

## PROGRAMME SPECIFICATION

### **Bachelor Programme: Pharmacy**

**Academic Degree/Qualification:** Bachelor of Pharmacy (BPh)

Programme is provided by East European University which is authorized by the National Center for Education Quality Enhancement of Georgia. Consequently, academic degrees/qualifications awarded by East European University are recognized worldwide.

### **Programme Duration, Credits and Structure:**

Students should complete a minimum of 240 credits for the successful completion of the programme. 1 credit includes 25 astronomical hours. Programme consists of 4 academic years and each semester includes 19 weeks. 15 weeks are devoted to lectures and 4 weeks – to evaluation and examinations.

- **Basic courses – 95 cr.**
- **Branches – 92 cr.**
- **Clinical courses – 19 cr.**
- **Practice – 22 cr.**
- **Free Credit Courses – 12 ECTS**

**Language of Instruction:** English

### **Programme Aim:**

- Prepare bachelors in pharmacy with appropriate competences in liberal values, with ability to upgrade professionally and continue their studies to the next stage of learning and with the ability to be focused on practical activities. They will be able to provide qualified pharmaceutical assistance, to perform pharmaceutical analyses, to lead structural units in pharmaceutical institutions and to continue their studies at the higher level of education.
- Prepare competitive and highly qualified specialists, who have raised awareness in public health care politics and whose main skills and knowledge are based on thorough knowledge of pharmaceutical disciplines and harmonizing practical work;
- Equip students with knowledge appropriate for international medical-pharmaceutical standards and provide them with essential skills;
- Provide students with deep and thorough knowledge of fundamental and profiled subjects and help them acquire the practical skills how to implement their theoretical knowledge;

### **Programme Goal:**

*The educational program aims to provide students with the following knowledge:*

- To be able to connect processes and events happening in animate and inanimate nature; to organize and manage pharmaceutical assistance within society;
- To use modern methods of cognition -determining general and specific features of human psychics and, if necessary, affecting on it;

- To use foreign and Latin medical pharmaceutical technologies during professional relationship;
- To use mathematical methods while making professional decisions;
- To use knowledge while having normal and pathological cases according to basic physical, chemical, biological and physiological regularities;
- To use hardware-machines crucial for forming and analyzing substances and treating materials;
- While developing medical products, students will be able to identify the reaction between the structure of the compound and pharmacological action. They will also be able to identify reaction between the substance and the method of analyses.
- To use marketing methods for providing society with medicines;
- To obey moral and ethical principles of profession and legal obligations;
- To generate communication skills with patients, colleagues and society in order to achieve mutual understanding;
- To gain positive attitude towards learning;
- To accept the mechanisms guarantying the equality in accessibility of medical health care;
- To use the knowledge on medical products, on their forms, classification, pharmacokinetics and pharmacodynamics; on the indication, administration and contraindication of the medicine and on how to write a prescription;
- To study and analyze the results of laboratory and instrumental testing;
- To carry out sanitary-educational activities for the population; to lead pharmaceutical personnel;
- To deliver organizational -methodological meetings and seminars and work out methodological instructions;
- To have adequate reaction to pharmaceutical products and certifying them as major criteria of high-quality, cost-effective and safe provision of pharmaceutical products;
- To have management and administration skills for pharmaceutical organization and also to become a competitive candidate to obtain a job in a network of pharmacy, pharmaceutical factory, analytical laboratory or in a public service and to have an access to further career growth;
- To learn the registration of pharmaceutical products, turnover, quality control and promotion of regulatory and legal documents;

**Admission Requirements:** Unified National Exams for Georgian citizens (Foreign language – English), Exam or a document certifying the B2 level in English language, determined enrollment rules for citizens of foreign countries by Georgian legislation, Internal and external mobility according the legislation.

