

Procedure for organizing and conducting the OSCE part of the final exam of the Pharmacy study program

OSCE – the objective structural clinical examination is a part of the final examination of the pharmacy study program. The aim of the OSCE part is to evaluate the practical skills of students acquired during their studies. This organizational and implementation procedure provides guidelines for the preparation and evaluation of OSCE station tasks. Specific tasks are prepared by the task preparation team of the final exam.

Assessments of the OSCE part:

1. Ability to identify the pharmaceutical form in the technological prescription, select suitable excipients and prepare the product.
2. Ability to justify the choice of the method and performed analysis by analyzing the prepared products.
3. Ability to assess the correctness of the prepared pharmaceutical documents and to make decisions on the further use of documents.
4. Ability to provide information and advise to patients taking their pharmaceutical products and to select over-the-counter medications according to the patient's needs and complaints.

The OSCE part is implemented by student flows – students come to the exam in groups of 9 students (Annex No. 1).

The structure of the OSCE part:

Station I: Pharmaceutical Documentation Management
Station II: Clinical Pharmaceutical Service
Station III: Pharmaceutical Technologies
Station IV: Drug Analysis

Station I: Pharmaceutical Documentation Management – 20 % of the final OSCE part evaluation

Description of the station:

Time, min	Time for working space preparation:	Time incorporated in the task time	Task time:	10 minutes
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Department responsible for the station:	Department of Drug Technology and Social Pharmacy
The purposes of the station:	<ol style="list-style-type: none"> 1. To check the student's ability to evaluate prescriptions; 2. To evaluate the student's ability to identify prescription errors; 3. To evaluate student's knowledge of legal maximal quantity of prescribed medication 4. To find out if student knows the prescription storage particularities
Technical equipment	Computer with e-prescription possibility, Drug index, Pen, Paper
Station place	FF 5th floor – Department of Drug Technology and Social Pharmacy
Self preparation topics:	<ol style="list-style-type: none"> 1. Prescription rules; 2. Good pharmacy practice; 3. Pharmacy law
Remarks	

Instruction for the student:

1. Go to the classroom after the permission is given.
- 2. You have 10 minutes for this task**
3. You will be given 1 prescription and you will have to evaluate them by filling the evaluation sheet.
4. Fill the evaluation sheet.
5. Give the written evaluation sheet with answers to the examiners.

Maximal evaluation – 20 points

Task:

1 prescription will be provided to the student and the questions given bellow should be answered:

Station evaluation sheet

No.	Evaluation item	Maximum amount of points
	Prescription	
1	Is prescription written correctly? Will you dispense the medication? If not, Please name 2 main mistakes:*	10
2	How long this prescription should be kept at a pharmacy?	5
3	What maximal amount of the medication could be dispensed?	5
	Total	20

***The answers should be provided according to the valid law requirements. The possible errors should be evaluated by answering the following questions:**

a) Are all required parts filled in?

b) Are there no errors in parts „Rp.:“ and dates („Date of issue“ and „Valid till“)?

If you find more than 2 mistakes – please name main of them.

Students code: _____ Date: _____

ANSWER SHEET AND EVALUATION FORM
Of the station of Pharmaceutical Documentation Management

Prescription (Code.....)	Evaluation (number of points)	
Is prescription correct? Will you dispense the medication? YES <input type="checkbox"/> NO <input type="checkbox"/> If not, please name 2 main mistakes: 1. 2.	True 10 points <input type="checkbox"/>	False 0 point <input type="checkbox"/>
How long this prescription should be kept at a pharmacy?	True 5 points <input type="checkbox"/>	False 0 point <input type="checkbox"/>
What maximal amount of the medication could be dispensed?	True 5 points <input type="checkbox"/>	False 0 point <input type="checkbox"/>

Evaluation:

Total:

Maximal sum of points:	20
Total points:	
Percentage (Maximum – 20 %):	

Examiner:

(Name, Surname, signature)

Station II: Clinical Pharmaceutical Service – 40% of the final OSCE part evaluation

Description of the station:

Time, min	For preparation and arrangement:	2	To perform the task:	5+3
Department preparing the station tasks:	<ol style="list-style-type: none"> 1. Department of Clinical Pharmacy 2. Institute of Physiology and Pharmacology 3. Department of Pharmacognosy 			
Station goal (s):	<ol style="list-style-type: none"> 1. To check if the student is able to provide the consultation on the over-the-counter or prescription medication to the patient 2. To assess whether the student is able to select a herbal medication based on patient's complaints 3. To check if the student is aware of the most common possible side effects of the drugs 4. To assess whether the student knows the most important drug-drug interactions and their consequences 5. To assess whether the student is able to provide recommendations for drug monitoring to the patient (due to the drug effect, side effects) 			
Necessary means:	<ol style="list-style-type: none"> 1. A computer with the installed drug compatibility program 2. Medication Handbook 3. Note sheet and a pen 4. Calculator 5. Video camera 			
Station location:	FF V floor - Department of Drug Technology and Social Pharmacy Imitation pharmacy			
The self-preparation questions/topics of the station task:	<ol style="list-style-type: none"> 1. Drug interactions, their significance and management 2. Adverse drug reactions and their clinical significance 3. Influence of pharmacokinetics on drug exposure: children and the elderly, renal and hepatic impairment 4. Recommendations for the use of drugs and peculiarities of monitoring the effects of drugs 5. List of commonly used drugs 			
Remarks	The task requires a trained patient			

