

**I. HORBACHEVSKY TERNOPIL NATIONAL MEDICAL UNIVERSITY
OF THE MINISTRY OF HEALTH OF UKRAINE**

Curriculum

Specialty 226 «Pharmacy. Industrial pharmacy» Specialization “Pharmacy”

1-st year of study

Academic disciplines	Number of credits	Number of academic hours					I semester						II semester					
		Number of academic hours	Lectures	Seminars	Practical classes	Students individual work	Including			Students individual work	Forms of control		Including			Students individual work	Forms of control	
							Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit	Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit
English language	3,0	90			50	40			20	18		pass			30	22		*/
Ukrainian language for Professional Purposes	3,0	90			30	60									30	60		/*
History of Ukraine and Ukrainian culture	3,0	90	20	10		60	6	4		24		pass	14	6		36		*/
Latin language	3,0	90			60	30			26	14		pass			34	16	*	
Philosophy	3,0	90	20	20		50	20	20		50		/*						
Biology with Fundamentals of Genetics	4,0	120	20		50	50	20		50	50		/*						
Biological physics with Physical Methods of Analysis	4,5	135	20		60	55												
Biological physics	3,0	90	14		40	36	2		4	16		pass	12		36	20		/*
Physical Methods of Analysis	1,5	45	6		20	19	2		4	9	*		4		16	10		
High Mathematics and Statistic	3,5	105	20		50	35	20		50	35		/*						

Human anatomy and physiology	5,0	150	32		68	50												
Human anatomy	2,0	60	16		24	20	2		4	8		pass	14		20	12		/*
Physiology	3,0	90	16		44	30	2		4	14			14		40	16		
Ethics and Deontology in Pharmacy	3,0	90	10	30		50							10	30		50		/*
Introduction to Pharmacy	3,0	90	20	20	20	30	20	20	20	30		/*						
General and Inorganic Chemistry	7,0	210	30		80	100	12		32	40		pass	18		48	60		*
Elective courses:	15,0	450	30		120	300												
Bioethics	3,0	90	6		24	60							6		24	60		/*
Biogenic elements	3,0	90	6		24	60							6		24	60		/*
Religious Studies	3,0	90	6		24	60							6		24	60		/*
Modern civilization and culture	3,0	90	6		24	60							6		24	60		/*
Medical parasitology	3,0	90	6		24	60							6		24	60		/*
Bioactivity of inorganic compounds	3,0	90	6		24	60							6		24	60		/*
Philosophy of Health	3,0	90	6		24	60							6		24	60		/*
Academic writing	3,0	90	6		24	60							6		24	60		/*
Environment and Health	3,0	90	6		24	60							6		24	60		/*
Basics of Sociological Research	3,0	90	6		24	60							6		24	60		/*

Physical Education		160		30		130		14		60		pass		16		70		pass
Total	58,5	1800,0	222,0	80,0	588,0	910,0	106,0	44,0	214,0	308,0			116,0	36,0	374,0	602,0		

NOTE: To complete the curriculum, the student must choose 5 (five) elective courses (15 credits)

pass - ; */ - credit; /* - differential exam; * - exam

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Specialty 226 «Pharmacy. Industrial pharmacy» Specialization “Pharmacy”

2-st year of study

Academic disciplines	Number of credits	Number of academic hours					I semester						II semester					
		Number of academic hours	Lectures	Seminars	Practical classes	Students individual work	Including			Students individual work	Forms of control		Including			Students individual work	Forms of control	
							Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit	Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit
English language for Professional Purposes	3,0	90			30	60			30	60		/*						
Physical and Collodial Chemistry	4,0	120	30		60	30	16		30	15		pass	14		30	15		/*
Information Technology in Pharmacy	5,0	150	10		60	80	10		60	80		/*						
Pathological Physiology	5,0	150	20		60	70	10		30	30		pass	10		30	40	*	
Pharmaceutical Botany	5,0	150	14		70	66	8		34	36		pass	6		36	30	*	
Microbiology with Fundamentals of Immunology	5,0	150	20		66	64							20		66	64	*	
Hygiene and Ecology in Pharmacy	3,0	90	10		30	50							10		30	50		*/
Organic Chemistry	8,0	240	30		120	90	14		60	40		pass	16		60	50	*	
Analytical Chemistry	8,0	240	30		120	90	14		60	40		pass	16		60	50	*	
First Pre-Hospital Aid with Introductory Practical Training	3,0	90	10		40	40	10		20	30		pass			20	10		*/

