



### CALENDAR-THEMATIC PLAN OF LECTURES

on **Industrial technology of drugs** for the 4 year  
in specialty **226 Pharmacy and industrial pharmacy** group  
ФМ20(4.10Д)англ-01-06  
(*Autumn Semester, 2023-2024 academic year*)

No.	Date	Lesson Name	Volume in hours	Lecturer
<b>MODULE 1. PRODUCTION OF EXTRACTIVES. PRODUCTION OF PARENTERALS</b>				
1	06.09	Organizational, legal and ethics aspects of production of drugs. Organization of drugs production. Requirements of GMP. Reference documentation in the production of medications. Grinding, screening and mixing of powder materials for drugs production.	2	assoc. prof. Dmytro SOLDATOV
2	13.09	Extractive preparations. Bases of extracting. Stages of extracting process. Factors effect on the extracting process. Alcoholmetry.	2	assoc. prof. Dmytro SOLDATOV
3	20.09	Tinctures. Determination. Production. Quality control. Liquid Extracts. Determination. Production. Test.	2	assoc. prof. Dmytro SOLDATOV
4	27.09	Dense and dry Extracts. Determination. Production. Test.	2	assoc. prof. Dmytro SOLDATOV
5	04.10	GMP in production of parenteral dosage forms.	2	assoc. prof. Dmytro SOLDATOV
6	11.10	Preparations for parenteral application. Requirements to production. Ampoule glass	2	assoc. prof. Dmytro SOLDATOV
7	18.10	Manufacture of injection solution. Quality control. Water for injections. Manufacture of solution for injections with stabilization. Methods of stabilization. Aseptic prepared solutions for injections	2	assoc. prof. Dmytro SOLDATOV
8	25.10	Non-aqueous solutions for parenteral application. Production of infusion solutions. Test. Improvement of ophthalmological and otolaryngological drugs technology.	2	assoc. prof. Dmytro SOLDATOV
<b>Total:</b>			16	

*Note:* the lecture takes place on Wednesday at 10:25 in the classroom No online  
( day of the week) (time) (classroom number)

Head of the Departmen,  
Professor

Oleksandr KUKHTENKO



## CALENDAR-THEMATIC PLAN OF LABORATORY LESSONS

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ФМ20(4,10Д)АНГЛ-01-06  
(*Autumn Semester, 2023-2024 academic year*)

No.	Date	Lesson Name	Volume in hours Type of activity	Knowledge assessment system, points	
				min	max
<b>CONTENT MODULE 1. PRODUCTION OF EXTRACTIVES</b>					
1	04.09-08.09	Reference documentation, material balance, technological flow-chart	3	3	5
2	11.09-15.09	Alcoholometry. Theoretical bases of extraction	3	3	5
3	18.09-22.09	Bases of extracting. Stages of extracting process. Factors effect on the extracting process.	3	3	5
4	25.09-29.09	Production of tinctures. Technological flow-chart. Equipment. Technological process. Quality control.	3	3	5
5	02.10-06.10	Production of liquid extracts. Stages of technological process. Equipment, flow-chart. Quality control.	3	3	5
6	09.10-13.10	Production of dense extracts. Technological process. Equipment. Technological flow-chart. Quality control.	3	3	5
7	16.10-20.10	Production of dry extracts. Technological process. Equipment. Technological flow-chart. Quality control.	3	3	5
8	23.09-27.10	Recuperation of extractants from spent raw materials	3	3	5
9	30.10-03.11	<i>Final test of CM 1 assimilation</i>	3	6	10
<b>Total from CM 1:</b>				<b>30</b>	<b>50</b>
<b>CONTENT MODULE 2. PRODUCTION OF PARENTERALS</b>					
10	06.11-10.11	GMP in production of parenteral dosage forms.	3	3	5
11	13.11-17.11	Composition of ampoules glass. Determination of basic indexes of quality of ampoules glass.	3	3	5
12	20.11-24.11	Solutions for injection. Water for injection production. Equipment. Technological flow-chart. Quality control.	3	3	5
13	27.11-01.12	Production of injection solution required special purification, stabilization. Aseptically prepared medicines.	3	3	5
14	04.12-08.12	Non-aqueous solutions. Infusion solutions. Equipment, flow-chart. Quality control	3	3	5
15	11.12-15.12	Ophthalmic dosage forms. Stages of technological process. Equipment. Technological flow-chart. Quality control.	3	3	5
16	18.12-22.12	Production of dosage forms for nose and ears. Equipment, flow-chart. Quality control. Radiopharmaceuticals. Formulation. Storage. Good radiation practice	3	3	5
17	08.01-12.01	Final test of CM 2 assimilation	3	3	5
<b>Total from CM 2:</b>				<b>30</b>	<b>50</b>
18	15.01-19.01	<i>Semester credit of the module 1: "Production of extractives. Production of parenterals"</i>	3		
<b>THE WHOLE AMOUNT OF HOURS FOR THE MODULE 1</b>			<b>54</b>	<b>60</b>	<b>100</b>