Station task (scenario):

Patient:	
The purpose of the patient's visit	<ol style="list-style-type: none"> 1. Patient wishes to get xxx medication (<i>may be prescription or over-the-counter</i>) 2. The patient additionally requests a herbal medication for the xxx symptom
Information about the patient and instructions to the patient	<ol style="list-style-type: none"> 1. Information given to the student: <ol style="list-style-type: none"> 1.1. Age of the patient or age of the person to whom the medication is requested

	<p>1.2.The patient has xx diseases (depending on the clinical case, information about allergies, kidney and liver function) or comorbidity of another person</p> <p>1.3.Patient or patient's relative is taking xx medications (2 medications)</p> <p>2. Patient is asking for a prescription or over-the-counter medication and wants to obtain an herbal medication for the xxx symptoms</p> <p>3. Student provides advice on the side effects of the medications mentioned by the patient and possible drug-drug interactions between the requested and already used medications, and provides information on the use of the herbal medication.</p>
Student:	
Collection of information (2 min.)	Listen to the patient's complaints and find out the medications the patient wants
Preparation for consultation (5 min.)	Use the all means available in the room to prepare for the patient's consultation: select the herbal medication, check the possible interactions and side effects
Recommendations to the patient (3 min.)	Advice to the patient on the use of the selected herbal medication, adverse drug reactions, possible interactions and monitoring of effects

Possible scenario of the clinical case (example):

Information to the student about the patient:

A 50 year non-smoking woman, diagnosed with arterial hypertension. The woman is taking Elapril 10 mg tablets, has no allergies, and has normal kidney and liver function. Female's blood pressure is 125/82 mmHg, heart rate - 78 beats/min.

Instruction to the patient:

1. Greet and ask for Ibuprofen tablets and herbal medication to relieve anxiety
2. Thank to the student after the consultation on adverse drug reactions, drug interactions and monitoring.

Possible model of the clinical case (example):

Student: Hello

Patient: Hello, I would like to get Ibuprofen tablets and herbal medication to relieve anxiety.

Students preparation

Student's consultation (information on the use of the herbal medication, side effects of ibuprofen and the herbal medication, possible drug-drug interactions, recommendations for monitoring the effects of the medications mentioned by the patient (efficacy and safety))

Patient: Thank you

Instruction for the student:

1. Clarify the patient's needs and requested medications (2 min.)
2. Evaluate the available information about the patient and select the herbal medication, and prepare for the consultation (5 min.) - **you can use the means available in the room** (medication handbook, computer)
3. Give the necessary consultation (5 min.):
 - 3.1. Recommend the use of the selected herbal medication
 - 3.2. Warn about the most common possible side effects of the patient's requested medications
 - 3.3. Evaluate the potential drug-drug interactions and their consequences
4. Make recommendations for monitoring the effects (efficacy and safety) of the medications mentioned by the patient

Student code: _____

Date: _____

**STUDENT'S PREPARATION SHEET of the
Station of Clinical Pharmaceutical Service**

Information about the patient and his medications	<i>[pre-printed information for the student about the patient: patient's age, illnesses, medications used]</i>
Patient's complaints and requested medications (over-the-counter or prescription, and herbal medication)	<i>[identified by the student]</i>
Your recommendations:	
Recommended herbal medication, use and the most common side effects	
The most common side effects of the requested over-the-counter or prescription medication	
Possible drug-drug interactions and consequences	
Recommendations to the patient for monitoring the effects of medications mentioned by the patient (efficacy and safety)	

Student code: _____ Date: _____

EVALUATION SHEET of the station of Clinical Pharmaceutical Service

Evaluation element	Evaluation	
1. General part		
1.1. Greeting	0	1
2. Recommendation/consultation by the student		
2.1. Requested herbal medication:		
- Recommended herbal medication	0	1
- Dose	0	1
- Method of administration and time of use	0	2
- How long to use	0	1
2.2. Informs about the most common possible side effects:		
- Side effect (<i>requested over-the-counter or prescription medication</i>)	0	2
- Side effect (<i>herbal medication</i>)	0	2
2.3. Evaluates possible drug-drug interactions (<i>the number of interactions will depend on the clinical case</i>):		
- Interaction 1	0	2
- Consequences of the interaction 1	0	1
- Interaction 2	0	2
- Consequences of the interaction 2	0	1
2.4. Recommends what to monitor (<i>number of recommendations will depend on the clinical case</i>):		
- Recommendation 1	0	2
- Recommendation 2	0	2
Points:		xxx

