



## ЦЕНТЪР ЗА ОБУЧЕНИЕ – БАН

1000 София  
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### **Basic Information:**

Course Title: **CONSERVATION AND SUSTAINABLE USE OF MEDICINAL PLANTS IN BULGARIA**

Lecturer: Ina Yosifova Aneva

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Total Teaching Hours: 30

### **Annotation** (up to 150 words)

The course aims to provide PhD students with an opportunity to apply a comprehensive approach to the study of plants, addressing the challenges in their conservation and the principles of sustainable use. At the beginning of the course, PhD students will be introduced to the floristic diversity of Bulgaria and the ways of implementing the regulatory framework for its conservation. From a theoretical standpoint, the course offers extensive knowledge on the biology, ecology, and chemical composition of medicinal plants. PhD students will explore traditional and contemporary methods for the use of medicinal plants in the prevention and treatment of various diseases. Special attention will be given to bioactive substances present in plant extracts with different polarities (primary and secondary metabolites) and their impact on human health. Additionally, methods for cultivation of rare plant species will be presented as a tool for their conservation and sustainable use.

### **Course content** (brief description by topics or modules)

Module 1. Floristic richness and plant biodiversity of Bulgaria

Module 2. Legislative framework and policies for plant conservation

Module 3. Biology and ecology of medicinal plants

Module 4. Chemical composition of medicinal plants

Module 5. Biologically active compounds and their impact on human health

Module 6. Traditional and modern applications of medicinal plants

Module 7. Methods for the study and analysis of medicinal plants

Module 8. Sustainable use and cultivation of medicinal plants

Module 9. Contemporary challenges in plant conservation

### **Teaching and assessment methods**

Lectures supported by multimedia presentations and discussions.

Assessment is based on continuous evaluation and a written examination covering the main topics of the course.

### **Competencies acquired as a result of training** (3–5 points)

- Acquisition of basic knowledge on the diversity, biology, and ecology of medicinal plants.
- Familiarization with the main approaches and methods for conservation and sustainable use of plant resources.



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- Understanding of the major groups of biologically active compounds and their importance for human health.
- Familiarization with contemporary methods for the study and application of medicinal plants.
- Development of skills for working with scientific literature and analyzing information related to medicinal plants and biodiversity.

### Literature:

- Aneva, I. 2013. *Traditional uses of Sideritis scardica* Griseb. in Bulgaria. In: *Medicinal Plants: Fundamental and Applied Problems*. Novosibirsk, 469–471.
- Aneva, I. Y., Zhelev, P., Bonchev, G., Kancheva, D. et al. 2022. DNA Barcoding Study of Representative *Thymus* Species in Bulgaria. *Plants*, 11(3).
- Aneva, I., Dimitrov, D., Vutov, V. 2015. Flora and Vegetation of Slavyanka Mountain. *Bulgarian Journal of Agricultural Science*, 21: 926–934.
- Aneva, I., Evstatieva, L. 2013. *Sideritis scardica* Griseb. – a critically endangered species in need of stronger protection. *Proceedings of Seminar of Ecology-2013*, Sofia, 120–124.
- Aneva, I., Zhelev, P. 2018. The ecological and floristic characteristics of populations of *Sideritis scardica* Griseb. in Olympus Mountains. *Ecologia Balkanica*, 10(2): 93–99.
- Aneva, I., Zhelev, P. 2019. Morphometric studies of *Sideritis scardica* Griseb. and *Sideritis syriaca* L. in their natural populations in Bulgaria. *Boletín Latinoamericano y del Caribe de Plantas Medicinales y Aromáticas*, 18(1): 71–80.
- Aneva, I., Zhelev, P., Kozuharova, E., Danova, K., Nabavi, S. F., Süntar, I. 2019. Genus *Sideritis*, section *Empedoclia* in Southeastern Europe and Turkey – studies in ethnopharmacology and recent progress of biological activities. *DARU Journal of Pharmaceutical Sciences*, 27(1): 407–421.
- Badal, S., Delgoda, R. *Pharmacognosy: Fundamentals, Applications and Strategies*. London: Academic Press, 2017.
- Bruneton, J. *Pharmacognosy, Phytochemistry, Medicinal Plants*. 2nd ed. Paris: Lavoisier Publishing, 1999.
- Dewick, P. M. *Medicinal Natural Products: A Biosynthetic Approach*. 3rd ed. Chichester: Wiley, 2009.
- Harborne, J. B. *Phytochemical Methods: A Guide to Modern Techniques of Plant Analysis*. 3rd ed. London: Chapman & Hall, 1998.
- Heinrich, M., Barnes, J., Gibbons, S., Williamson, E. M. *Fundamentals of Pharmacognosy and Phytotherapy*. 3rd ed. London: Elsevier, 2018.
- Wink, M. *Functions and Biotechnology of Plant Secondary Metabolites*. 2nd ed. Oxford: Wiley-Blackwell, 2010.

**Additional information** (optional) (e.g., special requirements, laboratory equipment, prior knowledge)

Basic knowledge in botany, ecology, biochemistry, or pharmacognosy is recommended.