## Learning Outcomes:

<b>Knowledge and Understanding</b>	<p>After the completion of the program, a graduate:</p> <p><b><u>General/transerable competences</u></b></p> <ul style="list-style-type: none"><li>- has wide knowledge of field including critical attitude to theories and principles. Acknowledges complex issues of this sphere.</li></ul> <p><b><u>Branch competences:</u></b></p> <ul style="list-style-type: none"><li>- knows the structure of human organism, organ forms and organ systems. Cell integration and tissue formation, different tissue structural and functional organization, their origin. Basic biological processes going in human organism on molecular and cell level;</li><li>- knows regulations of molecular mechanisms of living processes, heritage and changeability during normal live-growing processes and their violation;</li><li>- knows the composition of basic classes of compounds in living organism, change of carbohydrate, proteins, lipids and other compounds, pathological processes;</li><li>- knows all chemical and pharmacology groups, mechanisms of their activity, pharmacology effects, ways of their introduction in the organism, biotransformation and elimination; basis of rational pharmacotherapy.</li><li>- knows morphological, physiological, biochemical facilities of micro-world (bacteria, fungus, viruses) and their interaction on human being, concretely on immune system;</li><li>- knows bases of creating safe surrounding for the health of human being;</li><li>- knows principles of pharmaceutical establishment and enterprise organization, bases of management of marketing economics;</li><li>- knows bases of biological, chemical, mechanical and physical analysis, processing and preparation of pharmaceutical production and materials;</li><li>- is able to work on principles of instruments and apparatus-machines applied during analysis and preparation of pharmaceutical products.</li><li>- knows the basic questions of mathematics;</li><li>- acknowledges physical, biochemical and pathological processes going in the organism and the importance and the role of biologically active substances;</li><li>- acknowledges the importance of keeping methods of standardization, analysis, keeping rules, processing, drying and preparation of pharmaceutical materials while making safe and effective pharmaceutical production of high quality under conditions of chemistry and enterprise;</li><li>- acknowledges the importance of fulfilling the demands defined by international standards in pharmaceutical practice, organizational structure of pharmaceutical institutions and the basis of marketing economics;</li><li>- acknowledges the general structure of pharmacy and the connection between its sub-branches;</li><li>- acknowledges the professional responsibility and the necessity to observe appropriate ethical norms.</li></ul>
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<b>Applying Knowledge</b>	<p>After the completion of the program, a graduate:</p> <p><b><u>General/transferable competences</u></b></p> <ul style="list-style-type: none"> <li>- is able to use several selected methods characteristic to this sphere in order to solve problems, carry out the projects of research or practical character in accordance with already defined instructions.</li> </ul> <p><b><u>Branch competences:</u></b></p> <ul style="list-style-type: none"> <li>- is able to make substances by standard methods and establishment of chemical analysis in practice;</li> <li>- is able to make natural (vegetative, animal and mineral) and synthetic material, processing and keeping;</li> <li>- is able to make biological and toxicological analysis of pharmaceutical production;</li> <li>- is able to produce extemporaneous curing means (in accordance with receipt) and serial production of pharmaceutical products (in accordance with regulations);</li> <li>- is able to define pharmaceutical production stability and state the terms of its validity;</li> <li>- is able to make control on the quality of material, substance and pharmaceutical production.</li> <li>- is able to make safe exploitation of instruments and apparatus-machines;</li> <li>- is able to find rational pharmacotherapy;</li> <li>- is able to lead structural units of pharmaceutical institutions;</li> <li>- is able to make mathematical model;</li> <li>- in case of urgent medical accidents is able to make the first medical help;</li> <li>- has ability to use state standard and normative-technical documentation;</li> <li>- is able to read, write, listen and speak in Georgian and foreign languages;</li> <li>- knows pharmaceutical and medical terminology;</li> <li>- is equipped with appropriate knowledge and practical skills;</li> <li>- can use abstract data to solve the problem under other's supervision;</li> <li>- can interpret the data.</li> </ul>
<b>Making Judgements</b>	<p>After the completion of the program, a graduate:</p> <p><b><u>General/transferable competences</u></b></p> <ul style="list-style-type: none"> <li>- is able to collect and explain data characterized for this sphere, also analysis of abstract data and/or situations by using standard and several selected methods, making well-grounded decision.</li> </ul> <p><b><u>Branch competences:</u></b></p> <ul style="list-style-type: none"> <li>- is able to think about factual data in the process of pharmaceutical activity and make decision, collecting the factual data causing existing problems, making decision on the base of logistic discussion and their stepping out in trained manner;</li> <li>- is able to conduct analyses independently using new and abstract data and situations with the help of standard or some new methods;</li> <li>- is able to make decision on reality and good quality of curing vegetative material by using the method of analyses.</li> <li>- has ability to collect, process and analyze the material characteristic for professional activity.</li> </ul>