The maximal sum of points:	xxx (<i>depending on clinical case</i>)
Points:	
Percentage (maximum – 40%):	xx

Examiner:

(Name, surname, signature)

Station III: Pharmaceutical technologies – 20 % of the final OSCE part evaluation

Description of the station:

Time, min.	For preparation and cleaning of the working place:	Time is included in the time dedicated for the task	Time for the task:	30
Department responsible for the preparation of the station tasks:	Department of Drug Technology and Social Pharmacy			
The purpose(s) of the station:	To assess the ability of the student to apply the acquired theoretical knowledge in practice during production of the extemporaneous pharmaceutical forms			
Required means:	Glassware for production of pharmaceutical forms (flasks, cylinders, pestles, plates, etc.), devices (refractometer, scales, computer, label printer, heating plate, water heating baths, thermometer. Pharmacopoeias and other literature in the laboratory.			
Station location:	PF V floor – Department of Drug Technology and Social Pharmacy			
Station task questions/topics for self-preparation:	<ol style="list-style-type: none"> 1. Powder technology 2. Preparation of aqueous solutions. Special cases of solution preparations. 3. The dilution of the standard solutions. 4. Preparation of non-aqueous solutions. 5. Preparation of concentrated solutions. 6. Preparation of mixtures using concentrated solutions and dissolving dry compounds. 7. Solutions of high molecular mass compounds and colloidal solutions. 8. Preparation of suspensions and emulsions. 9. Production of infusions and decoctions 10. Drop technology 11. Production of liniments and ointments 12. Production of suppositories 13. Production of solutions for injection 14. Production of ophthalmic drugs. 15. Production of drugs containing antibiotics 			
Remarks				

Instruction for the student:

Enter the lab after permission.

You have 30 min to perform the task.

You will get a task to prepare an extemporaneous pharmaceutical form.

Prepare the required drug and fill the answer sheet.

After you finish the task, please clean and tidy up your working place.

Go to the examiners with the prepared pharmaceutical form and answer sheet.

The evaluation will take 7 min.

Maximal evaluation: 10 (excellent).

You can use the literature available in the laboratory.

EVALUATION SHEET OF THE STATION OF PHARMACEUTICAL TECHNOLOGIES

No.	Assessment conditions	Maximal sum of points
I	Identified pharmaceutical form	1
II	Filled in self-assessment sheet and calculations	
	Calculated and/or checked dosage	1
	Properly listed materials and their quantities	1
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1
III	Drug preparation process	
	Appropriate devices and means are used	1
	Preparation rules are followed (correct choice of preparation method, order of application of active substances, properly performed preparation processes: crushing, mixing, dissolving, suspending, emulsifying, filtering, dosing)	2
IV	Packaging and label	
	Packaging correctly chosen	0.5
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5
	The method and route of administration are indicated	0.5
	Storage conditions and special warnings are indicated	0.5
	Total	10
V	Completion of the task	
	The task was not completed on time (up to 3 min more)	-0.3
	If the task is interrupted requiring more than 3 min	-0.5
	Drug is not prepared correctly	-1

Student code: _____ Date: _____

Beginning: _____ End: _____

ANSWER SHEET of the station of Pharmaceutical Technologies

Pharmaceutical form:	
Self-control sheet, calculations:	
Fill in the label of extemporaneous pharmaceutical preparation	
The Pharmacy of Lithuanian University of Health Sciences	Patient: (Name, Surname) EXTEMPORANEOUS DRUG Composition:
No. of preparation	Instructions for use:.....
Valid until:
Sukilėlių pr. 13, Kaunas, LT-50106, Tel.: xxxxxxxx	

Go to the examiners with the prepared drug and filled answer sheet.

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF THE STATION OF PHARMACEUTICAL TECHNOLOGIES

No..	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	Preparation rules are followed (correct choice of preparation method, order of application of active substances, properly performed preparation processes: crushing, mixing, dissolving, suspending, emulsifying, filtering, dosing)	2		
IV	Packaging and label			
	Packaging correctly chosen	0.5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5		
	The method and route of administration are indicated	0.5		
	Storage conditions and special warnings are indicated	0.5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0.3		
	If the task is interrupted requiring more than 3 min	-0.5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of points	10
Collected points	
Percentage (maximal possible – 20 %)	

I examiner:

(Name, Surname, signature)

II examiner:

(Name, Surname, signature)

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF POWDER PREPARATION

No.	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	Preparation rules are followed (mortar preparation, powder crushing, mixing, dosing, packaging, labeling)	2		
IV	Packaging and label			
	Packaging correctly chosen	0.5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5		
	The method and route of administration are indicated	0.5		
	Storage conditions and special warnings are indicated	0.5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0.3		
	If the task is interrupted requiring more than 3 min	-0.5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of points	10
Collected points	
Percentage (maximal possible – 20 %)	

