NATIONAL UNIVERSITY OF PHARMACY

DRUG TECHNOLOGY DEPARTMENT

Workbook

for Industrial pharmaceutical practice in pharmaceutical technology (Pharmacy-based technology of drugs)

with methodical recommendations

for applicants of higher educational of specialty
226 Pharmacy for foreign students

(language of instructions - English)

Year _____group_____

_____

(surname, name)

Place of practical training: _____

_____

(No. of the chemist's shop, address, telephone)

Time of practical training: from _____20___ year to _____20__ year.

Leader of pharmacy establishment:

_____

(surname, name)

Leader of practical training from a department:

_____

(surname, name)

Kharkiv-2020

INTRODUCTION

This workbook for practical training with methodological recommendations is composed according to the curriculum, to the “Statute about practical training for students of higher schools” and to the contents of pharmacist qualification characteristics.

Aim of practical training in chemist’s technology of drugs is to consolidate theoretical knowledge, to broaden practical abilities and to acquire practical skills in questions of extemporaneous medicines preparation, their quality control and registration for dispensing.

According to the curriculum, practical training in chemist’s technology of drugs is conducted during 4 weeks (20 working days) for foreign 5th-year students of “Pharmacy” specialty.

Practical training is conducted at the chemist’s shops, which satisfy the requirements to the bases for practical training and occupy production activity. Applicant for higher education undergo practical training at the workplace of pharmacist on preparation of extemporaneous medicines (EM) and at the workplace of pharmacist on preparation of intrapharmacy products (IPP) and medicines registration for dispensing.

APPLICANT’ FOR HIGHER EDUCATION TRAINING MANAGEMENT

Responsibility for organization and implementation of practical training at the chemist’s shop is placed on chemist’s shop manager or his assistant.

The direct management over applicant for higher education training at certain allotments of work is placed on highly qualified specialists with sufficient operational experience (according to the order of chemist’s shop manager).

Duties of the chemist’s shop manager:

- to check the presence of students’ assignment, journal of practical training and workbook with methodological recommendations (hereinafter referred to as “workbook”);
- it is necessary to mark the date of student’s arrival to the practice in the journal of practical training, to seal and to sign it;
- to acquaint students with production premises and the staff of the chemist’s shop; to provide with instructions on labour protection, safety measures and rules of internal order:
- by means of order at the chemist’s shop, to assign the experienced specialists as students on-site practical training managers;
- on finishing the practice, to check the workbook and to certify it with personal signature and seal of the chemist’s shop;
- in the journal of practical training, to sign and to certify with seal the reference of student’s work during practical training, to mark the date of applicant for higher education departure

from the practice, to seal and to sign it.

Duties of on-site practical training manager:

- to instruct and to acquaint applicant for higher education with work organization at the concrete workplaces, with the situation of medicinal and auxiliary medicinal substances and materials, devices and apparatus which are used in preparation of medicines, with the rules of labour protection and safety measures;
- to follow the observance of pharmaceutical order and sanitary requirements by applicant for higher education; to implement the constant control over students work, to help them to carry out all tasks correctly on-site;
- before extemporaneous preparation of medicines by applicant for higher education, to check their calculations, to control the correctness of conducting the technological operations;
- to control timeliness of workbook filling, to make appropriate remarks, if necessary;
- in the journal of practical training, to mark the fulfillment of practice passing schedule every day;
- on finishing of practice, to compose the reference of applicant for higher education work in the journal of practical training, where it is necessary to characterize theoretical knowledge and practical skills of student and to evaluate his/her work during the practice.

Duties of the* applicant for higher education*:

- to receive the assignment and journal of practical training in the practice department;
- to be instructed at the technology of drugs department about passing of practice, to get this workbook;
- to arrive promptly to the chemist's shop by the beginning of the practice;
- to show the assignment, journal of practical training and this workbook to the chemist's shop manager and to proceed to the passing of the practice;
- to submit to the effective rules of internal order at the chemist's shop, to follow the operating schedule;
- to learn and obey the rules of labour protection and safety measures, to keep to the pharmaceutical order and sanitary requirements;
- to be responsible for performed work equally with full-time workers of the chemist's shop;
- to carry out the tasks, which are provided for practice program, fully;
- to keep the workbook and to give it daily to the direct on-site practice manager for checking.

