

<b>2024/2025. ACADEMIC YEAR</b>	
<b>PROGRAM OF STUDY</b>	
<b>Full (Hungarian) name of the subject: GYÓGYNÖVÉNY- ÉS DROGISMÉRET (gyakorlat) II.</b>	
<b>Program:</b> Undivided program (pharmaceutical)	
<b>Schedule:</b> full time	
<b>Short name of the subject:</b> Pharmacognosy practice II.	
<b>English name of the subject:</b> Pharmacognosy II.	
<b>German name of the subject:</b> Pharmakognosie II.	
<b>Type of registration:</b> <u>obligatory</u> /obligatory elective/elective/criteria requirement	
<b>Neptun code of the subject:</b> GYKFMG130G2A (practice)	
<b>Responsible Department:</b> Department of Pharmacognosy	
<b>Responsible tutor</b> Dr. Ágnes Alberti	<b>Title, academic degree:</b> associate professor, Ph.D.
<b>Contact information:</b> - <b>phone:</b> +3620/825-8389 - <b>email:</b> alberti.agnes@semmelweis.hu	
<b>Name of the persons responsible for the teaching of the subject:</b> Ágnes Alberti Orsolya Csernák Ida Fejős Csenge Anna Felegyi-Tóth Nóra Gampe Ákos Rácz Eszter Riethmüller Attila Ványolós	<b>Title, academic degree:</b> associate professor, Ph.D. assistant professor, Ph.D. assistant professor, Ph.D. assistant lecturer, Ph.D. assistant professor, Ph.D. assistant professor, Ph.D. assistant professor, Ph.D. associate professor, Ph.D.
<b>Class per week:</b> 4 practices	<b>Credit point(s):</b> 2 credits practice
<b>Professional content, intent of acquirement and its function in order to implement the goals of the program:</b> The aim of the course is to acquaint pharmacy students with medicinal plants, herbal drugs and the analytical methods applied in their quality assurance. By doing so, it contributes to the education of pharmacy students to become key experts in herbal medicines. It contributes to the training of students with modern knowledge of pharmacognosy at a time when the knowledge about natural substances and herbs has come to the fore and has expanded with new aspects due to European harmonization.	
<b>Short description of the subject:</b> The topics of the classes follow the biogenetic system of plant materials. It represents a shift in proportion and, in part, selection in the curriculum, that sufficiently emphasizes the importance of knowledge of herbal drugs and their active ingredients that are important in therapeutic practice. At the same time, it provides knowledge in the context of structure-activity relationships for the sufficient processing of newly emerging herbal drugs, possibly of foreign origin, based on their chemical groups. It also introduces the requirements of the European Pharmacopoeia (Ph. Eur.) regarding herbal drugs and preparations. Thus, it provides knowledge of all herbal drugs and active substances that serve as raw materials for phytopharmaceuticals (including those that will soon become traditional OTC medicines) and preventive products (dietary supplements). Knowledge of plant material: drug recognition; macroscopic and microscopic examination. Detection of active ingredients and constituents of herbal drugs (preparation, extraction and purification techniques, general and specific chemical reactions, chromatographic methods), quantitative evaluations (pharmacopoeial and standard methods) and isolation of individual components or selective determination by complex chromatographic and spectroscopic methods. Application of herbal drugs based on their positive effects in prevention, phytotherapy and improving quality of life.	

<b>Course data</b>							
<b>Recommended term</b>	<b>Contact hours (lecture)</b>	<b>Contact hours (practice)</b>	<b>Contact hours (seminar)</b>	<b>Individual lectures</b>	<b>Total number of contact hours/semester</b>	<b>Normal course offer</b>	<b>Consultations</b>
7th semester	-	56	-	-	56	<u>Autumn semester*</u> Spring semester Both semesters (* Please underline)	--
<b>Program of semester**</b>							
<b>Topics of theoretical classes (pro week): -</b>							

<p><b>Topics of practical classes (pro week):</b></p> <p>Week 1: Work and fire safety. Requirements of the semester. Investigation of unknown sample.</p> <p>Week 2: Essential oil containing drugs. I.</p> <p>Week 3: Essential oil containing drugs II.</p> <p>Week 4: Investigation of drugs containing valepotriates and bitter substances.</p> <p>Week 5: Saponins and chief saponin drugs. Methods used in the identification and quality control of saponins.</p> <p>Week 6: Cardioactive glycosides and their main drugs I</p> <p>Week 7: Cardioactive glycosides and their main drugs II.</p> <p>Week 8: Tropane alkaloid containing drugs. Methods of extracting alkaloids from plant materials.</p> <p>Week 9: Isoquinoline alkaloids, their chief drugs</p> <p>Week 10: Quinoline and indole alkaloids, their main drugs</p> <p>Week 11: Pseudo- and protoalkaloids, their main drugs I.</p> <p>Week 12: Pseudo- and protoalkaloids, their main drugs II.</p> <p>Week 13: Plant biotechnology</p> <p>Week 14: Individual task.: Natural product development. Identification of crude drugs based on the methods prescribed in the Ph. Eur.</p>
<b>Schedule of consultations:</b> on demand
<b>Course requirements</b>
<b>Prerequisites:</b> Pharmacognosy I.
<b>Conditions of attending the classes, amount of acceptable absents, way of presentation of leave, opportunity for makeup:</b> Based on the current Study and Exam regulations
<b>The grading method; the conditions for getting the signature; the number, topic(s) and date(s) of the mid-term assessments, (reports, term tests), and the process in which they contribute to the final grade; and the possibility of their retake or their upgrading retake (as provided in §§ 25-28 of the STUDY AND EXAMINATION REGULATIONS):</b>

During the semester, two midterms will be written based on the material of the practices. The midterms will also include drug recognition (examination of unknown drug mixtures, identification of unknown drug powders, recognition of microscopic preparations).

