



**CD 8.5.1 DISCIPLINE SYLLABUS FOR
UNIVERSITY STUDIES**

Edition: 09

Date: 08.09.2021

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**FACULTY OF PHARMACY
STUDY PROGRAM PHARMACY**

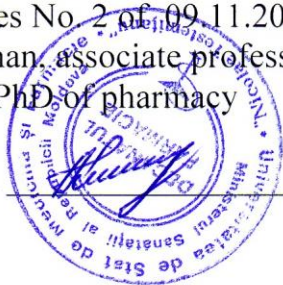
CHAIR OF PHARMACOGNOSY AND PHARMACEUTICAL BOTANY

APPROVED

at the meeting of the Commission for Quality Assurance and Evaluation of the Curriculum in Pharmacy

Minutes No. 2 of 09.11.2021
Chairman, associate professor,
PhD of pharmacy

Uncu Livia



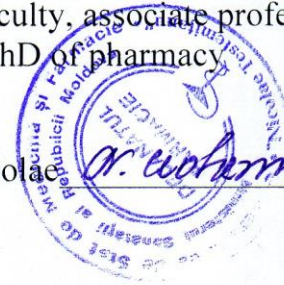
APPROVED

at the Council meeting of the Faculty of Pharmacy

Minutes No 3 of 16.12.2021

Dean of Faculty, associate professor,
PhD of pharmacy

Ciobanu Nicolae



APPROVED

at the meeting of the Chair of pharmacognosy and pharmaceutical botany

Minutes No. 27 of 30.06.2021

Head of chair, professor, Dr. hab. of biol.

Calalb Tatiana

SYLLABUS

DISCIPLINE ALTERNATIVE AND COMPLEMENTARY PHYTOTHERAPY

Integrated studies

Type of course: **Free choice discipline**

Curriculum was elaborated by author:

Cojocaru-Toma Maria, PhD of pharmacy, associate professor

Chisinau, 2021



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I. INTRODUCTION

- **General presentation of the discipline: place and role of the discipline in the formation of the specific competences of the professional / specialty training program**

Alternative and complementary phytotherapy is a branch of integrative medicine by using medicinal plants to modify mood, cognitive function, or population health. Alternative and complementary phytotherapy are used alongside allopathic techniques, promote knowledge and use of medicinal plants, vegetal products and modern phytodrugs, presents new international trends related to the phytotherapeutic strategy of the diseases that can benefit from preventive or curative treatment.

The study of the alternative and complementary phytotherapy course will enable future pharmacists and doctors to know other methods of prophylaxis and treatment applied in phytotherapeutic practice.

The acquired skills and knowledge will complement the students' knowledge and will enable the training of doctors who will apply complex therapies, including complementary and alternative therapies to disease prevention and better treatment success.

- **Mission of the curriculum (aim) in professional training**

Phytotherapeutic counseling on the use of alternative and complementary therapies: phytotherapy, homeotherapy, aromatherapy, apitherapy, gemmotherapy, diettherapy, phyto-balneotherapy etc..

Discipline alternative and complementary phytotherapy offers the possibility to know the trends of modern phytotherapy, interactions of vegetal products-supplement-food and familiarity with the experience and traditions of different peoples.

- **Language (s) of the course:** Romanian, English;
- **Beneficiaries:** students of the IIIrd year, Faculty of Pharmacy, Medicine, Preventive Medicine.

II. MANAGEMENT OF THE DISCIPLINE

| | | | |
|---------------------------------------|-------------------------|--|-----------|
| Code of discipline | | | |
| Name of the discipline | | Alternative and Complementary Phytotherapy | |
| Person(s) in charge of the discipline | | PhD, associate professor, Cojocaru-Toma Maria | |
| Year | IIIrd | Semester/Semesters | VI |
| Total number of hours, including: | | | 60 |
| Lectures | 15 | Practical/laboratory hours | |
| Seminars | 30 | Self-training | 15 |
| Clinical internship | | | |
| Form of assessment | Exam | Number of credits | 2 |



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III. TRAINING AIMS WITHIN THE DISCIPLINE

At the end of the discipline study the student will be able to:

- **at the level of knowledge and understanding:**
 - concepts of phytotherapy, homeotherapy, aromatherapy, apitherapy, diettherapy, phyto-balneotherapy;
 - applications of alternative and complementary phytotherapy;
 - interaction between vegetal products-supplement –food.
- **at the application level:**
 - the rational use of products from vegetal origin;
 - the reasoning of the role of balanced nutrition in maintaining of the health;
 - phytotherapeutic counseling of patients in the use of alternative and complementary therapies.
- **at the integration level:**
 - to appreciate the role of alternative and complementary phytotherapy in the context of contemporary pharmacy;
 - to promote phytotherapeutic abilities and knowledge;
 - to be able to evaluate and self-assess the knowledge in the field;
 - to be able to assimilate the new developments in alternative and complementary phytotherapy.

