



No. \_\_\_\_\_ of \_\_\_\_\_

USAMV form 0101010105

**SUBJECT OUTLINE****1. Information on the programme**

<b>1.1. Higher education institution</b>	University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca
<b>1.2. Faculty</b>	Agriculture
<b>1.3. Department</b>	If Plant culture
<b>1.4. Field of study</b>	Agronomy
<b>1.5. Cycle of study<sup>1</sup></b>	Bachelor
<b>1.6. Specialization/ Study programme</b>	Agriculture
<b>1.7. Form of education</b>	Full time

**2. Information on the discipline**

2.1. Discipline name		<b>Botany 2</b>						
2.2. Course coordinator			Assoc. professor Rodica Varban					
2.3. Seminar/ laboratory/ project coordinator			Assoc. professor Rodica Varban					
2.4. Year of study	2.5. Semester	II	2.6. Evaluation type	summative	2.7. Discipline status	Content <sup>2</sup>	DF	
						Compulsoriness <sup>3</sup>	DI	

**3. Total estimated time (teaching hours per semester)**

<b>3.1. Hours per week – full time programme</b>	4	<b>out of which: 3.2. lecture</b>	2	<b>3.3. seminar/ laboratory/ project</b>	2
<b>3.4. Total number of hours in the curriculum</b>	56	<b>out of which: 3.5. lecture</b>	28	<b>3.6. seminar/ laboratory</b>	28
Distribution of the time allotted					<b>hours</b>
3.4.1. Study based on books, textbooks, bibliography and notes					30
3.4.2. Additional documentation in the library, electronic platforms and field experiences					30
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					20
3.4.4. Tutorials					4
3.4.5. Examinations					10
3.4.6. Other activities					
3.7. Total hours of individual study	94				
3.8. Total hours per semester	150				
3.9. Number of credits <sup>4</sup>	5				

**4. Prerequisites (if applicable)**

4.1. curriculum-related	Morphology and anatomy of plants
4.2. skills-related	-

**5. Conditions (if applicable)**

5.1. for the course	The university discipline requires the observance of the start and end time of the course.
5.2. for the seminar/ laboratory/ project	In practical works it is compulsory to consult the practical guide, each student will carry out an individual activity with the press materials made available and described in the practical works guide.

10. Fam. <i>Caprifoliaceae</i> , <i>Rubiaceae</i> , <i>Oleaceae</i> , <i>Convolvulaceae</i> , <i>Cuscutaceae</i> , <i>Boraginaceae</i> , <i>Solanaceae</i> , <i>Schrophulariaceae</i> , <i>Orobanchaceae</i> , <i>Plantaginaceae</i> general characters, representatives, biology	Lecture	1 Lecture
11. Fam. <i>Lamiaceae</i> , <i>Campanulaceae</i> , <i>Asteraceae</i> (Subfamily <i>Asteroideae</i> , <i>Cichorioideae</i> ) General characters, representatives, biology	Lecture	1 Lecture
12. Class <i>Liliopsida</i> ( <i>Liliatae</i> , <i>Monocotyledonatae</i> - general characters, classification. Fam. <i>Liliaceae</i> , <i>Amaryllidaceae</i> , <i>Iridaceae</i> , <i>Orchidaceae</i> , <i>Juncaceae</i> , <i>Cyperaceae</i> . General characters, representatives, biology	Lecture	1 Lecture
13. Fam. <i>Poaceae</i> - Subfam. <i>Festucoideae</i> Subfam. <i>Panicoideae</i> General characters, representatives, biology	Lecture	2 Lectures