Communications Skills	<p>After the completion of the program, a graduate:</p> <p><b><u>General/transferable competences</u></b></p> <ul style="list-style-type: none"> <li>- is able to make detailed written report about ideas, existing problems and the ways of their settlement and make oral report in Georgian and foreign languages for specialists and non-specialists; is able to use modern informational and communication technologies.</li> </ul> <p><b><u>Branch competences:</u></b></p> <ul style="list-style-type: none"> <li>- is able to have discussion and debates on professional issues with colleagues;</li> <li>- is able to give necessary information to the customer;</li> <li>- can use digital technology to support and enhance the effectiveness of professional activities.</li> <li>- is able to get new professional material and make presentation for colleagues and customers in Georgian and foreign languages as well;</li> <li>- has ability to work individually and in a team as well;</li> </ul>
Learning Skills	<p>After the completion of the program, a graduate:</p> <p><b><u>General/transferable competences</u></b></p> <ul style="list-style-type: none"> <li>- is able to assess his/her own process of studying successively and in many respect, setting necessities of further studying.</li> </ul> <p><b><u>Branch competences:</u></b></p> <ul style="list-style-type: none"> <li>- has ability to study aiming at professional and career growth;</li> <li>- has ability to study on the further stage;</li> <li>- is able to manage their own learning process using a wide range of resources</li> <li>- has ability to study planning and selection of educational components independently.</li> </ul>
Values	<p>After the completion of the program, a graduate:</p> <p><b><u>General/transferable competences</u></b></p> <ul style="list-style-type: none"> <li>- participates in the process of value formation and aspires their introduction.</li> </ul> <p><b><u>Branch competences:</u></b></p> <ul style="list-style-type: none"> <li>- contributes to the professional community with practically active involvement, sharing ideas and outcomes;</li> <li>- shows attitude of respect for others' opinions and characteristics;</li> <li>- acknowledges educational problems in multicultural context;</li> <li>- respects history, culture and traditions of his/her native country;</li> <li>- has ability of using and protecting legal principles and ethics in pharmaceutical practice;</li> <li>- develops values of professional honesty, responsibility of carrying out activities in high quality;</li> <li>- protects the interests of customers;</li> <li>- has consciousness of safe liabilities and environment protection.</li> </ul>

**Teaching and learning methods:** To achieve the learning outcomes of the programme, teaching and learning methods such as lectures, seminars and working groups are used: verbal or oral method, induction, deduction, analysis and synthesis, group work, role-playing and situational games, discussion / debate, explanation method, demonstration method, action-oriented teaching, etc.

**Practical methods** – During the process of study and especially during laboratory lessons student is making technology processes independently by using appropriate

**Discussion/debates** – one of the widely spread method of interactive studying. The process of discussion raises the quality of participation and activity of students. This process isn't limited only to questions asked by professor. This method develops the ability of conformation ones' own idea and discussion.

**Collaborative work** – studying by this method means dividing groups and giving tasks to them, the members of the group individually think about issue and share information with other members. Due to the goal set there is possibility to share functions among the members during the process of study that provides maximum attendance of all students in the process of study.

**Demonstrative method** – this method means visual presentation of information. From the standpoint of reaching result, it is quite effective, demonstration of material to be studied is possible by teacher and student as well. This method helps us to make the perception of different stage of educational material more significant. Say concretely, what student should do all alone. Demonstration may carry simple image or take such difficult face as carrying out multistep experiment.

**Method of explaining** – is based on discussion around the given issue, while reporting the material, professor is giving a concrete example that is discussed in detail in the frame of given theme.

**Activity oriented studying** – demands active attraction of student and professor in the process of study, where practical interpretation of theoretical material takes special loadings.

**Verbal or oral method** – presentation of new material orally by using multimedia or without it, by animation showing of apparatus-machines and technology processes. During the process of study there are used: interactive technologies, method of analysis and synthesis, method of explanation, problematic lection – introduction of material in the regime “menology - dialogues” and others.

**Writing method** – During the process of study and especially during laboratory lessons students are able to make writings about the ways of solving objectives of concrete situation in the forms of made records.

apparatus-machines.