The first test takes place during the 7-8th week practice. The test consists of a theoretical and macromorphological examination part, including the studies carried out and described during the practices in weeks 1-7, as well as the material of the seminars. The grade obtained in this process will be counted with a single weight when determining the practical grade. In the 13-14th week lecture, an obligatory midterm exam will take place, the material of which covers the entire practical material of the semester. The midterm result of the grade is counted with double weight when determining the practical grade. The grade of the obligatory midterm must be at least satisfactory. The average of the grades must be at least 2.0. Midterm examinations may be retake and corrected two times each. The results of the first report can be corrected during two practices following the announcement of grades. We provide an opportunity to retake the obligatory midterm in an out-of-class time in week 14. No retakes can be done after the first week of the examination period.

**Requirements of signature (as provided for in STUDY AND EXAMINATION REGULATIONS § 29):**

Participation at the practices based on the current Study and Examination regulation. Submission and acceptance of reports. The average of the grades of the midterm examinations is at least 2.0. Successful completion of the obligatory midterm test.

**Number and type of projects students have to perform independently during the semester and their deadlines:** Preparation of a presentation in a chosen topic, performed at weeks 8-14.

**Type of the semester-end examination:** signature\*/practical grade\*/semi-final\*/final\* (*Please underline*)

**Examination requirements:** -

**Form of the semester-end examination:** written\*/oral\*/combined examination/practical examination/the assessment of completing project work (according to STUDY AND EXAMINATION REGULATIONS 30.§)\* (*Please underline*)

**The possibility and conditions for offering grades:** -

**A list of the basic notes, textbooks, resources and literature that can be used to acquire the knowledge necessary to master the curriculum and to complete the assessments, with exact description about which of them is required to acquire which part of the syllabus (e.g. description based on topics)), as well as the main technical and other aids and study aids that can be used:**

Materials of the practices and prescriptions: uploaded continuously to the Moodle system

List of structures

- Essential oils: linalool, thymol, thujone, eucalyptol,  $\alpha$ -bisabolol, menthol, menthone, chamazulene, camphor
- Bitter substances: gentiopicroside, cnicin, marrubiin, valtrate
- Triterpenes: ginsenoside Rg1, lanatoside A, lanatoside B, lanatoside C, purpureaglikoside A, digoxin, gitoxin
- Tropane alkaloids: atropin, scopolamin, L-hioscyamin
- Quinoline, isoquinoline and indole alkaloids: cinchonidin, cinchonin, quinine, quinidine, papaverin, morphin, berberin, chelidonin, emetin, strychnin
- Proto- and pseudoalkaloids: caffeine, theophylline, theobromin, capsaicin

Drugs to recognize (for practice midterms)

- Essential oils: Absinthii herba, Anisi fructus, Carvi fructus, Caryophylli flos, Cinnamomi cortex, Coriandri fructus, Foeniculi dulcis fructus, Juniperi galbulus, Lavandulae flos, Matricariae flos, Menthae crispae folium, Menthae piperitae folium, Millefolii herba, Rosmarini folium, Salviae officinalis folium, Thymi herba
- Bitter substances, iridoids: Absinthii herba, Cardui benedicti herba, Centaurii herba, Gentianae radix, Valerianae radix
- Triterpene derivatives: Calendulae flos, Convallariae folium, Digitalis lanatae folium, Ginseng radix, Hederae folium, Hippocastani semen, Liquiritiae radix, Strophanthi semen, Digitalis lanatae folium, Digitalis purpureae folium, Convallariae folium
- Tropane alkaloids: Belladonnae folium, Stramonii folium
- Benzil-izokinolin-, kinolin- és indolvázak alkaloidok: Chelidonii herba, Cinchonae cortex, Ipecacuanhae radix, Papaveris maturi fructus, Secale cornutum, Strychni semen, Vincae minoris herba
- Proto- and pseudoalkaloids: Camelliae sinensis non fermentata folia, Capsici fructus, Coffeae semen, Colae semen, Colchici semen

**In the case of a subject lasting more than one semester, the position of the teaching/research department on the possibility of parallel enrolment and the conditions for admission\*\*\*\*:**

yes\*/no\*/on and individual assessment basis\* (*Please underline*)

**The course description was prepared by:**

Dr. Nóra Gampe

**\*\* A tantárgy tematikáját oly módon kell meghatározni, hogy az lehetővé tegye más intézményben a kreditismerési döntéshozatalt, tartalmazza a megszerzendő ismeretek, elsajátítandó alkalmazási (rész)kézségek, (rész)kompetenciák és attitűdök leírását, reflektálva a szak képzési és kimeneti követelményeire.**