I examiner:

(Name Surname, signature)

II examiner:

(Name Surname, signature)

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF SOLUTION PREPARATION

No.	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	Preparation rules are followed (solvent volume calculation, dissolution, filtration (straining), packaging, labeling)	2		
IV	Packaging and label			
	Packaging correctly chosen	0.5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5		
	The method and route of administration are indicated	0.5		
	Storage conditions and special warnings are indicated	0.5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0.3		
	If the task is interrupted requiring more than 3 min	-0.5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of marks	10
Collected marks	
Percentage (maximal possible – 20 %)	

I examiner:

(Name, Surname, signature)

II examiner:

(Name, Surname, signature)

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF MIXTURE PREPARATION

No.	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	Preparation rules are followed (solvent volume calculation, dissolution of dry substances, filtration, addition of concentrated and non-aqueous solutions (tinctures, extracts, fragrances, volatile liquids), packaging, labeling)	2		
IV	Packaging and label			
	Packaging correctly chosen	0.5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5		
	The method and route of administration are indicated	0.5		
	Storage conditions and special warnings are indicated	0.5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0.3		
	If the task is interrupted requiring more than 3 min	-0.5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of points	10
Collected points	
Percentage (maximal possible – 20 %)	

I examiner:

(Name, Surname, signature)

II examiner:

(Name, Surname, signature)

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF SUSPENSION PREPARATION

No.	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	Preparation rules are followed (selection of the preparation method (for oral or external suspensions), selection of the stabilizer and calculation of its amount, preparation process (preparation of the primary pulp, dilution, addition of other medicinal substances, weight adjustment, packaging, labeling)	2		
IV	Packaging and label			
	Packaging correctly chosen	0.5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5		
	The method and route of administration are indicated	0.5		
	Storage conditions and special warnings are indicated	0.5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0.3		
	If the task is interrupted requiring more than 3 min	-0.5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of points	10
Collected points	
Percentage (maximal possible – 20 %)	

I examiner:

(Name, Surname, signature)

II examiner:

(Name, Surname, signature)

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF EMULSION PREPARATION

No.	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	Preparation rules are followed (selection of production method, selection of oil, emulsifier and calculation of their amounts, preparation process (preparation of primary emulsion, dilution, addition of other medicinal substances, straining, weight adjustment), packaging, labeling.	2		
IV	Packaging and label			
	Packaging correctly chosen	0.5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5		
	The method and route of administration are indicated	0.5		
	Storage conditions and special warnings are indicated	0.5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0.3		
	If the task is interrupted requiring more than 3 min	-0.5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of points	10
Collected points	
Percentage (maximal possible – 20 %)	

I examiner:

(Name, Surname, signature)

II examiner:

(Name, Surname, signature)

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF OINTMENT PREPARATION

No.	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	Preparation rules are followed (selection of preparation method, calculation of quantities of base and medicinal substances, order of their addition during the preparation of homogeneous, emulsifying, suspension, composite system ointments), preparation process, packaging, labeling.	2		
IV	Packaging and label			
	Packaging correctly chosen	0.5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5		
	The method and route of administration are indicated	0.5		
	Storage conditions and special warnings are indicated	0.5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0.3		
	If the task is interrupted requiring more than 3 min	-0.5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of points	10
Collected points	
Percentage (maximal allowed – 20 %)	

I examiner:

(Name Surname, signature)

II examiner:

(Name Surname, signature)

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF GEL PREPARATION

No.	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	Preparation rules are followed (selection of preparation method, order of addition of gelling, neutralizing and medicinal substances), preparation process, packaging, labeling.	2		
IV	Packaging and label			
	Packaging correctly chosen	0.5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5		
	The method and route of administration are indicated	0.5		
	Storage conditions and special warnings are indicated	0.5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0.3		
	If the task is interrupted requiring more than 3 min	-0.5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of points	10
Collected points	
Percentage (maximal possible – 20 %)	

I examiner:

(Name, Surname, signature)

II examiner:

(Name, Surname, signature)

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF SUPPOSITORIES AND OVULES PREPARATION

No.	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	Preparation rules are followed (selection of preparation method, calculation of quantities of base and medicinal substances), production process, packaging, labeling	2		
IV	Packaging and label			
	Packaging correctly chosen	0,5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0,5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0,5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0,5		
	The method and route of administration are indicated	0,5		
	Storage conditions and special warnings are indicated	0,5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0,3		
	If the task is interrupted requiring more than 3 min	-0,5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of points	10
Collected points	
Percentage (maximal possible – 20 %)	

I examiner:

(Name, Surname, signature)

II examiner:

(Name, Surname, signature)