CONTENTS OF PRACTICAL TRAINING

Module 1. General knowledge of the chemist's shop. Preparation of non-sterile and sterile medicines and intrapharmacy products.

Semantic module 1. General knowledge of the chemist's shop. Preparation of non-sterile and sterile medicines and intrapharmacy products.

Description of work	Number of days
Theme 1. Knowledge of chemist's shop's premises and rooms. Analysis of regulations requirements to the premises of the chemist's shop observance.	2
On the pharmacist's working place of extemporaneous medicines preparation: **Theme 2.** Analysis of regulations requirements to the productive activity of the chemist's shop observance. Preparation of solid extemporaneous medicinal forms (EMF). **Theme 3.** Preparation of liquid EMF. **Theme 4.** Preparation of semi-solid EMF. **Theme 5.** Preparation of sterile and aseptic EMF.	9
On the pharmacist's working place of intrapharmacy products preparation and registration medicines for dispensing: **Theme 6.** Analysis of regulations requirements to intrapharmacy products preparation observance. Preparation of intrapharmacy products (IPP), packing, re-handling and labeling of medicines.	3
Theme 7. Execution of report documents.	1
Total number of days:	15

REPORT DOCUMENTATION

1. THE WORKBOOK

(given at the department)

During practical training, in their workbooks, applicant for higher education must perform the following tasks:

Task 1. To fill in the table "Regulations requirements to the productive activity of the chemist's shop" with the detailed answers on formulated questions. It is necessary to expound the essence of the requirement and to point the document, by which it is regulated, in the column "Requirements".

To submit in the form of the photo and video materials:

– description of the pharmacist's working place at the assistance room and of the working place at the aseptic block,

– description of the pharmacist's working place on packing and intrapharmacy products,
– description of pharmacist's working place on quality control,
– description of the labour-saving tools, which are used in preparation of EMF and IPP,
– filled labels for medicines for internal and external usage, for injections and for packing.

Task 2. To describe technology of EMF, which were received at the chemist's shop during practice.

2. REPORT ON PRACTICE PASSING

(is written by a applicant for higher education*)*

A applicant for higher education based on fulfilled practice program, his own observations, writes report and **the practical training managers do not certify it**.

Reflecting the whole work for a period of practical training, the applicant for higher education must show the ability to analyze the done work and the enough qualified preparation in chemist's technology of drugs.

In the report there must be reflected:

1. Description of conditions and settings, in which student's training passed;
2. Order of practical training passing, its contents in each;
3. Shortcomings of the production process (equipment, organization, control), their reasons;
4. Discrepancies between practice and theory, which have been revealed by the student as a result of practice passing, their reasons and his own point of view on possibility of their elimination;
5. In conclusion, the student must evaluate the practical training, its positive and negative sides.

Report should be formatted on the separate sheets of paper according to the mentioned headings.

3. JOURNAL OF PRACTICAL TRAINING

(given by the practice department)

On the first day of practical training, the date of the applicant for higher education arrival is marked on the second page of the journal; it is certified with a seal and a signature of the chemist's shop manager. On the last day of practical training the date of the applicant for higher education departure from the chemist's shop is marked, it is also certified with a seal and a signature of the chemist's shop manager.

Furthermore, the following points are completed in the journal:

– 2 – the actual calendar schedule of practice passing, which is signed by the on-site practical training manager;

– 3 – reference about applicant for higher education work (testimonial) by the practical training manager from the chemist's shop – certified with the chemist's shop manager's signature and the chemist's shop's seal;

– 5 – the other kinds of works, which were performed by the applicant for higher education in addition to the program, are indicated.

After finishing of the practical training, the applicant for higher education must give to the department's lecturer the filled in and formalized workbook, report and journal of practical training.

CONTROL OF PRACTICAL TRAINING PASSING

Passing of practical training is estimated on 100-balls rating system of applicant for higher education evaluation (61-100 balls).

Current module control of practical training passing (35-60 balls) includes the mark on formalization of the report documentation and completeness of fulfillment of tasks, which are stipulated by the program of the practice. At the same time, testimonial, given by the practical training manager from the chemist's shop, and the mark, put by him for practical training passing, is taken into account.