Practical Training in Pharmaceutical Botany	3,0	90			30	60								30	60		/*	
Elective courses:	8,0	240	20		60	160												
Bases of Chemical Metrology	4,0	120	10		30	80	4		14	40			6		16	40		*/
Psychology of communication. Basics of consumer behavior	4,0	120	10		30	80	4		14	40			6		16	40		*/
Pharmaceutical Aspects Alcoholism, Substance Abuse and Addiction	4,0	120	10		30	80	4		14	40			6		16	40		*/
Pharmacist's communication skills	4,0	120	10		30	80	4		14	40			6		16	40		*/
Physical Education		160		30		130		30		130		*/						
Total	60,0	1960,0	194,0	30,0	746,0	990,0	90,0	30,0	352,0	541,0			104,0		394,0	449,0		

NOTE: To complete the curriculum, the student must choose 2 (two) elective courses (8 credits)

pass - ; */ - credit; /* - differential exam; * - exam

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3 year of study

Academic disciplines	Number of credits	Number of academic hours					I semester						II semester					
		Number of academic hours	Lectures	Seminars	Practical classes	Students individual work	Including			Students individual work	Forms of control		Including			Students individual work	Forms of control	
							Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit	Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit
Technology of Drugs	6,0	180	20		90	70	10		40	35		pass	10		50	35	*	
Pharmaceutical Chemistry	6,0	180	20		90	70	10		40	40		/*	10		50	30	pass	
Pharmacognosy	8,5	255	30		140	85	10		60	35		pass	20		80	50	*	
Biological Chemistry	6,0	180	40		60	80	40		60	80	*							
Computer Modelling in Pharmacy	3,0	90	4		36	50	4		36	50		/*						
Pharmacology	8,5	255	30		140	85	10		60	30		pass	20		80	55	*	
Pharmaceutical Law and Legislation	3,0	90	20		30	40	20		30	40		*/						
Emergency Medicine	3,0	90	10		20	60							10		20	60		*/
Pre – Hospital Help in Emergencies		50			30	20						pass			30	20		/*
Ukrainian Language		40			20	20			20	20		/*						

Elective courses:	12,0	360	30		90	240												
Physico-chemical analysis in drug development	4,0	120	10		30	80	4		14	40		pass	6		16	40		*/
Technology of homeopathic medicines	4,0	120	10		30	80	4		14	40		pass	6		16	40		*/
Factors and mechanisms of pharmaceutical activity and toxicity of medications on the stages of pharmacokinetics	4,0	120	10		30	80	4		14	40		pass	6		16	40		*/
Technology of Extemporaneous Medicinal and Cosmetic Preparations	4,0	120	10		30	80	4		14	40		pass	6		16	40		*/
Theoretical basis of Synthesis	4,0	120	10		30	80	4		14	40		pass	6		16	40		*/
English language for Professional Purposes	4,0	120			40	80			18	40		pass			22	40		*/
Unified State Qualification Exam Krok-1		30				30										30		
Total	59,0	1800,0	204,0		746,0	850,0	116,0		388,0	450,0			88,0		358,0	400,0		

NOTE: To complete the curriculum, the student must choose 3 (three) elective courses (12 credits)