IV. PROVISIONAL TERMS AND CONDITIONS

Alternative and complementary phytotherapy is a faculty discipline, the study of which at the university stage will allow future doctors and pharmacists to know the alternative and complementary methods that applied in phytotherapeutic practice. Good knowledge of the discipline requires knowledge in the field of Anatomy, Pharmaceutical botany, Physiology, Biochemistry, Pharmacology, and communication and team work skills, etc.

V. THEMES AND ESTIMATE ALLOCATION OF HOURS

Lectures, practical hours/ laboratory hours/seminars and self-training

| No. | THEME | Number of hours | | |
|-----|---|-----------------|-----------------|---------------|
| | | Lectures | Practical hours | Self-training |
| 1. | Modern phytotherapy. Philosophy of natural medicine and applications in pharmaceutical practice. Trends in modern phytotherapy. | 2 | 2 | 1 |
| 2. | The general principles of phytotherapy. Vegetal product, active principles, medicinal species, phytopreparations medicinal species, phytopreparations Interactions of active principles: synergism, antagonism, risks and advantages. | 1 | 2 | 1 |
| 3. | Advantages and risks in the treatment of phytotherapeutic products. Vegetal products-supplement -food interactions. | 2 | 4 | 2 |



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| No. | THEME | Number of hours | | |
|------------------------|--|-----------------|-----------------|---------------|
| | | Lectures | Practical hours | Self-training |
| 4. | Alternative and Complementary Therapies: homeopathy, phytotherapy, aromatherapy. | 1 | 2 | 1 |
| 5. | Alternative and Complementary Therapies: acupuncture, kinetherapy, diet therapy, apitherapy, phytobalneology, heleoherapy. | 1 | 2 | 1 |
| 6. | Alternative and Complementary Phytotherapy in diseases of the cardiovascular and respiratory system. | 2 | 4 | 2 |
| 7. | Alternative and Complementary Phytotherapy in diseases of the nervous, digestive, immune system, etc. | 2 | 4 | 2 |
| 8. | Gemmotherapy – the component part of contemporary phytotherapy. Production technologies based on meristems. | 1 | 2 | 1 |
| 9. | Natural dietetics. Smartfood. The role of natural foods in maintaining of the health. | 1 | 2 | 1 |
| 10. | Traditional Chinese Medicine. History, present. Traditional Chinese Medicine based on medicinal plants. | 1 | 2 | 1 |
| 11. | Advising of patients in the rational use of vegetal and phytotherapeutic products. | 1 | 4 | 2 |
| Total -60 hours | | 15 | 30 | 15 |

VI. PRACTICAL ABILITIES PURCHASED AT THE END OF THE COURSE

Purchased practical tools:

- to develop skills of phytotherapeutic counseling of patients;
- to apply phytotherapy as a branch of alternative and complementary therapy, as well as other methods of prophylaxis and treatment applied in phytotherapeutic practice;
- to correctly apply products according to the nature of vegetal products and the group of chemical compounds in order to use them in phytotherapy;
- to contribute to the rational use of phytotherapeutic products in the context of alternative and complementary phytotherapy for disease prevention and better treatment success;
- the rules of collection, drying and primary processing of vegetal products;
- to apply new trends related to the phytotherapeutic strategy of diseases that can benefit from preventive or curative treatment.

VII. REFERENCE OBJECTIVES OF CONTENT UNITS

| Objectives | Content units |
|------------|---------------|
| | |



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Objectives

Content units

Theme (chapter) 1. Applications of Phytotherapy in pharmaceutical practice.

- to define the context of alternative and complementary phytotherapy;
- to know the advantages and disadvantages of phytotherapeutic treatment; to know notions of vegetal product and active principles;
- to know interactions of phytotherapeutical products, supplement and food;
- to define the principles of phytotherapeutic counseling.

Philosophy of naturist medicine.
Modern phytotherapy, her applications in pharmaceutical practice.
Advantages and risks of treatment with phytotherapeutical products. Conditioning and standardization of vegetal products.
Interactions of phytotherapeutical products, supplement and food.
Trends of modern phytotherapy and principles of phytotherapeutic counseling.

Theme (chapter) 2. The complementary and alternative therapies.

- to know the advantages of alternative and complementary therapy;
- to define the branches of alternative and complementary therapy;
- to know the applications of alternative and complementary therapy.

Concepts of alternative and complementary therapy, the applications in practice: homeopathy, phytotherapy, aromatherapy, acupuncture, apitherapy, phytobalneology, kinetotherapy, diettherapy, heleoherapy, etc.
Advantages and risks.
Phytotherapeutic counseling in the application of alternative and complementary therapies.