Final module control (25-40 balls) is conducted at the department in the form of computer testing and solution of situational tasks, which are composed in accordance to the list of practical abilities and skills (supplement 1).

Total module control is conducted after finishing of practical training during **first 10 days** of the next semester.

Module 1. General knowledge of the chemist's shop. Preparation of non-sterile and sterile medicines and intrapharmacy products.

Semantic module 1. General knowledge of the chemist's shop. Preparation of non-sterile and sterile medicines and intrapharmacy products.

Task 1. Fill in the table, give the detailed answers on the formulated questions with minute indications of requirements and broadened explanations (comments).

REGULATIONS REQUIREMENTS IN THE EXERCISE OF THE PRODUCTIVE ACTIVITY OF THE CHEMIST'S SHOP*

Question	Requirements	Yes	No	Comments
Theme 1. Knowledge of chemist's shop's premises and rooms. Analysis of regulations requirements to the premises and equipment of the chemist's shop observance.				
I. Description of the chemist's shop				
1. Is the chemist's shop situated in the special building or in the adapted premises?				Area:
2. Does the chemist's shop occupy with the productive activity?				License:
3. Is there a sterile (aseptic) zone at the chemist's shop?				From which rooms does it consist of:
4. Which departments are there at the chemist's shop?				

*In the absence of the productive activity at the chemist's shop the table is filled in on the basis of study of TND of MH of Ukraine requirements.

Question	Requirements	Yes	No	Comments
5. Does a visiting medical doctor work at the chemist's shop?				Indicate his specialization:
II. Premises and equipment				
6. Which productive premises are there at the chemist's shop?	*Assistant room, aseptic block (or sterile zone), storage room etc.* - - -			

7. Enumerate the productive equipment which is used in preparation of non-sterile medicines*:

Powders: _____

_____

_____

Medicinal herbal teas: _____

_____

_____

Liquid medicinal forms: _____

_____

_____

_____

_____

Ointments, pastes, gels: _____

_____

_____

_____

Suppositories: _____

_____

_____

*Tools and equipment can be introduced in the form of photo and video materials

Question	Requirements	Yes	No	Comments
8. How often is the sanitization of the equipment conducted?				
9. In there in the productive premises the equipment which is not required to the works under way?				
10. Which cleaning of the premises is conducted at the chemist's shop?	*-wet* *-dry*			How often is the cleaning conducted?
11. Which detergents are used when cleaning of the premises?	Which document permits their usage:			
12. Which disinfectants are used when cleaning of the premises?	Which document permits their usage:			

Question	Requirements	Yes	No	Comments
III. Normative documents, which regulate the work of the chemist's shop				
13. Specify the necessary normative documentation which regulate productive activity of the chemist's shop.	-laws -resolutions -Pharmacopoeias -orders -instructions -others			Specify the other available types of ND:

Give the numbers of normative documentation, dates of adoption and names:

Laws: 1. _____

_____

2. _____

_____

Resolutions: 1. _____

_____

_____

_____

_____

Pharmacopoeias: _____

_____

Orders, instructions (numbers and dated of adoption): _____

_____

_____

_____

_____

_____

_____

_____

_____

Others: _____

_____

_____

_____

_____

Question	Requirements	Yes	No	Comments
14. Specify documentation which regulates the rules of preparation of *non-sterile medicines*	Specify name and number of the documents, point the items in which requirements are stated			Which requirements are not followed and why?
15. Specify documentation which regulates the rules of preparation of *sterile medicines*				
16. Specify documentation which regulates *sanitary requirements to the premises, equipment, staff*				
17. Specify documentation which regulates *the rules of prescribing and receiving of the prescriptions*				

Question	Requirements	Yes	No	Comments
18. Specify documentation which regulates *the rules of registration for dispensing of the medicines*				
IV. Medicinal and auxiliary substances				
19. Are only the substances of Pharmacopoeial quality used for preparation of medicines ?	Which document regulates it?			
20. Should the quality certificates for all medicinal and auxiliary substances be at the chemist's shop?				
21. Should the results of analysis of all substances from analytical laboratory be at the chemist's shop?				
22. Is the possibility of impact of auxiliary ingredients of factorial medicine on the quality of prepared from them EM taken into account?				
V. Work with prescriptions on EM				
23. Are the rules of prescribing of received at the chemist's shop prescriptions followed?	Specify the requirements			