Student code: _____ Date: _____

Beginning: _____ End: _____

EVALUATION SHEET OF EYE DROP PREPARATION

No.	Assessment conditions	Maximal sum of points	I examiner	II examiner
I	Identified pharmaceutical form	1		
II	Filled self-assessment sheet and calculations			
	Calculated and/or checked dosage	1		
	Properly listed materials and their quantities	1		
	The total weight or volume of the drug or the weight per dose and number of doses are indicated	1		
III	Drug preparation process			
	Appropriate devices and means are used	1		
	The preparation rules are followed (selection of the preparation method, calculation of the amount of active substances and concentrated solutions, isotonization), preparation process, filtration, quality control, packaging, possibility of sterilization, labeling	2		
IV	Packaging and label			
	Packaging correctly chosen	0.5		
	Pharmaceutical form of the extemporaneous drug correctly indicated	0.5		
	Names of active substances and excipients, their amounts in dosage / total volume / total weight correctly listed	0.5		
	The total weight / volume, one dose weight and dose number of the drug is correctly indicated	0.5		
	The method and route of administration are indicated	0.5		
	Storage conditions and special warnings are indicated	0.5		
	Total:	10		
V	Completion of the task			
	The task was not completed on time (up to 3 min more)	-0.3		
	If the task is interrupted requiring more than 3 min	-0.5		
	Drug is not prepared correctly	-1		
Evaluation:				
Mean evaluation:				

Maximal sum of points	10
Collected points	
Percentage (maximal allowed – 20 %)	

I examiner:

(Name, Surname, signature)

II examiner:

(Name, Surname, signature)

Station IV: Drug analysis - 20 % of the final OSCE part evaluation

Description of the station:

Time, min.	For preparation and arrangement:	Time is included in the time of the task	To perform the task in:	30 min.
Department preparing station tasks:	1. Department of Drug Chemistry 2. Department of Analytical and Toxicological Chemistry			
Station goal (s):	Evaluate the ability to justify the choice of drug or drug substance analysis method and the ability to perform analysis of drugs or active substances.			
Necessary means:	pH meter - Knick 904 PH, pH meter - Knick 911 pH, conductometer - inoLab Cond 720, conductometer - Knick 911 Cond, Spectrophotometer Cary 60 UV-Vis, Spectrophotometer Cary Cary 8454 UV-Vis, Spectrophotometer HALO DB-20, refractometer DR 301 -95, refractometer DR6000, analytical balance KERN ABJ-NM / ABS-N; burette titration; conical flasks of 50 ml and 100 ml capacity; measuring cylinders 25 ml, tubes, tube holders, measuring flasks 25, 50 and 100 ml, automatic pipettes, glass pipettes.			
Station location:	FF IV floor - Department of Drug Chemistry			
Station task self-assessment questions / topics:	Measurement of the pH of solutions, measurement of the pH and electrical conductivity of distilled water. Analysis of drugs and drug substances by refractometry. Analysis of drugs and drug substances by spectrophotometry. Analysis of drugs and drug substances using various titration methods.			
Comments				

Instruction for the student:

1. Enter the laboratory with permission.
2. **You have 30 minutes to complete the task.**
3. You will be given the task to perform an analysis of the drug or drug substance.
4. Perform a quantitative analysis of the drug or drug substance, using the tools available in the laboratory, and complete the answer sheet.
5. Leave your workplace tidy after work.
6. Go to the examiners with the answer sheet and the result of the analysis of the drug or drug substance.
7. The examination will take 7 minutes.

You can use the literature available in the lab.

Maximal evaluation 20 points.

Task: [specific task to be provided]

EVALUATION SHEET of THE STATION OF DRUGS ANALYSIS

No.	Assessment conditions	Maximum amount of points
I	Properties of the medicinal product or medicinal substance	
	The pharmacotherapeutic / chemical group of the provided drug or drug substance	2
	The physico-chemical properties of the indicated drug or drug substance that influence the choice of analysis method	2
II	The course of quantitative analysis of the drug or drug substance	
	The appropriate method of analysis was chosen and applied	2
	Ability to use the equipment suitable for the chosen method of analysis	2
	The analysis is performed consistently (correct analysis process)	2
	Proper (correct, accurate, thorough) analytical procedures: powder weighing, solution volume measurement, dilution, mixing, etc.	5
III	Calculation of the amount of drug substance	
	The correct calculation method has been selected	2
	Correctly calculated result (error tolerance $\pm 5\%$)	1
IV	Correctly formulated work conclusion (conclusion corresponds to the results)	2
	TOTAL	20
V	Completion of the task	
	Task not completed on time (up to 3 minutes)	-0.5
	Total	
	Completed self-check sheet and calculations	

Student code: _____ Date: _____

Start time: _____ End time: _____

ANSWER SHEET of THE STATION OF DRUGS ANALYSIS

Drug or drug substance and pharmacotherapeutic / chemical group:
Physico-chemical properties of the drug or drug substance that influence the choice of the analysis method
Method of analysis, equipment used
The course of the analysis
Conclusion of the work
Self-check sheet, calculations:

Go to the examiners with the answer sheet and the analyzed drug or drug substance.