pass - ; */ - credit; /* - differential exam; * - exam

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4 year of study

Academic disciplines	Number of credits	Number of academic hours					I semester						II semester					
		Number of academic hours	Lectures	Seminars	Practical classes	Students individual work	Including			Students individual work	Forms of control		Including			Students individual work	Forms of control	
							Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit	Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit
Pharmaceutical Chemistry	4,0	120	20		72	28	10		36	14	*		10		36	14		pass
Clinical Pharmacy and Pharmaceutical Care	6,0	180	20		84	76							20		84	76		pass
Technology of Drugs	6,0	180	20		84	76	10		42	38		pass	10		42	38	*	
Management and Marketing in Pharmacy	3,0	90	10		42	38							10		42	38		pass
Organization and Economics in Pharmacy	6,0	180	30		90	60	16		30	20		pass	14		60	40	*	
Pharmacotherapy with Pharmacokinetics	3,0	90	10		30	50	10		30	50	*							
Toxicological and Forensic Chemistry	4,0	120	20		72	28	10		30	10		pass	10		42	18		/*
Pharmaceutical and medical commodity science	4,0	120	20		30	70	20		30	70		/*						
Medical Toxicology	3,0	90	10		30	50	10		30	50		*/						
Practical Training in Pharmacognosy	3,0	90	6		24	60	6		24	60		*/						

Elective courses:	15,0	450	36		108	306												
Phytotherapy	5,0	150	12		36	102	6		16	46		pass	6		20	56		*/
Side effects of drugs	5,0	150	12		36	102	6		16	46		pass	6		20	56		*/
Intellectual property and international marketing in pharmacy	5,0	150	12		36	102	6		16	46		pass	6		20	56		*/
Experiment design in pharmaceutical development	5,0	150	12		36	102	6		16	46		pass	6		20	56		*/
Nutritiology	5,0	150	12		36	102	6		16	46		pass	6		20	56		*/
Management of innovative activity, labor resources and logistics in pharmacy	5,0	150	12		36	102	6		16	46		pass	6		20	56		*/
Interaction of drugs	5,0	150	12		36	102	6		16	46		pass	6		20	56		*/
Total	60,0	1800,0	202,0	30,0	666,0	902,0	110,0		300,0	450,0			92,0	30,0	366,0	452,0		

NOTE: To complete the curriculum, the student must choose 3 (three) elective courses (12 credits)

pass - ; */ - credit; /* - differential exam; * - exam

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5 year of study

Academic disciplines	Number of credits	Number of academic hours					I semester						II semester					
		Number of academic hours	Lectures	Seminars	Practical classes	Students individual work	Including			Students individual work	Forms of control		Including			Students individual work	Forms of control	
							Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit	Lectures	Seminars	Practical classes		Exam	Credit/ diff. credit
Pharmaceutical Chemistry	3,0	90	10		42	38	10		42	38	*							
Occupational Safety in Pharmacy	3,0	90	20		30	40							20		30	40		*/
Management and Marketing in Pharmacy	3,0	90	10		42	38	10		42	38	*							
Biopharmacy	3,0	90	10		30	50	10		30	50		*/						
Clinical pharmacy and pharmaceutical care	3,0	90	10		42	38	10		42	38	*							
Pharmaceutical biotechnology	3,0	90	20		30	40	20		30	40		*/						
Social pharmacy	3,0	90	10		30	50							10		30	50		*/
Resource Studies of Medicinal Plants	3,0	90	10		42	38	10		42	38		*/						
Standartization of Medecines	3,0	90	10		42	38	10		42	38		/*						
Cosmetic Products Technology	3,0	90	10		30	50							10		30	50		*/

Practical Training by specialization of choice:	25,0	750			252	498												
Pharmaceutical chemisrty	12,5	375			126	249								126	249			/*
Clinical Pharmacy	12,5	375			126	249								126	249			/*
Organization and economy in pharmacy	12,5	375			126	249								126	249			/*
Pharmaceutical technology	12,5	375			126	249								126	249			/*
Elective specializations:	6,0	180			60	120												
Elective in Pharmaceutical chemisrty	3,0	90			30	60								30	60			*/
Elective in Clinical Pharmacy	3,0	90			30	60								30	60			*/
Elective in Organization and economy in pharmacy	3,0	90			30	60								30	60			*/
Elective in Pharmaceutical technology	3,0	90			30	60								30	60			*/
Atestation		30				30									30			
Total	61,0	1830,0	120,0		672,0	1038,0	80,0		270,0	280,0			40,0	402,0	788,0			

NOTE: To complete the curriculum, the student must choose 2 (two) internships in the specialization (25 credits) and 2 (two) electives in the specializations that were not selected (6 credits).

pass - ; */ - credit; /* - differential exam; * - exam