- ✓ Interactive Lectures
- ✓ Visual Lectures / Laboratory
- ✓ Workbook methods
- ✓ Explanatory method Literature Overview
- ✓ Relevant material search out from various electronic and paper-based resources
- ✓ Written work methods
- ✓ Problem Based Learning

...and other different methods according specifics of the course

**Assessment System:** To assess students performance midterms and final exams are used. 100 points is the maximum score for each course. Points given to final exam could be between 30 and 40 and it should be held in a written or combined written (oral and written) manner. On final exam only students who can score a minimum of 51 points are admitted, considering the midterm and maximum point of the final exam.

## Grading Scale:

Letter Grade	Value	Interpretation
A	91 – 100	Excellent
B	81 – 90	Very Good
C	71 – 80	Good
D	61 – 70	Satisfactory
E	51 – 60	Passing
FX	41 – 50	Unsatisfactory
F	0 – 40	Failed

Grading policy for individual courses are given in the syllabi.

**Exchange Programmes:** Successful students will take part in international exchange programs with the partner universities, London School of Business and Finances (UK) and Turiba University (Latvia).

## Employment:

### Areas of professional activities for the graduates:

- The provision of the population with effective and safe medicine;
- Medical Institutions (clinic, hospital et.)
- Drug production according to necessity and its serial production Drug quality control;
- Drug quality control;
- Medicinal herbal raw material production;
- Carrying our scientific-research work according to their specialty;

### Graduates Employment spheres:

- Health care service;
- Pharmaceutical institutions (various types of property – pharmaceutical manufacture, base units, drug stores, laboratories and etc.);
- Governmental structures;
- Shop of medicinal production and chemical reagents;
- Drug quality control laboratory;
- Toxicological laboratory and chemical forensic expertizing;
- Psychotropic and narcotic drug laboratories;
- Scientific -research institutions aiming at natural and synthetic compounds, their standardization, biopharmaceutical and pharmacokinetic studies, conducting market research and also analyzing the provision of the population with medicines;

**A graduate is to:**

- provide the population and medical institutions with medicinal facilities and other sick care items;
- Bachelor of Pharmacy - has the right to work independently at profilled learning and scientific research institutions, in pharmacies and pharmacy bases at the initial positions.

***Employment spheres***

- Pharmacist can use the knowledge and skills at scientific - research institutions, the pharmaceutical industry, drug quality control and toxicological laboratory, chemical forensic expertizing, pharmaceutical bases, open and closed type of drug stores and also at the institutions of chemical reagents and medical equipment.

**Post-Graduate studies:** After the completion of the programme graduates will be able to apply for Master/Graduate Programmes not only in the field of Pharmacy, but in any other field, considering admission rules and regulations defined by the relevant Master/Graduate Programme and legislation of the selected country.

**Programme Infrastructure:** Modern lecture and seminar rooms equipped with computers and projectors, conference halls, library, copying machine, computer labs with free access to the computers, free wi-fi service, sport and dining facilities are at students disposal. Library of the university is equipped with all compulsory literature and electronical resources defined by the syllabi.

**Programme Human Resources:** Recognized professionals, highly qualified and experienced academic staff, professors, associate and assistant professors, lecturers of different generations are involved in teaching.

**Programme Coordinator:** Assoc. Professor Dr. Nato Alavidze

**Contact Information:** [info@eeu.edu.ge](mailto:info@eeu.edu.ge)

**Website:** <http://eeu.edu.ge/eng/home>



## Study Plan – Bachelor Programme “Pharmacy”

(I-VI Semester)

№	Course	cont hours in week	Credits Number	The number of hours					Semesters								preconditions	Lecturer/Lecturers (Consultation hours are defined by the consultation)
				Total	contact.	lectures/practical/gr. work/laboratories	Midterm and final exam time	independent	I	II	III	IV	V	VI	VII	VIII		
<b>I - semester</b>																		
1	Professional Latin Terminology	2	3	75	30	0/28	2	45	3									
2	Basics of higher mathematics, statistics and information technologies	4	5	125	59	14/42	3	67	5									
3	General and non-organic chemistry	4	6	150	58	28/28	2	92	6									
4	Medical Biology	2	3	75	30	14/14	2	45	3									
5	Human Anatomy 1	2	3	75	30	14/14	2	45	3									
6	History of Pharmacy	2	2	50	30	14/14	2	20	2									
7	Essentials of Histology	2	3	75	30	14/14	2	45	3									
8	Foreign Language - 1 (Georgian)	4	5	125	59	0/56	3	66	5									
		<b>22</b>	<b>30</b>	<b>750</b>	<b>326</b>		<b>18</b>	<b>425</b>	<b>30</b>									
<b>II - semester</b>																		
9	Foreign Language - 2 (Georgian)	4	5	125	59	0/56	3	66		5							8	
10	Medical Physics and Biophysics	2	3	75	30	14/14	2	45		3								
11	Basics of Molecular Genetics	2	3	75	30	14/14	2	45		3							4	
12	Human Physiology - 1	2	3	75	30	14/14	2	45		3								
13	Botanic - 1	3	4	100	44	14/28	2	56		4								