Question	Requirements	Yes	No	Comments
24. Are the doses of strong-effective and poisonous substances checked when receiving the prescriptions?	Who conducts the check of doses? (position of the employee)			Where are the calculation made?
25. Is the compatibility of the ingredients checked in the prescription?	Who conducts the check? (position of the employee)			Which sources (literature, the internet, computer data) are used?
26. Are there any notes or calculations made on the prescriptions?				
VI. Documentation when preparation of medicines				
27. Specify the type of the necessary documentation when preparing of EM:				
– enumerate **general instructions** for preparation of EM	1. _____ _____ 2. _____ _____ _____ _____ _____ _____ _____			
– **productive notes** (journals, etc.) for registration of *EM* technological process				Who is responsible for their keeping and storing?
– **technological instructions** for medi-				

Question	Requirements	Yes	No	Comments
cines, *made for the future use*				
28. Specify conditions and shelf-life of prescriptions and requests of medicoprophilactic institutions at the chemist's shop				
Themes 2-5. *Analysis of regulations requirements to the productive activity of the chemist's shop observance. Preparation of solid, liquid, soft, sterile and aseptic EMF.*				
VII. Preparation of medicines in conditions of the chemist's shop				
29. Sequence of technological process when preparation of EM:				
1) Check of correctness of prescription form execution, compatibility of ingredients and doses				*Who checks:*
2) Calculations of quantity of active and auxiliary substances				*Who makes calculations:*
3) Implementation of sanitary preparing of the staff				*What clothes:*
4) Implementation of sanitary preparing of preparation zone and equipment				*How is the zone cleaned:*
5) Selection of the proper packing	*Which documents are followed when selecting of packing for EM?*			*From which factors does the choice of packing material depend on?*

Question	Requirements	Yes	No	Comments
6) Selection of auxiliary materials and equipment for preparation of EM	*Which rules are followed?*			
7) Filling in of WCP	*Which documents regulate implementation of written control?*			*Who and when fills in WCP?*
8) Labeling of EM	*Which documents regulate?*			*Who conducts labeling?*
9) Cleaning of the working place and equipment after preparation of EM				*Who conducts?*
10) Control when dispensing				*Who conducts?*
30. EM technology according to the general rules, which are stated in SPU, orders of MH of Ukraine				
POWDERS				
- stages of powders preparation	_____ _____ _____			
- rules of mixing of powder ingredients	- -			Which physicochemical properties of substances re necessary to take into account? _____ _____ _____
- which packing is used for dispensing of powders?				

Question	Requirements	Yes	No	Comments
SOLUTIONS, SUSPENSIONS, EMULSIONS				
- stages of liquid EM preparation				
- which rules of Liquid EM preparation should be taken into account?	– aqueous solutions: –non-aqueous solutions: – suspensions: – emulsions:			
- which substances can be used as stabilizers and emulsifiers?				
- which bottles are used for packing?	– of suspensions: – of emulsions:			Which auxiliary label should be on the packing?
OINTMENTS AND PASTES				
- stages of ointments preparation				

Question	Requirements	Yes	No	Comments
- rules of ointments preparation				
- how is the homogeneity of ointments and pastes checked?				
- which packing is used for dispensing of ointments?				
SUPPOSITORIES				
- stages of suppositories preparation				
- rules of suppositories preparation				
- is the suppository mass weighed?				
- are the ready suppositories weighed?				
- how is the quality of the suppositories evaluated?				

Question	Requirements	Yes	No	Comments
- which packing is used for dispensing of suppositories?				
- which auxiliary label should be on the packing?				
EM which are prepared in the aseptic conditions				
- specify the medicinal forms which are prepared in the aseptic conditions				
- which sort of medicinal and auxiliary substances is used for preparation of sterile EM?				
- specify the sequence of technology of solutions for injections				
- which filter material is used?				
- which method of sterilization is used for EM?				
- which kinds of control are used for:	- solutions for injections: - EM for newborn:			
- which packing is used for dispensing of sterile EM?				
- which auxiliary label should be on the packing?				

