

PHARMACOGNOSY II

Code number: NP18-38

Cycle: Undergraduate

Semester: 6th

Course type

	Background/General knowledge
x	Scientific area (pharmacy)

Credit units (ECTS): 6

Lectures (hours per week): 3

Tutorial (hours): -

Laboratory (hours per week): 2

Course coordinator: Anastasia Karioti, Assistant Professor

Tutors:

1) Anastasia Karioti, Assistant Professor

Office 317b, 3rd floor Biology/Pharmacy building.

Office hours: Monday to Friday 11-12 π.μ.

contact: e-mail (akarioti@pharm.auth.gr)

2) Diamanto Lazari, Associate Professor

Office 317a, 3rd floor Biology/Pharmacy building.

Office hours: Monday to Friday 11-12 π.μ.

contact: e-mail (dlazari@pharm.auth.gr)

3) Dr. Cryssi Gavrieli, (RLT'S)

Office 316A, 3rd floor Biology/Pharmacy building.

Office hours: Monday to Friday 11-12 π.μ.

contact: e-mail (gabrieli@pharm.auth.gr)

Aims of the course: Students should become familiar with the basic concepts of terpenoids, steroids and their derivatives. To this end, the physical, chemical and biological properties, are examined, along with their biosynthesis. Furthermore, herbal drugs rich in terpenoids with use in clinical practice are discussed. The selection of the medicinal plants is based on EMA and European Pharmacopoeia. During laboratory exercises students carry out microscopic and phytochemical analysis of herbal drugs include in European Pharmacopoeia 5

Skills: Familiarization and deeper knowledge of the phytochemical groups of terpenoids, steroids and their derivatives and the medicinal plants which contain these groups.

Teaching methods: Lectures, tutoring and laboratory exercises and practices.

LABORATORY EXERCISES:

Microscopic and chemical assay of herbal drugs rich in terpenoids.

Microscopic assay: Folia Menthae, Folia Melissaе, Folia Lavandulae, Folia Salviae, Folia Digitalis, Radix Liquiritiae, Herba Absinthii, Flores Chamomillae, Radix Valerianae, Herba Cannabis, Radix Gentianae, Folia Eucalypti

Phytochemical assay: Digitalis purpurea: quantitative determination of cardiac glycosides.

Proposed Literature:

1. European Pharmacopoeia 5.
2. Gunnar Samuelson, Drugs of Natural Origin : A Textbook of Pharmacognosy.

3. J. Bruneton. Pharmacognosie, Phytochimie, Plantes médicinales 3th édition Ed. TEC/DOC Paris 1999.
4. R. Hansel, O. Sticher. Pharmacognosie-Phytopharmazie. 7 Auflage, Springer-Verlag, Berlin-Heidelberg 2004.
5. Notes distributed by the tutors.

Educational activities: Lectures and laboratory work.

Evaluation process and methods: Written exam at the end of the semester. To compute the final grade, the grade which is given by each tutor (3.33) is added. The examination at the end of the semester is performed at dates, time and place arranged by the department. The duration of the examination is 3 hours for the three tutors.

Use of TIC / Electronic distribution of the lectures: Lectures, notes, statements etc are presented in the corresponding place of the website of the School of Pharmacy.

Teaching: Teaching of this course is accomplished through lectures and laboratory exercises.

Teaching methods: Lectures (three hours per week).

(A) Lectures. Lectures (in total three hours per week) are given in the lecture room D12 (main building of the School of Natural Sciences)

B) Laboratory exercises

Students must perform laboratory exercises (2 hours per week). Laboratories take place a) in the Microscopy room of the 3rd floor of the Biology/Pharmacy building and b) in the Hall of chemistry of natural products of the 3rd floor of the Biology/Pharmacy building.

Contents of the course:

Introduction, Biosynthesis, Origin of C5 units-Mevalonic acid and MEP pathways

The following classes of constituents are described

Monoterpenes, Sesquiterpenes, Essential oils, Iridoids, Pyrethrins-pyrethroids, Sesquiterpene lactones, Diterpenes, Triterpenes and steroids, Cardiac glycosides, Oleoresins, Tetraterpenes and Carotenoids. For all phytochemical groups the biosynthesis and general physical, chemical and biological properties are described. Herbal drugs containing each group of terpenoids are selected according to the proposed literature, EMA and European Pharmacopoeia 9. For each herbal drug the chemical content, structures of the main constituents, pharmacological activity, toxicological effects, uses and possible interactions with drugs are described.