14	Human Anatomy - 2	2	3	75	30	14/14	2	45		3							5
15	Organic Chemistry - 1	3	4	100	44	14/28	2	56		4							3
16	First Aid Skills	2	3	75	30	0/28	2	45		3							
17	Bioethics	2	2	50	30	14/14	2	20		2							
		<b>22</b>	<b>30</b>	<b>750</b>	<b>327</b>		<b>19</b>	<b>423</b>		<b>30</b>							
<b>III - semester</b>																	
18	Human Physiology - 2	2	3	75	30	14/14	2	45		3							12
19	Basics of Hygiene in Pharmacy	2	3	75	30	14/14	2	45		3							
20	Medical Microbiology and virusology	3	5	125	44	14/28	2	81		5							11
21	Organic Chemistry - 2	3	4	100	44	14/28	2	56		4							15
22	Analitical Chemistry	4	6	150	59	28/28	3	91		6							15
23	Botanic - 2	3	4	100	44	14/28	2	56		4							13
24	General Biochemistry	3	5	125	44	14/28	2	81		5							3, 15
		<b>20</b>	<b>30</b>	<b>750</b>	<b>295</b>		<b>15</b>	<b>478</b>		<b>30</b>							
<b>IV - semester</b>																	
25	Pharmacognozy - 1	<b>3</b>	<b>5</b>	125	44	14/28	2	81		5							23
26	Phizical and coloidal chemistry	3	5	125	45	14/28	3	80		5							21
27	Instrumental methods of analisys	3	5	125	44	14/28	2	81		5							22
28	Pathology	4	5	125	59	28/28	3	66		5							18
29	General Medicine and basics of diagnostic	3	4	100	45	14/28	3	55		4							18
30	Health Care Management	2	3	75	31	14/14	3	44		3							16, 17
31	General Immunology	2	3	75	31	14/14	3	44		3							20

		20	30	750	299		19	451				30						
V - semester																		
32	Pharmaceutical Technology - 1 (galenuri preparations)	4	6	150	58	28/28	2	92					6				26	
33	Pharmavognosy -2	4	5	125	44	14/28	2	81					5				25	
34	Pharmaceuical Chemistry -1	4	5	125	44	14/28	2	81					5				21, 22	
35	Pharmacology 1	3	4	100	44	14/28	2	56					4				18, 24	
36	Socail Pharmacy - 1 (Pharmaceutical Organization and Economics)	3	4	100	45	14/28	3	55					4				1,6,17,30	
37	Free Credit Courses - 1	3	6	150	44	14/28	2	106					6					
		21	30	750	279		13	471					30					
VI - semester																		
38	Pharmaceutical Technology - 2 (Technology of ready medicine formation)	5	7	175	72	28/42	2	103					7				32	
39	Pharmaceutical chemistry - 2	5	6	150	59	28/28	2	91					6				34	
40	Principles of Pharmaceutical Management and Marketing	2	3	75	31	14/14	3	44					3				36	
41	Pharmacology - 2	3	4	100	44	14/28	2	56					4				35	
42	Socail Pharmacy -2 (Pharmaceutical Organization and Economics)	3	4	100	45	14/28	3	55					4				37	
43	Free Credit Courses - 2	2	6	150	44	14/28	2	106					6					
		20	30	750	295		14	455					30					
VII- semester																		
44	Pharmaceutical Care	3	4	100	45	14/28	3	55						4			29, 30, 41, 42	
45	Clinical Pharmacy	4	6	150	59	28/28	3	91						6			41, 42	
46	Pharmacotherapy	4	6	150	59	28/28	3	91						6			41	
47	Toxicological chemistry	4	6	150	58	28/28	2	92						6			39	