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on **Industrial technology of drugs** for the 4 year  
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ФМ20(4.10Д)англ  
(*Spring Semester, 2023-2024 academic year*)

No.	Date	Lesson Name	Volume in hours	Lecturer
<b>MODULE 1. PRODUCTION OF EXTRACTIVES. PRODUCTION OF PARENTERALS</b>				
1	according to schedule	Solid dosage forms. Powders. Granules. Determination. Technology. Quality control. Marking. Packing. Physical, chemical and technological properties of powders. Tablets. Classification. Determination. Excipients in the production of solids. Biopharmaceutical aspects of solid dosage forms. Theoretical bases of tableting. Flow-chart of technological process of tablets production by methods: direct compression, with previous granulation.	1	assoc. prof. Dmytro SOLDATOV
2	according to schedule	Coated tablets. In-process control. Quality control. Production of prolong solids. Pellets Capsules. Classification of capsules. Determination. Production. In-process control. Quality control. Improvement of technology. Capsules retard, tubatines, spansulas.	1	assoc. prof. Dmytro SOLDATOV
3	according to schedule	Microcapsules. Classification. Determination. Production. In-process control. Quality control. Emulsions and suspensions. Classification. Determination. Production. In-process control. Quality control.	1	assoc. prof. Dmytro SOLDATOV
4	according to schedule	Semisolids for topical application. Ointments. Creams. Gels. Pastes. Liniments. Determination. Classification. Specific requirements. Production. In-process control. Quality control. Rectal dosage forms. Classification. Production. In-process control. Quality control. Improvement of rectals technology.	1	assoc. prof. Dmytro SOLDATOV
5	according to schedule	Pressured dosage forms. Classification. Aerosols. Sprays. Production. Quality control. New types of packaging for aerosols. Theoretical and practical aspects of drugs production. New pharmaceutical technologies. Third and fourth generation of drugs. Therapeutic systems and prospects of their development.	1	assoc. prof. Dmytro SOLDATOV
<b>Total:</b>			10	

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ФМ20(4,10д)АНГЛ

(*Spring Semester, 2023-2024 academic year*)

No.	Date	Lesson Name	Volume in hours Type of activity	Knowledge assessment system, points	
				min	max
<b>THEMATIC MODULE 3. PRODUCTION OF SOLIDS</b>					
1	according to schedule	Study of physical and chemical and technological properties of powders and granules. Excipients in solid dosage forms. Theoretical bases of tableting.	3	5	7
2	according to schedule	Tablets as dosage forms. Types of tablets. Tableting by direct compression. Flow-chart of production, equipment.	3	4	7
3	according to schedule	Tableting with previous granulation. Methods of granulation. Flow-chart of production, equipment.	3	4	7
4	according to schedule	Coating of tablets. Types of coats and methods of coating. Compressed coats. Dragee and Film coatings. Tablets with prolonged action, excipients.	3	4	7
5	according to schedule	Granules. Dragee. Quality control of solid dosage forms. Capsules. Methods of production of soft and hard gelatinous capsules, their filling. Quality control. Microcapsules. Microdragee. Tubatines. Spansules. Rectal gelatinous capsules.	3	4	7
6	according to schedule	<i>Final test of CM 3 assimilation</i>	3	9	15
<b>Total for CM 3:</b>				<b>30</b>	<b>50</b>
<b>THEMATIC MODULE 4. PRODUCTION OF SEMISOLIDS, SUPPOSITORIES, AEROSOLS</b>					
7	according to schedule	Semisolid dosage forms. Requirements, classification of bases and general requirements. Flow-chart of semisolids production, equipment. Control of quality	3	5	7
8	according to schedule	Rectal dosage forms. Suppositories, classification and requirements. Description of bases and excipients. Methods of production. Flow-chart of production, equipment, quality control.	3	4	7
9	according to schedule	Classification and characteristics of aerosols. Basic components of aerosol packaging, types of valvular-nebulizing systems, classification of propellants. Equipment, quality control.	3	4	7
10-11	according to schedule	Pharmaceutical solutions. Syrups. Fragrant waters	4	4	7
12	according to schedule	Theoretical and practical aspects of drugs production. New pharmaceutical technologies. Generations of drugs. Therapeutical systems and prospects of their development.	3	4	7
13	according to schedule	<i>Final test of CM 4 assimilation</i>	3	9	15
<b>Total from CM 4:</b>				<b>30</b>	<b>50</b>
14	according to schedule	<b>Semester credit of the module 2: "Production of solids. Production of semisolids, suppositories, aerosols"</b>	3		
<b>THE WHOLE AMOUNT OF HOURS FOR THE MODULE 2</b>			<b>40</b>	<b>60</b>	<b>100</b>

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