

Odessa National Medical University
Pharmaceutical Faculty
Department of Pharmacology and Pharmacognosy

Syllabus course

Production practice in pharmacognosy

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|-------------------------|--|
| Scope | 4 credits / 120 hours |
| Semester, year of study | IX semester, V year of study |
| Days, time, place | According to the schedule in the classroom 101 of the Department of Pharmacology and Pharmacognosy (pharmacognosy cycle). Street Malinowski - 37 |
| Teacher (s) | Rozhkovsky Yaroslav Vladimirovich, Doctor of Medicine, Professor Chernogoryuk Valeria Valerievna, Assistant |
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| Workplace | Office № 102 of the Department of Pharmacology and Pharmacognosy (pharmacognosy cycle). Street Malinowski - 37 |
| Consultations | Face-to-face consultations: Thursday from 15.00 to 17.00; Saturday from 9.00 to 13.00 Online consultations: Thursday from 15.00 to 17.00; Saturday from 9.00 to 13.00 via viber |

COMMUNICATION

Communication with students will be through face-to-face meetings. In case of transition to distance learning, communication with students will be carried out by means of E-mail and programs: Microsoft Teams, Zoom and Viber.

COURSE ANNOTATION

The subject of study of the discipline

The subject of study of the discipline "Production practice in pharmacognosy" - are practical skills and abilities in the procurement of standard LRS, which consists of the following stages: procurement of LRS of different morphological groups; primary treatment of LRS; drying taking into account morphological features and chemical composition of raw materials; bringing LRS to standard condition; packaging, labeling of LRS; storage of LRS ..

Prerequisites and postrequisites of the course (Place of discipline in the educational program):

a) is based on the study of students disciplines and integrates with these disciplines: pharmacognosy (drugs based on LRS, methodology of semi-synthesis), medical and biological physics (basic physical laws and equations related to the pharmacological effect of drugs, modern physical research methods), physical and colloid chemistry (basic physicochemical laws and equations that are related to the pharmacological effect of drugs), technology of dosage forms (modern dosage forms), organic chemistry and bioorganic chemistry (basics of chemical terminology, theoretical foundations of organic and bioorganic chemistry), pharmaceutical chemistry (chemistry of modern drugs, chemical bases of pharmacological effect), as well as Latin, botany, analytical chemistry, normal and pathological human physiology;

b) approves the basics of students' study of the following disciplines: pharmacognosy; pharmacology; medical botany; resource science of medicinal plants.

The purpose of the course.

The purpose of teaching the discipline "Industrial practice of pharmacognosy" is to consolidate, expand and improve theoretical knowledge gained by students in the course of pharmacognosy, as well as the acquisition, acquisition and improvement of practical skills and abilities to identify LR and morphologically related species; harvesting, drying and storage of LRS; basics of cultivation of LR and rules of ecologically clean production of LRS; identification of thickets of wild LR and providing recommendations for rational use of nature.

Tasks of the discipline :

- study of the issues of procurement of standard LRS;
- study of approaches to the procurement of LRS of different morphological groups;
- study of the issues of primary processing of LRS;
- study of drying methods taking into account morphological features and chemical composition of raw materials;
- study of ways to bring LRS to a standard state;
- study of approaches to packaging, labeling of LRS; storage of LRS

Expected results

According to the study of the discipline, students must

know:

- basic principles and principles of LR collection;
 - basic principles of cultivation of LR;
 - the main timing of harvesting, taking into account the phase of vegetation of the Republic of Latvia;
 - basics of processing, drying of LRS in accordance with the physicochemical properties of its biologically active substances;
 - methods of standardization and storage of LRS;
- rational use of LR thickets.

be able:

- to identify by external signs medicinal plants of forests, steppes, meadows, reservoirs and adjacent territories used in scientific medicine;
- to recognize and distinguish impurities of botanically related plant species by morphological features in order to obtain the official LRS;
- to get acquainted with the methods of introduction and cultivation of LR, methods of reproduction of natural thickets of LR;
- introduction into culture and cultivation of medicinal plants; carry out site selection, soil preparation and cultivation, seed varietal control, fertilizer application, planting material and seeds, nursery, crop care, soil cultivation, harvesting using good cultivation and production practices (GACP);
- to detect thickets of LR in natural phytocenoses, to conduct their mapping;
- to conduct a geobotanical description of LR and LRS, which were acquainted during the practice;
- to herbarium and properly design herbarium specimens of LR and morphologically related plants.
- determine the optimal timing of harvesting LRS morphological groups "leaves", "grass", "flowers", "bark", "rhizomes and roots", "seeds", "buds", taking into account the dynamics of accumulation of biologically active substances in LRS;
- to apply rational methods of collecting LRS of morphological groups "leaves", "grass", "flowers", "bark", "rhizomes and roots", "seeds", "buds";
- to instruct LRS procurers on safety rules when procuring raw materials of toxic and potent LR;
- to carry out primary processing of LRS of morphological groups "leaves", "grass", "flowers", "bark", "rhizomes and roots", "seeds", "buds", using modern equipment;
- to dry LRS containing polysaccharides, vitamins, essential oils, glycosides, phenolic compounds, cardiosteroids, tannins, alkaloids, in appropriate conditions using modern equipment and devices for drying;
- to carry out packing, marking of samples of LRS, considering features of chemical composition, according to the requirements of regulatory documentation and current orders;
- prepare the premises and provide appropriate conditions for storage of LRS;
- to store medicinal plant raw materials of different morphological groups depending on the chemical composition in accordance with the requirements of regulatory documentation and current orders;

COURSE DESCRIPTION

Forms and methods of teaching

The course will be presented in the form of practical (40 hours), organization of independent work of students (80 hours).

The study of the discipline should be implemented on the basis of methods of problem statement, heuristic, research, interactive (project method).

The content of the discipline

Topic 1 Acquaintance with the calendar plan, base of practice, the maintenance of the basic works, time and conditions of their performance; with the organization of work, tasks and internal regulations of the base of practice, the content of reporting on practice.

Topic 2 Types of plant groups, their ecological characteristics, species composition of LR and protected plants.

Topic 3 Diagnosis of official LR and possible impurities to them, distinctive features.

Topic 4 Acquaintance with biological features of LR, with methods and techniques of their cultivation.

Topic 5 Sowing, crop care, soil cultivation.

Topic 6 Organization of LRS procurement. Mastering the techniques of rational collection of LRS of different morphological groups.

Topic 7 Mastering the techniques of primary processing, drying LRS. The value of primary treatment to obtain benign LRS.

Topic 8 Bringing LRS to a standard state.

Topic 9 Detection of LR thickets. Frequency of operation of LR thickets.

Topic 10 Rare, endangered species of LR. Red and Green books of Ukraine. System of measures for protection, rational use of nature and reproduction of LR reserves in the region.

List of recommended reading

1. State Pharmacopoeia of Ukraine: in 3 volumes / State Enterprise "Ukrainian Scientific Pharmacopoeial Center for Quality of Medicines". - 2nd type. - Kharkiv: State Enterprise "Ukrainian Scientific Pharmacopoeial Center for Quality of Medicines", 2014. - Vol. 3. - 732 p.

2. Serbin AG, Sira LM, Slobodyanyuk TO Pharmaceutical botany. Textbook. - Vinnytsia: NEW BOOK, 2007. - 488 p.

3. Green Book of Ukraine / Under the general editorship of the corresponding member of the NAS of Ukraine JP Didukh. - К.: Альтерпрес, 2009. - 448с.

4. Pharmacognosy: a textbook (I-III years) / I.A. Бобкова, Л.В. Варлахова. - 3rd edition All-Ukrainian specialized publishing house "Medicine" 2018, 504p.

5. Pharmacognosy: basic textbook. for students. higher pharmacy. textbook zakl. (pharmac. f-tiv) IV level of accreditation / V.S. Кисличенко, І.О. Журавель, С.М. Marchyshyn and others; for order. V.S. Кисличенко. - Kharkiv: NUPh: Golden Pages, 2015. - 736 p.

6. Pharmacognosy: a textbook (I-III years) / I.A. Бобкова, Л.В. Варлахова. - 3rd edition All-Ukrainian specialized publishing house "Medicine" 2018, 504p.