Student code: _____ Date: _____

Start time: _____ End time: _____

EVALUATION SHEET of THE STATION OF DRUGS ANALYSIS

No.	Assessment conditions	Maximum amount of points	I examiner	II examiner
I	Properties of the medicinal product or medicinal substance			
	The pharmacotherapeutic / chemical group of the drug or drug substance is provided	2		
	The physico-chemical properties of the drug or drug substance that influence the choice of analysis method are indicated	2		
II	The course of quantitative analysis of the drug or drug substance			
	The appropriate method of analysis was chosen	2		
	Ability to use the equipment suitable for the chosen method of analysis	2		
	The analysis is performed consistently (correct analysis process)	2		
	Proper (correct, accurate, thorough) analytical procedures: powder weighing, solution volume measurement, dilution, mixing, etc.	5		
III	Calculation of the amount of drug substance			
	The correct calculation method has been selected	2		
	Correctly calculated result (error tolerance $\pm 5\%$)	1		
IV	Correctly formulated work conclusion (conclusion corresponds to the results)	2		
	TOTAL	20		
V	Completion of the task			
	Task not completed on time (up to 3 minutes)	-0.5		
	Evaluation:			
	Evaluation average:			

Maximum points	20
Collected points	
Percentage (maximum – 20%)	

I examiner:
(Name, surname, signature)

II examiner:
(Name, surname, signature)

The minimum number of staff required for execution of the tasks of the OSCE part:

1. Student registration and coding – 4 persons per day (2 persons every half a day)
2. Accompanying persons to the stations – 10 persons per day (5 persons every half a day - 1 person for each station)
3. Patients – 5 persons per day (one per flow)
4. Timekeepers – 10 people per day (5 people every half day – 1 person for each station)
5. Examiners – 18 persons per day (9 persons every half day – 1 examiner per student)

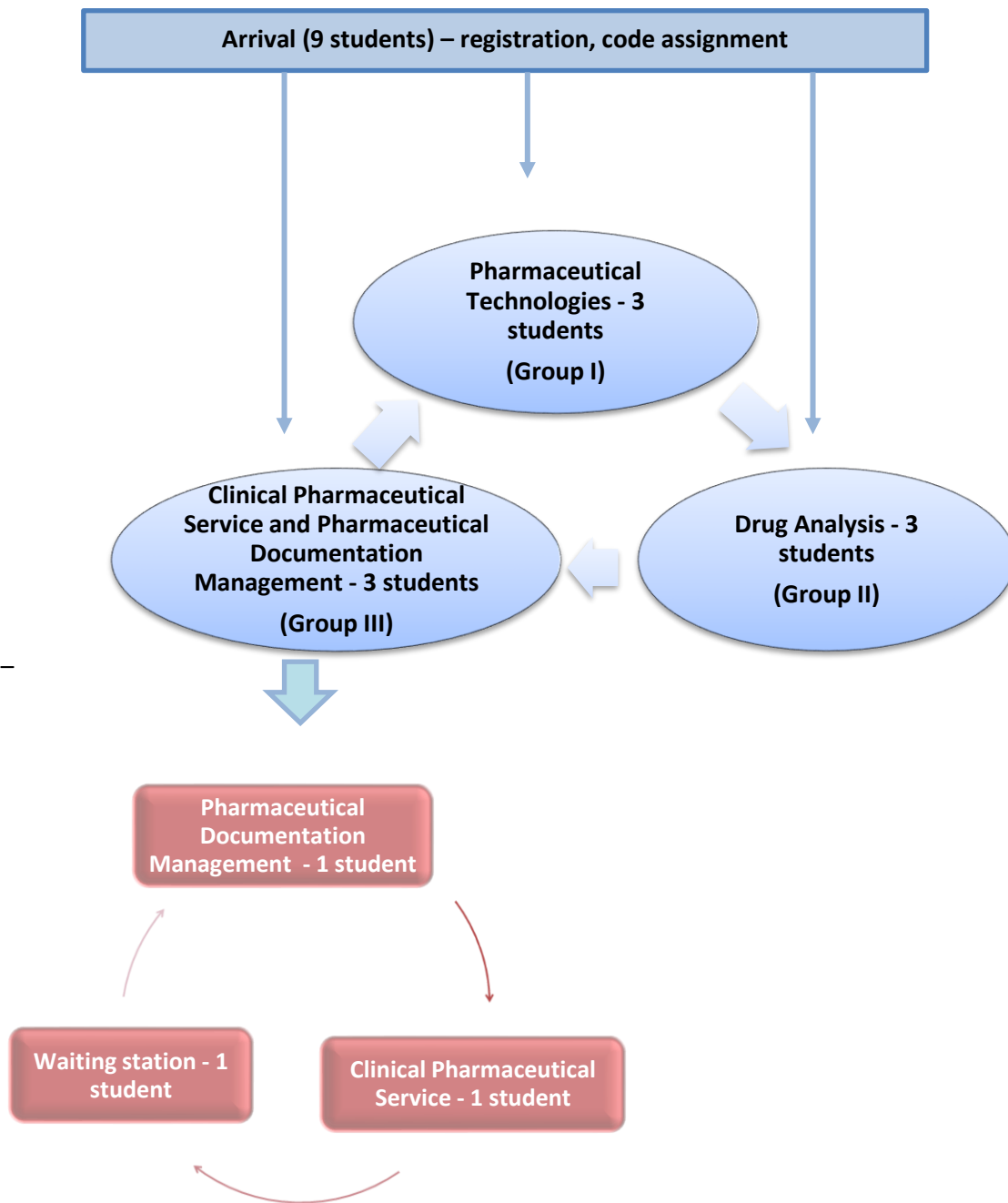
Movement of student flows among stations