Question	Requirements	Yes	No	Comments
VIII. Labeling of EM and IPP				
31. Text of the main label for EM contains the following signs and information: 1 2 3				
32. Text of the main label for IPP contains the following signs and information: 1 2 3 4				

Task 2. Describe technology of EM, which arrived at the chemist's shop during the practice.

Rp.:	The given medicine is:

Technology: _____

WCP (reverse side)	WCP (front side)

registration for dispensing: _____

Rp.:	The given medicine is:

Technology:

WCP (reverse side)	WCP (front side)

Registration for dispensing:

Rp.:

The given medicine is:

Technology:

WCP (reverse side)	WCP (front side)

Registration for dispensing:

Rp.:

The given medicine is:

Technology:

WCP (reverse side)	WCP (front side)

Registration for dispensing:

Rp.:

The given medicine is:

Technology:

WCP (reverse side)	WCP (front side)

Registration for dispensing:

Rp.:

The given medicine is:

Technology:

WCP (reverse side)	WCP (front side)

Registration for dispensing:

LIST OF THE PRACTICAL ABILITIES AND SKILLS IN CHEMIST'S TECHNOLOGY OF DRUGS

1. To know the normative base, which regulates the productive activity of the chemist's shops, to be able to work with it.
2. To know and to analyze the contents of requirements of TND in organization, conducting and control of productive process at the chemist's shop.
3. To be able to implement the requirements of TND into the practical activity of the chemist's shop.
4. To check single and daily doses of poisonous, narcotic, strong-effective substances and norms of delivery for narcotic substances and substances equated to them.
5. To identify physical, chemical and pharmacological incompatibilities in prescriptions.

POWDERS

6. To calculate the quantity of medicinal substances for preparation of powders.
7. To carry out the main technological operations (weighing, grinding, mixing, dosing) when preparing powders.
8. To use the labour-saving tools for mixing and dosing of powders.
9. To choose the packing material according to the properties of ingredients and to regaiter medicine for dispensing.

LIQUID MEDICINAL FORMS

10. To calculate the quantity of water and medicinal substances for preparation of concentrated solutions.
11. To carry out the main technological operations when preparing concentrated solutions (Weighing, measuring, dissolving, filtrating). To use the burette system.
12. To calculate the quantity of medicinal substances, concentrated solutions and water for preparation of solutions, which contain up to 3 5 and more than 3 % of dry substances.
13. To carry out the main technological operations when preparing liquid medicinal forms with the use of concentrated solutions and dry substances (weighing, measuring, dissolving, straining).
14. To calculate the quantity of water, medicinal and auxiliary substances for preparation of drops.
15. To calculate the quantity of water and Pharmacopoeial liquids according to the way of their prescribing.
16. To calculate the quantity of alcohol and water for obtaining of alcohol of the needed concentration (with the use of the formula of dilution and tables).
17. To carry out the main technological operations when preparing non-aqueous solutions (weighing, measuring, heating, dissolving, straining).
18. To choose and to ground the optimal technology of solutions HMC and protected colloids.
19. To carry out the main technological operations when preparing solutions of HMC and protected colloids (weighing, measuring, heating, dissolving, straining).
20. To calculate the quantity of medicinal substances and solvent when preparing

suspensions and quantity of stabilizer when preparing suspensions with hydrophobic substances.
21. To carry out the main technological operations when preparing suspensions (weighing, grinding, mixing, measuring).
22. To choose the suitable stabilizer according to the physicochemical properties of ingredients of emulsion.
23. To calculate the quantity of oil, emulsifier and water for preparation of emulsion.
24. To choose and to ground the way of emulsion preparation according to the nature of emulsifier.
25. To carry out the main technological operations when preparing oily emulsion (weighing, measuring, dissolving, heating, mixing, emulsifying, straining).
26. To introduce medicinal substances with different physicochemical properties into the composition of emulsion.
27. To calculate the quantity of medicinal plant raw material or extracts-concentrates and water for preparation of infusions and decoctions.
28. To carry out the main technological operations when preparing infusions and decoctions (grinding, sifting, weighing, measuring, extracting, cooling, straining, brining up to the volume).
29. To use the labour-saving tools when preparing of water extractions (infusers, etc.).
30. To introduce medicinal substances with different physicochemical properties into the composition of water extracts.

