

# Botany I (Plant anatomy and morphology) (I<sup>st</sup> Year of study, I<sup>st</sup> SEMESTER)

**Credit value (ECTS) 5**

## **Course category**

Fundamental (Imposed)

## **Course holder:**

**Prof. Culiță SÎRBU, PhD**

## **Discipline objectives (course and practical works)**

The course aims to provide students the theoretical basis of the plant morphology and anatomy, and to form basic skills to act autonomously in observing, analyzing, interpreting and finding concrete solutions to the problems of the plant morphology and anatomy.

Practical works seek to familiarize students with the technical work in the laboratories of botany, in order to know the structure and the role of plant cells and tissues, as well as the structural and functional organization of the vegetative and generative organs of plants.

## **Contents (syllabus)**

<b>Course (chapters/subchapters)</b>
1. Plant cells
2. Plant tissues
3. The morphology and anatomy of the plant organs
3.1. The vegetative organs of plants: the root, stem and leaf
3.2. Plant multiplication: vegetative, asexual, sexual
3.3. The generative organs of plants: the flower, fruit and seed

<b>Practical works</b>
The microscope. Observing living cell of plants
The chloroplasts, chromoplasts and the cyclosis
Protecting tissues
Mechanical and conductive tissues
Root morphology. The primary structure of the root
Morphology of the stem. The primary structure of the stem
Secondary structure of the stem
Leaf morphology
Leaf anatomy
Flower: the perianth
Flower: the androecium and gynoecium. The inflorescence
Fruit: origin, classification. The fruits simple
Fruit: the fruits multiple, mericarpic, false and compound
The seed

## **Bibliography**

Păun M. et al. 1980 - Botanică. Edit. Did. și Ped. București.

- Răvăruț M., Anghel Gh. Buia Al., Nyarady A., Morlova I. 1967 - Botanica. Edit. Did. Ped. București.
- Sîrbu C. 2015 – Morfologia și anatomia plantelor – note de curs (pdf).
- Șerbănescu-Jitariu Gabriela, Toma C. 1980 – Morfologia și anatomia plantelor. Edit. Did. Ped., București.
- Toma C., 1975, 1977 - Anatomia plantelor (I, II). Litogr. Univ. “Al. I. Cuza”, Iași.
- Toma C., Niță Mihaela 1995 - Celula vegetală, Edit. Univ. “Al. I. Cuza”, Iași.
- Turenschi E., Pascal P., Sîrbu C., Paraschiv N.L. 1998 - Lucrari practice-Botanica, Litogr. USAMV Iași, 146 pp.
- Zanoschi V., Toma M., 1990 – Curs de Botanică. Partea I-a, Anatomie și Morfologie, Litogr. Inst. Agr. Iași.

### Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Written evaluation	60%
Periodic tests on the practical works	Tests with various items	30%
Active participation in learning activities	Evaluation along the way	10%

### Contact

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## Botany, II (Plant systematic) (I<sup>st</sup> Year of study, II<sup>nd</sup> SEMESTER)

Credit value (ECTS) 4

### Course category

Fundamental (Imposed)

### Course holder:

Prof. Culiță SÎRBU, PhD

### Discipline objectives (course and practical works)

The course aims to help students acquire the main concepts related to the plant classification (definition, hierarchy, nomenclature and identification of plant taxa); knowledge of general characteristics of the plant kingdoms; knowledge of general characteristics and principal representatives of the phyla *Bryophyta*, *Polypodiophyta*, *Pinophyta* and *Magnoliophyta*. The representative families, genera and species of the vascular flora of Romania are presented (which are more common in the natural environment or have greater importance in relation to human interests).

Practical works aim the direct observation and knowledge of the main vascular plant families, representative for the flora of Romania.

### Contents (syllabus)

Course (chapters/subchapters)
1. Plant systematic and taxonomy - general concepts
1.1. Classification systems
1.2. Taxonomic units (taxa)
1.3. Botanical nomenclature
1.4. The systematic overview of the plant world
1.5. The plants identification
2. The kingdoms <i>Monera</i> , <i>Protista</i> and <i>Fungi</i> (general characters)
3. The kingdom <i>Plantae</i> (general characters and systematic)
3.1. Phylums <i>Bryophyta</i> , <i>Polypodiophyta</i> and <i>Pinophyta</i>
3.2. Phylum <i>Magnoliophyta</i>
3.2.1. Class <i>Magnoliopsida (Dicotyledonatae)</i>
3.1.1. Subclass <i>Magnoliidae</i>
3.1.2. Subclass <i>Hamamelidae</i>
3.1.3. Subclass <i>Rosidae</i>
3.1.4. Subclass <i>Caryophyllydae</i>
3.1.4. Subclass <i>Dilleniidae</i>
3.1.6. Subclass <i>Asteridae</i>
3.2.2. Class <i>Liliopsida (Monocotyledonatae)</i>

Practical works
Phylum <i>Bryophyta</i> , Phylum <i>Polypodiophyta</i>
Phylum <i>Pinophyta</i> : Fam. <i>Pinaceae</i>
Phylum <i>Magnoliophyta</i> : Fam. <i>Ranunculaceae</i>

Fam. <i>Papaveraceae, Moraceae, Fagaceae, Juglandaceae</i>
Fam. <i>Rosaceae</i>
Fam. <i>Fabaceae</i>
Fam. <i>Aceraceae, Vitaceae, Apiaceae</i>
Fam. <i>Caryophyllaceae, Chenopodiaceae, Brassicaceae</i>
Fam. <i>Salicaceae, Tiliaceae, Malvaceae, Oleaceae, Convolvulaceae</i>
Fam. <i>Cuscutaceae, Solanaceae, Scrophulariaceae, Orobanchaceae</i>
Fam. <i>Lamiaceae</i>
Fam. <i>Asteraceae</i>
Fam. <i>Liliaceae, Amaryllidaceae, Iridaceae</i>
Fam. <i>Poaceae</i>

### **Bibliography**

- Anghel Gh., Ciocârlan V., Ulinici A. 1972 – Buruienile din culturile agricole și combaterea lor, Edit. Ceres, București.
- Ciocârlan V. 2009 – Flora ilustrată a României. Pteridophyta et Spermatophyta, Edit. Ceres, București.
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- Răvăruț M., Anghel Gh. Buia Al., Nyarady A., Morlova I. 1967 - Botanica. Edit. Did. Ped. București.
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- Sîrbu C., Paraschiv N.L. 2005 – Botanica sistematică. Edit. I.I. de la Brad Iași.
- Sîrbu C. 2016 – Sistematica plantelor – note de curs (pdf).
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