1. Students come to the OSCE exam in flows of 9 students. Students receive an in advance prepared information sheet from which station to start the exam and how to proceed further.
2. The first flow, Flow 1, (3 groups of 3 students) arrives at 8:00 a.m. In the exam preparation room, students are registered and given a code that is used at all stations.
3. At 8:15 a.m. the Group I goes to the station of Pharmaceutical Technologies (FF V floor), Group II – to the station of Drug Analysis (FF IV floor), Group III – to the stations of Pharmaceutical Documentation Management and Clinical Pharmaceutical Service (FF V floor).
4. 30 minutes are allocated for the performance of students' tasks at the stations of Pharmaceutical Technologies and Drug Analysis, 10 minutes – for the stations of Clinical Pharmaceutical Service and Pharmaceutical Documentation Management. The transition between the stations located on the FF V floor, i.e. stations of Pharmaceutical Technologies, Clinical Pharmaceutical Service and Pharmaceutical Documentation Management, is 5 minutes each, between the station of Drug Analysis (FF IV Floor) and the stations of Pharmaceutical Technologies, Clinical Pharmaceutical Service and Pharmaceutical Documentation Management (FF V Floor) – 10 min.
5. The total duration of 4 tasks is 2 hours and 5 min. Upon completion of the tasks, the following time is allocated for the preparation of stations for the next flow: for the preparation of stations Pharmaceutical Technologies and Drug Analysis – 15 min.; for stations of Clinical Pharmaceutical Service and Pharmaceutical Documentation Management – 5 min.
6. The second flow, Flow 2, (3 student groups of 3 students – 9 students) arrives after 1 hour and 55 min. from the start of the first flow exam, i.e 10:10 a.m., etc. – the table shows the times of students' arrival and completion of station tasks.

Distribution of student flows - times of arrival and execution of tasks:

Students' flows	Time		
	Registration and code assignment	Start of station tasks	End of station tasks
Flow 1 (9 students)	8:00	8:15	10:20
Flow 2 (9 students)	10:10	10:25	12:30
Flow 3 (9 students)	12:20	12:35	14:40
Flow 4 (9 students)	14:00	14:45	16:50
Flow 5 (9 students)	16:10	16:55	19:00

Scheme of students' movement:



Students' movement at stations by time (example - students' movement of one flow is presented, numbers indicate student's number):

Time	Pharmaceutical technologies	Drug Analysis
	Group I	Group II
8:15-8:45	1, 2, 3	4, 5, 6

Time	Pharmaceutical Documentation Management	Clinical Pharmaceutical Service	Waiting
	Group III		
8:15-8:25	7	8	9
8:25-8:30	Transition to the next station		
8:30-8:40	9	7	8
8:40-8:45	Transition to the next station		
8:45-8:55	8	9	7

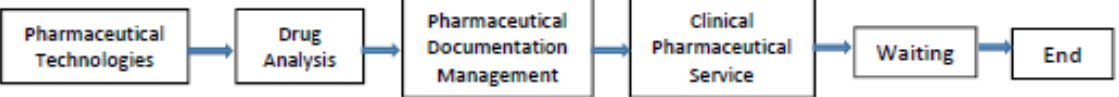
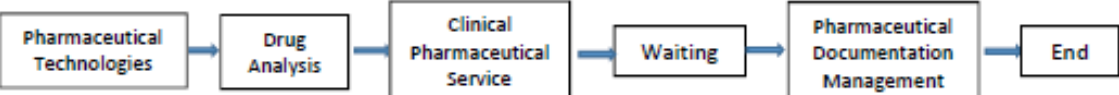

