxicology, Military toxicology, Risk management and evaluation, Toxicological methods, Basic toxicology
- **Theoretical and practical topics**

Yea	Modules	Forms		Theoretical education	Practical education	Total
		regular	Individual			
I	Basic toxicology Toxicological factors		100	120	80	300
II	Toxicometrics Biochemical aspects of toxicology		100	120	80	300
III	Clinical and military toxicology Risk management Poisoning		100	120	800	300
			300	360	240	900





INTERNAL AND EXTERNAL CONTROL

- Ministry of health:
 - Create regulatory basis;
 - Schedule the admittance and number of people;
 - Issue orders for Governmental Exam Committees.
- University:
 - Organizes the education,
 - Follows the program,
 - Organizes colloquiums,
 - Verifies the fulfillment of the program and requested colloquiums,
 - Provide final evaluation and recognition of the tasks accomplishment,
 - Participate at the Governmental Exam Committees.
- Responsible professor/tutor:
 - control the performance,
 - tutor the preparation for colloquiums and individual tasks
 - Examining



SAMPLES



ПОЛОЖЕНИ КОЛОКВИУМИ			
Дата	ТЕМА	Оценка	Подпис на комисията и печат на базата
1	2	3	4
	Колоквиум "Фармакология и социални науки" Давески		 Проф. З. Давески Д-р А. Гочева
	Колоквиум за фармакология при нервни и мускулни		 Проф. П. Петров Д-р П. Петров

Забележки: 1. Колоквиумите се прилагат пред комисия.
 2. По време на специализацията се отразяват положените колоквиуми съгласно учебната план-програма.
 3. Имената на членовете на комисията да се вписват в колона № 4



EDUCATED AND GRADUATED PEOPLE

Specialty	2012	2013	2014	2015	2016
Clin Pharm	7	6	8	10	5
OEDRPractice	5	5	2	9	6
OEPHarmManuf	3	1		3	
Herbal medicines	1		1		
Pharmaceutical analysis	2	1	1	3	3
Pharmaceutical technology		2	1	1	
Toxicology and toxic analysis				5	1
Pharmacology and pharmacotherapy				10	10
Hospital Pharmacy				9	8
GRADUATED	18	9	5	12	



EDUCATION ORGANIZED BY FACULTY OF PHARMACY AFTER A REQUEST FROM INSTITUTIONS.

LONG TERM PROGRAMS	SHORT TERM PROGRAMS
Saturday education program for life long learning and accreditation – ones per month	Courses of QP in Pharm Manufacturing
Homeopathic program	Courses for non medical professionals in pharm industry
Scientific society program	Courses on different clinical and pharmaceutical topics
Healthy nutrition and dietary supplements	
GMP programs	
Summer and winter school for physicians and dental physicians	
School for pediatrics and GPs	



EDUCATION ORGANIZED BY SCIENTIFIC SOCIETIES

- The Faculty of Pharmacy is actively included in the events organized by:
 - Bulgarian Scientific Pharmaceutical Association:
 - Organizes scientific congresses every 3 years – In October 2016 in Sandansky
 - Organizes yearly educational conferences on different topics of interest for scientific community or members.
 - Bulgarian Scientific Society of Pharmacology
 - Organizes scientific congresses every 3 years.
 - Bulgarian Scientific Society of Toxicology
 - Scientific congresses
 - Training courses
 - Bulgarian ISPOR Chapter
 - Participate in European and World ISPOR congresses
 - Organizes Yearly Educational Symposium on different topics of interest for members.
 - Organizes Yearly Meeting for representatives of the Industry, Academia, Governmental institutions.



DISCREPANCIES

- For specializations:
 - Lack of professional recognition in private sector;
 - Lack of differentiated payment by the authorities or employers;
 - Demotivation of pharmacists.

- For long term programs:
 - Time consuming and intensive;
 - Depend on other institutions interest;
 - Not well promoted;
 - Lack of recognition and differentiated payment.

- For short term programs:
 - Time consuming and intensive;
 - Frequent changes in the topics.



THANK YOU

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