48	Pharmaceutical biotechnology	3	5	125	44	14/28	2	81							5		11, 38	
49	Pharmaceutical information	2	3	75	30	14/14	2	45							3		40, 42	
		20	30	750	295		15	455							30			
<b>VIII- semester</b>																		
50	Standardization of pharmaceutical products and quality control	3	4	100	44	14/28	2	56							4		38, 39	
51	Basics of Pharmacokinetics	3	4	100	45	14/28	3	55							4		41, 46	
	<b>Practice - in Pharmacy - 22 kr.</b>																	
52	Pharmaceutical care	6	6	150	88	0/84	4	62							6		44	
53	Pharmaceutical technologies	6	6	150	88	0/84	4	62							6		38, 48	
54	Pharmaceutical analysis	6	6	150	88	0/84	4	62							6		39	
55	Clinical Pharmacy	4	4	100	60	0/56	4	40							4		45	
		28	30	750	413		21	337							30			
<b>Total</b>			<b>240</b>															
<i>Used - hours per week, l / Pr - Lecture / practical; preconditions - in line with the number - sequential number of the course;</i>																		

Chart of competences – Bachelor program “Pharmacy”

Course	Knowledge and understanding	Ability to use knowledge in practice:	Conclusions	communication skill:	Ability to study	Values
Professional Latine Terminology	x	x		x		
Basics of higher mathematics, statistics and information	X	x		x	x	
General and non-organic chemistry	x	x	x	x	x	X
Medical Biology	X	x		x		
Human Anatomy 1	x	x	x		X	
History of Pharmacy	X	x	x	x	x	
Essentials of Histology	x	x	x			
Foreign Language - 1 (Georgian)	x	x		x	X	
Foreign Language - 2 (Georgian)	X	x		x	x	
Medical Phisics and Biophysics	x	x	x			
Basics of Melecular Genetics	x	x	x		x	
Human Physiology - 1	x	x	x	X		
Botanic - 1	x	x		x	x	
Human Anatomy - 2	x	x	x		x	
Organic Chemistry - 1	x	x	x	x	x	x
first aid skills	x	x	x	x		
Bioethics	x	x		x		x
Normal Physiology - 2	x	x	x	x		
Basics of Hygiene in Pharmacy	x	x			x	
Medical Microbiology and virusology	x	x	x			
Organic Chemistry - 2	x	x	x	x	x	x
Analitical Chemistry	x	x	x	x	x	
Botanic - 2	x	x		x	x	
General Biochemistry	x	x	x			

Pharmacognozy - 1	X	X		X	X	
Phizical chemistry	X	X		X	X	
Instrumental methods of analisys	X	X	X	X	X	
Pathology	X	X	X			
General Medicine and basics of diagnostic	X	X	X	X		
Health Care Management	X		X	X	X	X
General Immunology	X	X	X	X	X	X
Pharmaceutical Technology - 1 (galenuri preparations)	X	X	X	X	X	X
Pharmavognosy -2	X	X		X	X	
Pharmaceutical Chemistry -1	X	X	X	X	X	
Pharmacology 1	X	X	X	X	X	X
Socail Pharmacy - 1 (Pharmaceutical Organization and Economics)	X	X	X	X	X	X
Pharmaceutical Technology - 2 (Technology of ready medicine formation)	X	X	X		X	X
Pharmaceutical chemistry - 2	X	X	X			
Principles of Pharmaceutical Management and Marketing	X	X	X	X	X	X
Pharmacology - 2	X	X	X	X	X	X
Socail Pharmacy -2 (Pharmaceutical Organization and Economics)	X	X	X	X	X	X
Pharmaceutical Care	X	X	X	X	X	X
Clinical Pharmacy	X	X	X	X	X	X
Pharmacotherapy	X	X	X	X	X	X
Toxicological chemistry	X	X	X	X	X	
Pharmaceutical biotechnology	X	X	X	X	X	X
pharmaceutical information	X	X	X	X	X	X
Standardization of pharmaceutical products and	X	X	X	X	X	X
Basics of Pharmacokinetics	X	X			X	
Practice - Pharmaceutical care	X	X	X	X	X	X
Practice - Pharmaceutical technologies	X	X	X	X	X	X
Practice - Pharmaceutical analysis	X	X	X	X	X	
Practice - Clinical Pharmacy	X	X	X	X	X	X