LINIMENTS, OINTMENTS, SUPPOSITORIES

31. To calculate the percentage content of medicinal substances with different physicochemical properties, which are contained in ointments, and quantity of auxiliary substances for preparation of homogeneous and heterogeneous ointments.
32. To carry the main technological operations when preparing liniments and ointments of different types of dispersed system (weighing, measuring, mixing, grinding, dissolving, emulsifying).
33. To calculate the quantity of medicinal and auxiliary substances for preparation of suppositories.
34. To choose and to ground the optimal variant of technology according to the properties of ingredients, which are contained in the prescription, and equipment, which is used for it.
35. To carry out the main technological operations when preparing suppositories by the rolling or casting method (weighing, grinding, dissolving, mixing, emulsifying, dosing, rolling, melting, pouring into the forms, cooling, pulling out from the forms).
36. To use the labour-saving tools for preparation of suppositories by the rolling or casting method (pill machine, machine for grinding of Cacao butter, device for heating and melting of the bases, forms for pouring etc.).

ASEPTIC MEDICINAL FORMS

37. To calculate the quantity of medicinal and auxiliary substances for preparation of solutions for injections.
38. To choose stabilizer and to ground the necessity of stabilization of medicinal substance in solutions for injections.
39. To calculate the isotonic concentrations of solutions for injections by the different method.

40. To choose the optimal variant of technology of solutions for injections according to the physicochemical properties of ingredients and the available equipment.
41. To choose and to ground the rational way of preparation of suspensions for injections or solutions of thermolabile substances.
42. To carry out the main technological operations when preparing solutions for injections (weighing, dissolving, filtrating, control of mechanical admixtures absence, hermetic corking up, registration for sterilizing, sterilizing).
43. To calculate the quantity of medicinal and auxiliary substances for preparation of eye medicines and medicines with antibiotics
44. To calculate the isotonic concentration of eye drops, washings and lotions.
45. To choose and to ground the optimal variant of technology of eye medicines according to the properties of ingredients and the available equipment.
46. To carry out the main technological operations when preparing eye medicines and medicines with antibiotics (weighing, measuring, dissolving, filtrating, grinding, mixing, melting, sterilizing, rolling, molding, dividing into doses etc.).
47. To choose packing material according to the type of medicinal form and physicochemical properties of ingredients.
48. To use the labour-saving tools in the process of preparation of sterile medicines (apparatus for filtration, machine for closing of aluminum corks, apparatus for sterilization, drying box etc.

LITERATURE,
NECESSARY FOR IMPLEMENTATION OF THE TASKS
OF PRACTICAL TRAINING IN CHEMIST'S TECHNOLOGY OF DRUGS

1. Державна фармакопея України/ Державне підприємство "Науково-експертний фармакопейний центр"- 1-е вид., доп. 2. – Х.: РІРЕГ, 2008. – 620 с.
2. Закон України «Про лікарські засоби» від 4.04.96 № 123/96-ВР.
3. Методичні рекомендації. Вимоги до виготовлення нестерильних лікарських засобів в умовах аптек / Під ред. акад. АНТКУ проф. О.І.Тихонова і проф. Т.Г.Ярних // Київ, МОЗ України. – 2005. – 98 с.
4. Методичні рекомендації. Вимоги до виготовлення стерильних та асептичних лікарських засобів в умовах аптек / Під ред. акад. АНТКУ проф. О.І.Тихонова і проф. Т.Г.Ярних // Київ, МОЗ України. – 2005. – 76 с.
5. Наказ МОЗ України № 44 від 16.03.93 р. «Про організацію зберігання в аптечних установах різних груп лікарських засобів та виробів медичного призначення».
6. Наказ МОЗ України № 197 від 07.09.93 р. "Про затвердження Інструкції по приготуванню в аптеках лікарських форм з рідким дисперсійним середовищем".
7. Наказ МОЗ України № 626 від 15.12.2004 р. «Про затвердження Правил виробництва (виготовлення) лікарських засобів в умовах аптеки».
8. Наказ МОЗ України № 275 від 15.05.2006 р. «Інструкція із санітарно-протиепідемічного режиму аптечних закладів».
9. Наказ МОЗ України № 360 від 19.07.2006 р. "Про затвердження Правил виписування рецептів та вимог-замовлень на лікарські засоби і вироби медичного призначення, порядку відпуску лікарських засобів і виробів медичного призначення з аптек та їх структурних підрозділів, інструкції про порядок зберігання, обліку та знищення рецептурних бланків та вимог замовлень".
10. Тверді лікарські форми: Екстемпоральна рецептура: Методичні рекомендації /О.І. Тихонов, Т.Г. Ярних, С.В. Гриценко та ін.; За ред. О.І. Тихонова – Х.: Вид-во НФаУ; Золоті сторінки, 2003. – 176 с.
11. Рідкі лікарські форми: Екстемпоральна рецептура: Методичні рекомендації / О.І. Тихонов, Т.Г.Ярних, Н.Ф.Орловецька та ін.; За ред. О.І.Тихонова і Т.Г.Ярних. – Х.: Вид-во НФаУ; Оригінал, 2005. – 160 с.
12. М'які лікарські форми: Екстемпоральна рецептура: Методичні рекомендації /О.І. Тихонов, Т.Г. Ярних, О.В.Лукієнко та ін.; За ред. О.І. Тихонова – Х.: Вид-во НФаУ; Золоті сторінки, 2003. – 127 с.