Theme (chapter) 3. Alternative and Complementary Phytotherapy in the systemic diseases.

- to know the application of alternative and complementary phytotherapy in respiratory, cardiovascular, nervous, digestive, immune system diseases;
- to become familiar with the vegetal and phytotherapeutic products used in systemic diseases.

Alternative and complementary phytotherapy in systemic diseases. Applications of phytotherapy in medical practice. World and national statistics on pathologies of the cardiovascular system, respiratory, nervous, digestive, immune, bone, etc.
Medicinal plants, vegetal and phytotherapeutic products used in systemic diseases.
Mechanisms of action, particularity in administration and phytotherapeutic counseling.

Theme (chapter) 4. Gemmotherapy. Dietotherapy.

- to understand what it is the vegetal products based on meristems;
- familiarization with producing plants and the types of products – gemmaederivates;
- to understand the principles and need of balanced nutrition;
- the role of vegetal food in diettherapy.

Gemmotherapy/ meristemotherapy.
The active principle in gemmoderivates.
Advantages and potential risk factors of vegetal products based on meristem..
Plants producing gemmaederivates.
Techniques for the harvesting, processing and consumption of therapeutic and food products, based on meristems.



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Objectives

Content units

Getting of the diet and physiological/
balanced nutrition.
The natural compounds in vegetal food and
their use in the human body.

Theme (chapter) 5. The Traditional Chinese Medicine

- to define the basic theoretical models of the Traditional Chinese Medicine;
- to correlate the Traditional Chinese Medicine with modern medicine;
- to know the principles of Traditional Chinese Medicine based on medicinale plants;
- to know the interactions of Traditional Chinese Medicine, medicines products and food..

The Traditional Chinese Medicine (TCM).
The basic theoretical models of TCM.
The correlation of MTC and modern medicine.
TCM based of medicinale plants.
Chemical and pharmacological classification of active principles used in TCM.
Interactions, synergism and antagonism.

VIII. PROFESSIONAL (SPECIFIC (SC) AND TRANSVERSAL (TC) COMPETENCES AND STUDY OUTCOMES

✓ **Professional (specific) (SC) competences**

- PC1. Knowledge, understanding and use of specific terms of alternative and complementary phytotherapy.
- PC2. Application of phytotherapeutic techniques counseling of patients on the use of alternative and complementary therapies.
- PC3. Use and adaptation of theoretical knowledge from the field of alternative and complementary phytotherapy in situations of practical activity.
- PC4. Knowledge of alternative and complementary therapies: phytotherapy, homeotherapy, aromatherapy, apitherapy, gemmotherapy, phytobalneology, acupuncture, kinetotherapy, dietotherapy, balneotherapy, heliotherapy etc.

✓ **Transversal competences (TC)**

- TC1. Responsible execution of professional tasks with the application of values of professional ethics, tendency to perfect knowledge and practical skills, selection of critical analysis and formulation of conclusions, observance of ethical and deontological rules.
- TC2. Ability to social interaction and group activity, priority determination in professional training.
- TC3. Fitting in to interdisciplinary projects, extracurricular activities, performing activities and accomplish specific roles in team activities. Promoting intuitive spirit, dialogue, cooperation, positive attitude and respect for colleagues.

✓ **Study outcomes**

- to define the benefits of alternative and complementary phytotherapy: Traditional Chinese Medicine, gemmotherapy, dietotherapy, aromatherapy etc;
- to be competent the rational use of phytodrugs by knowing of the active principles and the actions;
- to know the principles of balanced nutrition;



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- to know the particularities of phytotherapeutic counseling in the application of alternative and complementary therapies;
- to be able to apply the gained knowledge in the research activity.

Note. *Study outcomes (are deduced from the professional competencies and formative valences of the informational content of the discipline).*

IX. STUDENT'S SELF-TRAINING

| No. | Expected product | Implementation strategies | Assessment criteria | Implementation terms |
|-----|---|--|--|----------------------|
| 1. | Working with information sources | Reading, comprehending and viewing information on the subject | Critical capacity to evaluate accumulated information | During the semester |
| 2. | Preparing and supporting of the presentations | Selection of the theme and establishment of the components of thematic project; Establishing the terms of the realization and the requirements; Mentioning of practical applications, creativity elements, conclusions and sources of bibliography; Including the reviews from teachers and colleagues. | The degree of penetration in the essence of the project theme; The level of scientific argumentation of necessity; Formation of the personal attitude, coherence of exposure and scientific correctness; The presentation method. | During the semester |

X. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

• *Teaching and learning methods used*

The Alternative and Complementary Phytotherapy discipline is taught in classical ways: with lectures, practical works and self training. They are used different methods and classical didactic methods, oriented towards the efficient acquisition and achievement of the objectives of the didactic process. In the theoretical course, along with the traditional methods (lectures-exposure), are used the modern methods with the information technologies. During the practical works are used individual forms and group activity. For the learning of the material are used different systems (scientific language, graphical and computerized language) and teaching materials (tables, schemes, herbarium, vegetable products, phytodrugs, etc.).

