COURSE DESCRIPTION CARD - SYLLABUS

Course name
Technology of phytotherapeutic products and cosmetics [S1IFar2>TLRiK]

Course

Field of study
Pharmaceutical Engineering

Year/Semester
2/4

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
15

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge of plant raw materials and their active compounds.

Course objective

To acquaint the student with methods of obtaining active compounds from plant materials in laboratory and industrial conditions based on modern technologies and under the principles of good laboratory practice. Students acquire the skills to prepare traditional forms of herbal and cosmetic preparations and understand the role and place of raw materials of natural origin in herbal medicine and cosmetology.

Course-related learning outcomes

Knowledge:
1. The student knows plant raw materials and methods of extracting active compounds from plants in the pharmaceutical industry. [K_W13]
2. The student knows methods of searching for new herbal medicines and the mechanisms of action of

natural substances in herbal medicines and cosmetic preparations. The student understands the pharmacopeial standards and norms associated with pharmaceutical engineering. [K_W24]
3. The student has detailed / particular knowledge of plant substances for pharmaceutical and cosmetic use, dietary supplements, and their production. [K_W25]
4. The student knows the apparatus and methods used in the technology of herbal medicine and cosmetic preparations. [K_W21]

Skills:
1. The graduate can use the literature describing methods of qualitative and quantitative assessment of plant material (Company Standards, Polish Pharmacopoeia) in Polish and a foreign language (European Pharmacopoeia). [K_U8]
2. Can apply basic techniques for isolating active compounds from plant materials. [K_U9]
3. Can prepare a traditional form of herbal medicine and cosmetics preparations. [K_U9]
4. Can correctly use raw plant materials in medicinal and cosmetic formulations. [K_U9]

Social competences:
1. The skills of responsible teamwork. [K_K2]
2. The student is ready to make decisions independently. Has a sense of responsibility for one's own work and is willing to comply with the principles of teamwork and take responsibility for collaborative tasks. They are aware of their responsibility for their work and responsibility for the results of the teamwork. [K_K2]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Discussion during the lecture. Active participation in the proposed classes. Observation of student work during laboratory classes and assessment of the ability to work independently and in a team. Correct performance of tasks and presentation of the laboratory report. Written final test - carried out as a single-choice test and open questions, which includes content presented in lectures and laboratory classes. Positive assessment is given to students with a minimum of 60% correct answers.

Programme content

The program covers the following topics:
1. Obtaining and using raw materials of natural origin in medicinal and cosmetic products.
2. Forms of cosmetics and drugs.
3. Mechanisms of action of preparations of natural origin.
4. New drugs and cosmetics of plant origin.

Course topics

Lectures: Introduce the possibilities of plant raw materials in modern medicinal and cosmetic preparations, indicating the sources from which they are obtained and learning the basic technological processes used in the production of plant medicines; search for new herbal medicines and plant cosmetics.
Laboratory classes: the use of plant raw materials in cosmetics and the pharmaceutical industry; obtaining plant extracts, isolating natural compounds used in plant medicines and cosmetics; forms of cosmetics and medicinal preparations based on natural resources - creating recipes and making various forms of medicines and cosmetics; visits to production plants.

Teaching methods

Lecture: multimedia presentation. Laboratory classes: visits to pharmaceutical companies specializing in manufacturing natural medicines and cosmetics; precise execution of the tasks entrusted to the teacher.

Bibliography

Basic:
1. Sznitowska M. and Jambor J. (red.): Technologia Produktów Roślinnych. Leki, suplementy i kosmetyki; MedPharm Polska, Wrocław 2023.
2. Müller R.H., Hildebrand G.E. (red.): Technologia nowoczesnych postaci leków; PZWL, Warszawa 2003.

3. Strzelecka H. et al.: Chemiczne metody badań roślinnych surowców leczniczych: podręcznik dla studentów farmacji; Wydawnictwo Lekarskie PZWL, Warszawa 1987.

Additional:
1. Nowak G., Nawrot J. (red.).: Leki pochodzenia naturalnego. Wyd. UMP. Poznań 2018.
2. Martini M.-C. Kosmetologia i farmakologia skóry. PZWL. Warszawa 2007.
3. Malinka W.: Zarys chemii kosmetycznej. Volumed, Wrocław 1999.
4. Zieliński R.: Surfaktanty - towaroznawcze i ekologiczne aspekty ich stosowania. Wyd. Akademii Ekonomicznej, Poznań 2000.

Breakdown of average student's workload

	Hours	ECTS
Total workload	55	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	25	1,00