13. Асептичні лікарські форми: Екстемпоральна рецептура: Методичні рекомендації / О.І. Тихонов, Л.В.Бондарева, Т.Г.Ярних, Н.Ф.Орловецька та ін.; За ред. О.І.Тихонова і Т.Г.Ярних. – Х.: Вид-во НФаУ; Оригінал, 2005. – 184 с.
14. Справочник экстемпоральной рецептуры / Под ред. А.И.Тихонова. – К.: МОРИОН, 1999. – 496 с.
15. Технологія ліків. Навчально-методичний посібник: Навч. посіб. для студ. вищ. навч. закл. / О.І.Тихонов, П.А.Логвін, С.О.Тихонова, О.В.Мазулін, Т.Г.Ярних, О.С.Шпичак, О.М.Котенко; За ред.. О.І.Тихонова. – Х.: НФаУ; Оригінал, 2009. – 432 с.
16. Тихонов А.И., Ярных Т.Г. Технология лекарств: Учебн. для фармац. вузов и фак.: Пер. с укр. /Под ред. А.И. Тихонова. – Х.: Изд-во НФАУ; Золотые страницы, 2002. – 704 с.
17. Тихонов О.І., Ярних Т.Г. Технологія ліків: підручник для студентів фармацевтичних факультетів ВМНЗ України III – IV рівнів акредитації: Пер. з рос. / Під ред. О.І. Тихонова. – Вінниця: Вид-во НОВА КНИГА, 2004. – 640 с.
18. John F. Marriott, Keith A. Wilson, Christopher A. Langleyv, Dawn Belcher. Pharmaceutical Compounding and Dispensing. – Published by the Pharmaceutical Press. – 2010. – 288 p.
19. Reference materials for preparation to licensed examination «CROCK-2» on Chemist's Technology of Drugs: for English students of "Pharmacy" specialty: Practical aids. For individual student's work / Yarnykh T.G., Garkavtseva O.A., Buryak M.V. and others. - Kh., 2011. – 26 p.
20. Tikhonov A.I., Yarnykh T.G., Yuryeva A.B., Garkavtseva O.A. Chemist's Technology of Drugs: The manual for students of higher schools / Edited by A.I. Tikhonov and T.G. Yarnykh. – Kharkiv: NUPh; Original, 2011. – 424 p.
21. United State Pharmacopoeia. – XXIV ed. – Rockville: The United State Pharmacopeial, Inc., 2000. – 2569 p.
22. USP Pharmacists' Pharmacopoeia. – II ed. – Rockville. The United State Pharmacopeial, Inc., 2008. – 1519 p.
23. Workbook for Chemist's Technology of Drugs: A tutorial for the 3-st year English students of pharmaceutical higher schools and departments of "Pharmacy" specialty / T.G. Yarnykh, A.I. Tikhonov, O.A. Garkavtseva and others. – Kh.: PH of NUPh, 2011. – 137 p.