7. Pharmacognosy: basic textbook. for students. higher pharmacy. textbook zakl. (pharmac. f-tiv) IV level of accreditation / V.S. Кисличенко, І.О. Журавель, С.М. Marchyshyn and others; for order. V.S. Кисличенко. - Kharkiv: NUPh: Golden Pages, 2015. - 736 p.

8. European Pharmacopoeia. - 8th ed.; - Druckerei C. H. Beck, Nordlingen (Germany), 2013.- 3655 p.

10. Workshop on the identification of medicinal plant raw materials: textbook.

way. / [B. M. Kovalev, SM Marchyshyn, OP Khvorost and others]; for order. VM Kovaleva, SM Marchishin. - Ternopil: TSMU, 2014. - 250 p.

EVALUATION

Methods of current control: Evaluation of the success of the study of each topic of the discipline is performed on a traditional 4-point scale.

Current performance is calculated as the average current score, ie the arithmetic mean of all grades obtained by the student on a traditional scale, rounded to 2 (two) decimal places , for example 4.75.

Assessment of current control in the discipline:

The value of the assessment is "**excellent** ": the student shows special creative abilities, is able to acquire knowledge independently, without the help of the teacher finds and processes the necessary information, is able to use acquired knowledge and skills to make decisions in unusual situations, convincingly argues answers.

The value of the grade "**good** ": the student is fluent in the studied amount of material, applies it in practice, freely solves exercises and problems in standard situations, independently corrects mistakes, the number of which is insignificant.

The value of the assessment is "**satisfactory** ": the student reproduces a significant part of the theoretical material, shows knowledge and understanding of the basic provisions; with the help of the teacher can analyze the educational material, correct mistakes, among which there are a significant number of significant ones.

The value of the assessment is "**unsatisfactory** ": the student has the material at the level of individual fragments that make up a small part of the study material.

Only those students who do not have academic debts and have an average score of at least 3.00 for their current academic activity are allowed to take the final attestation.

Assessment of the current test control in the discipline:

- "5" - 100-91% of correct answers;
- "4" - 90-71% of correct answers;
- "3" - 70-60.5% of correct answers;
- "2" - less than 60% of correct answers.

Forms and methods of final control:

The form of final control of knowledge in the discipline is a test.

The average score for the discipline is translated into the traditional grade from the discipline on a 4-point scale and is regarded as the ratio of this arithmetic mean to the percentage of mastering the required amount of knowledge in this subject.

| GPA for discipline | The ratio received by the student average score for the discipline to the maximum possible value of this indicator | Score from discipline on a 4-point scale (traditional assessment) |
|--------------------|--|---|
| 4.45 - 5.0 | 185-200 | 5 |
| 3.75 - 4.44 | 151-184 | 4 |
| 3.0 - 3.74 | 120-150 | 3 |

Independent work of students .

Students' independent work, which is provided by the topic of the lesson along with the classroom work, is assessed during the current control of the topic in the relevant lesson. Assimilation of topics that are submitted only for independent work is checked at the last lesson.

COURSE POLICY ("rules of the game")

Deadline and recompilation policy: tasks to be completed on time according to the deadline. For late performance of the task the student receives an unsatisfactory grade. Rearrangement is carried out according to the approved schedule.

Academic Integrity Policy :

Observance of academic integrity by students of education provides:

- ♦ independent performance of educational tasks, tasks of current and final control of learning outcomes (for persons with special educational needs this requirement is applied taking into account their individual needs and opportunities);
- ♦ links to sources of information in the case of the use of ideas, developments, statements, information.

Policy attendance and tardiness . To obtain a satisfactory grade, it is mandatory to attend and work in classrooms (lectures and seminars). The student is allowed to be late for no more than 10 minutes.

Mobile devices: You can use mobile devices in class with the permission of the teacher.

Audience behavior:

While in the audience are important: respect for colleagues; tolerance for others; susceptibility and impartiality; the ability to disagree with the opinion, but to respect the personality of the opponent (during discussions); careful argumentation of the opinion; adherence to the ethics of academic relations.