• *Applied teaching strategies / technologies (specific to the discipline)*

In the process of studying Alternative and Complementary Phytotherapy, the students acquire new methods and practical skills: they systematically learn to work, to think scientifically, to analyze, to recapitulate, to find the connection between theory and practice. Particular attention is paid to the student's individual work, content and organization.

• *Methods of assessment (including the method of final mark calculation)*

Current:



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The modality and volume of the material for the assessment of knowledge is determined at the chair meeting at the beginning of the academic year in such a way that are combined different methods of evaluation. The annual mark being made up of a totalization and individual work

Final: Exam

The exam of Alternative and Complementary Phytotherapy discipline (summative assessment) is a combined and consisting of the annual mark and exam (0,5/0,5).

Method of mark rounding at different assessment stages

| Intermediate marks scale (annual average, marks from the examination stages) | National Assessment System | ECTS Equivalent |
|--|----------------------------|-----------------|
| 1,00-3,00 | 2 | F |
| 3,01-4,99 | 4 | FX |
| 5,00 | 5 | E |
| 5,01-5,50 | 5,5 | |
| 5,51-6,0 | 6 | |
| 6,01-6,50 | 6,5 | D |
| 6,51-7,00 | 7 | |
| 7,01-7,50 | 7,5 | C |
| 7,51-8,00 | 8 | |
| 8,01-8,50 | 8,5 | B |
| 8,51-8,00 | 9 | |
| 9,01-9,50 | 9,5 | A |
| 9,51-10,0 | 10 | |

The average annual mark and the marks of all stages of final examination (computer assisted, test, oral) - are expressed in numbers according to the mark scale (according to the table), and the final mark obtained is expressed in number with two decimals, which is transferred to student's record-book.

Absence on examination without good reason is recorded as "absent" and is equivalent to 0 (zero). The student has the right to have two re-examinations.

VI. RECOMMENDED LITERATURE:

A. Compulsory:

1. Gîrd C. Curs de Farmacognozie-Fitochimie-Fitoterapie, vol.I, II, ediția a II-a, Ed. Printech, București, 2013.
2. Grigorescu E., Lazăr M., Stănescu U., Ciulei I. Index fitoterapeutic. Iași. Ed. Cantes, 2001.
3. Bojor O., Popescu O. Fitoterapie tradițională și modernă. București, Fiat Lux, 2001.



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4. Medicinal plants in China. WHO Regional publications Western Pacific Series No 2. Manila, 1997.
5. Cojocaru-Toma M. Produse vegetale și fitopreparate din Republica Moldova. Compendiu pentru lucrări de laborator la farmacognozie. Chișinău, 2017.
6. Pitera F., Surcel D., Soescu S. et al. Gemoterapia în România. Ed. Napoca Star, Cluj-Napoca, 2016.
7. Radulescu E. Alimentație inteligentă, Ed. "Viață și sănătate", București, 2003.

B. Additional

1. WHO Monographs on medicinal plants commonly used in the Newly Independent States (NIS), World Health Organization, Geneva, 2010.
2. Burnes J., Anderson L., Philipson J. Herbal medicines. Third edition, Pharmaceutical press, London, 2007.
3. Matcovschi C., Safta V. Ghid farmacoterapeutic. Editura „Vector”. Chișinău, 2010.
4. Ghid Terapeutic - Lista afecțiuni, boli și produse naturale de prevenire, vindecare, ameliorare recomandate de Hofigal. Homeopatie, Fitoterapie, Galenice, 2015.
5. Stanescu U., Miron A., Hancianu M., Aprotosoiaie C. Plante medicinale de la A la Z; monografiile ale produselor de interes terapeutic. Vol.I, Iasi: Ed. “Gr.T.Popa”, 2004.
6. Morel J. M. Le guide de la gemmothérapie: se soigner par les bourgeons, Éditions First-Gründ, 2012.
7. Шнорренбергер К. Учебник Китайской народной медицины для западных врачей. Москва, 2007.
8. Istudor V. Farmacognozie. Fitochimie. Fitoterapie, vol. III, Ed. Medicală, București, 2005
9. Nisteanu A. Farmacognozie. Chișinău, 2000.
10. Soescu S., Nițu S., Ponoran C., Olah N. Gemoterapia de la A la Z. Ed. Nikon, Cluj-Napoca, 2015.