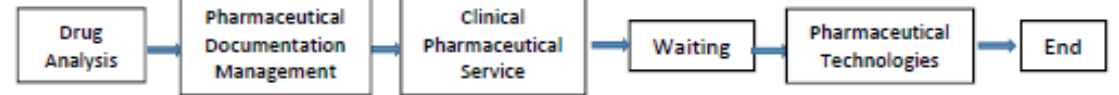
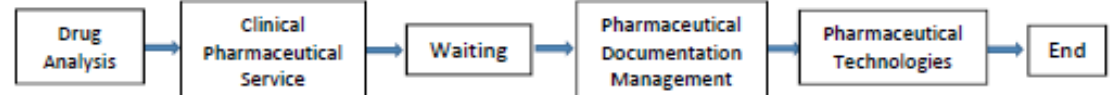

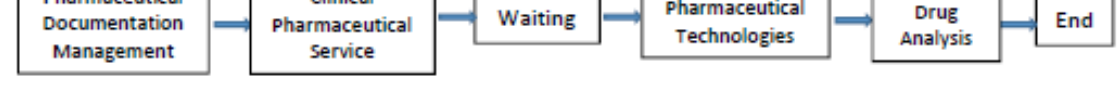
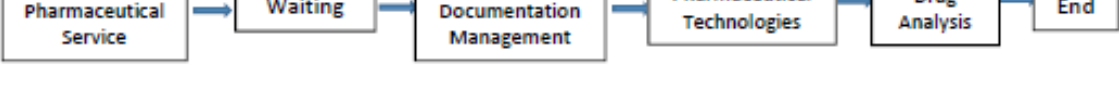
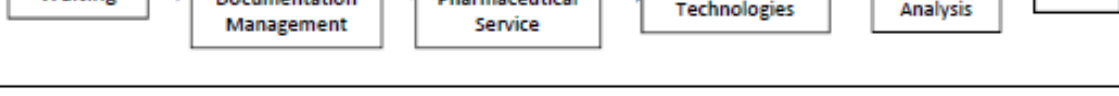
Time	Group III	Group I
	8:55-9:05	7, 8, 9

Time	Group II		
	8:55-9:05	4	5
9:05-9:10	Transition to the next station		
9:10-9:20	6	4	5
9:20-9:25	Transition to the next station		
9:25-9:35	5	6	4

Time	Group II	Group III
	9:40-10:10	4, 5, 6

Time	Group I		
	9:40-9:50	1	2
9:50-9:55	Transition to the next station		
9:55-10:05	3	1	2
10:05-10:10	Transition to the next station		
10:10-10:20	2	3	1

Example of movement cards of students' Flow I among OSCE stations:

No. of student	Movement among stations
1	 <pre> graph LR A[Pharmaceutical Technologies] --> B[Drug Analysis] B --> C[Pharmaceutical Documentation Management] C --> D[Clinical Pharmaceutical Service] D --> E[Waiting] E --> F[End] </pre>
2	 <pre> graph LR A[Pharmaceutical Technologies] --> B[Drug Analysis] B --> C[Clinical Pharmaceutical Service] C --> D[Waiting] D --> E[Pharmaceutical Documentation Management] E --> F[End] </pre>
3	 <pre> graph LR A[Pharmaceutical Technologies] --> B[Drug Analysis] B --> C[Waiting] C --> D[Pharmaceutical Documentation Management] D --> E[Clinical Pharmaceutical Service] E --> F[End] </pre>
4	 <pre> graph LR A[Drug Analysis] --> B[Pharmaceutical Documentation Management] B --> C[Clinical Pharmaceutical Service] C --> D[Waiting] D --> E[Pharmaceutical Technologies] E --> F[End] </pre>
5	 <pre> graph LR A[Drug Analysis] --> B[Clinical Pharmaceutical Service] B --> C[Waiting] C --> D[Pharmaceutical Documentation Management] D --> E[Pharmaceutical Technologies] E --> F[End] </pre>
6	 <pre> graph LR A[Drug Analysis] --> B[Waiting] B --> C[Pharmaceutical Documentation Management] C --> D[Clinical Pharmaceutical Service] D --> E[Pharmaceutical Technologies] E --> F[End] </pre>
7	 <pre> graph LR A[Pharmaceutical Documentation Management] --> B[Clinical Pharmaceutical Service] B --> C[Waiting] C --> D[Pharmaceutical Technologies] D --> E[Drug Analysis] E --> F[End] </pre>
8	 <pre> graph LR A[Clinical Pharmaceutical Service] --> B[Waiting] B --> C[Pharmaceutical Documentation Management] C --> D[Pharmaceutical Technologies] D --> E[Drug Analysis] E --> F[End] </pre>
9	 <pre> graph LR A[Waiting] --> B[Pharmaceutical Documentation Management] B --> C[Clinical Pharmaceutical Service] C --> D[Pharmaceutical Technologies] D --> E[Drug Analysis] E --> F[End] </pre>