8.2. PRACTICAL WORKS Number of hours - 28	Teaching methods	Observation
1. Binary nomenclature of plants. Systematic categories. Incg. <i>Bacteriophyta</i> , <i>Rodophyta</i> , <i>Chlorophyta</i> , <i>Mycophyta</i> - General characters, representatives, Inc. <i>Lichenophyta</i> , <i>Pteridophyta</i> .	Description and recognition of herbs	1 lab work
2. Inc. <i>Gymnospermatophyta</i> : Fam. <i>Cupressaceae</i> , <i>Taxodiaceae</i> , <i>Taxaceae</i> and <i>Pinaceae</i> - General characters and representatives.	Description and recognition of plants from grass and fresh material	1 lab work
3. Inc. <i>Angiospermatophyta</i> -Fam. <i>Ranunculaceae</i> , <i>Paeoniaceae</i> , <i>Berberidaceae</i> , <i>Papaveraceae</i> , <i>Fumariaceae</i> , <i>Ulmaceae</i> , <i>Moraceae</i> , <i>Cannabaceae</i> - general characters, representatives	Description and recognition of herbs	1 lab work
4. Fam. <i>Saxifragaceae</i> , Fam. <i>Rosaceae</i> : Subfam. <i>Spiraeoideae</i> Subfam. <i>Maloideae</i> , Subfam. <i>Prunoideae</i> , Subfam. <i>Rosoideae</i> - general characters, representatives	Description and recognition of herbs	1 lab work
5. Fam <i>Fabaceae</i> - general characters, representatives	Description and recognition of herbs	1 lab work
6. Fam. <i>Aceraceae</i> , <i>Linaceae</i> , <i>Geraniaceae</i> , <i>Vitaceae</i> , <i>Euphorbiaceae</i> , <i>Buxaceae</i> , <i>Loranthaceae</i> , <i>Cornaceae</i> , - general characters, representatives	Description and recognition of herbs	1 lab work
7. Fam. <i>Apiaceae</i> , <i>Caryophyllaceae</i> , <i>Amaranthaceae</i> , <i>Chenopodiaceae</i> , <i>Polygonaceae</i> , <i>Hypericaceae</i> , <i>Violaceae</i> - general, representative	Description and recognition of herbs	1 lab work
8. Fam. <i>Brassicaceae</i> . <i>Salicaceae</i> , <i>Cucurbitaceae</i> , <i>Tiliaceae</i> , <i>Malvaceae</i> , <i>Ericaceae</i> , <i>Primulaceae</i> -general characters, representatives	Description and recognition of herbs	1 lab work
9. Fam. <i>Caprifoliaceae</i> , <i>Rubiaceae</i> , <i>Oleaceae</i> , <i>Convolvulaceae</i> , <i>Cuscutaceae</i> , <i>Boraginaceae</i> , <i>Solanaceae</i> , <i>Schrophulariaceae</i> , <i>Orobanchaceae</i> , <i>Plantaginaceae</i> - general characters, representatives	Description and recognition of herbs	1 lab work
10. Fam. <i>Lamiaceae</i> , <i>Campanulaceae</i> , <i>Asteraceae</i> (Subfam. <i>Asteroideae</i> , <i>Cichorioideae</i> ) - general characters, representatives	Description and recognition of herbs	1 lab work
11. Class <i>Liliopsida</i> ( <i>Liliatae</i> , <i>Monocotyledonatae</i> - general characters. Fam. <i>Liliaceae</i> , <i>Amaryllidaceae</i> , <i>Iridaceae</i> , <i>Orchidaceae</i> , <i>Juncaceae</i> , <i>Cyperaceae</i> ..General characters, representatives	Description and recognition of herbs	1 labs work
12. Fam. <i>Poaceae</i> - Subfam. <i>Festucoideae</i> , Subfam. <i>Panicoideae</i> - General characters, representatives	Description and recognition of herbs	2 labs work
13. Practical examination	Plant recognition (herbarium, fresh material)	1 labs work

## 6. Cumulated specific competences

Professional competences	<p>The systematic recognition, identification and classification of plants according to morphological and anatomical criteria</p> <p>Characterization and classification of living organisms.</p> <p>Identification of the notions, principles, usual methods necessary for morphological, structural and physiological characterization and classification of living organisms.</p> <p>Explanation of the notions / principles of classification and characterization of living organisms from the evolutionary perspective</p> <p>Recognition and classification of species in taxa</p> <p>Explanation of the phylogeny of the Plant Kingdom</p>
Transversal competences	<p>Plant recognition</p> <p>Understanding the concept of evolution and biological progress</p> <p>Knowledge of the interactions between living systems and the abiotic and biotic environment</p>

## 7. Discipline objectives (based on the cumulated specific competences)

7.1. General objective	<p>Explanation of the notions / principles of classification and characterization of living organisms from the evolutionary perspective</p> <p>Presentation of the systematic categories with which they operate in systematic botany</p> <p>Knowledge of basic elements for the scientific nomenclature of plants.</p>
7.2. Specific objectives	<p>The systematic presentation of the plants, these cannot be understood without the concepts of cytology (plant cell study) and histology (plant tissue study). Knowledge of the specific flora of Romania and of the representatives of the main taxonomic units.</p> <p>Identification of plants in nature, to understand the various phenomena of the plant world.</p>

## 8. Content

8.1. COURSE Number of hours –	Teaching methods	Observation
<p><b>8.1.CURS</b> <b>Number of hours - 28</b></p> <p>1. Phylogenetic considerations on the plant kingdom. Investigation methods. Systematic categories.</p> <p>2. Inc. <i>Bacteriophyta</i>, <i>Rodophyta</i>, <i>Chlorophyta</i>, <i>Mycophyta</i> - General characteristics of these</p> <p>3. Inc. <i>Lichenophyta</i>, <i>Pteridophyta</i>. General characters and representatives. Inc. <i>Gymnospermatophyte</i>: Fam. <i>Cupressaceae</i>, <i>Taxodiaceae</i>, <i>Taxaceae</i> and <i>Pinaceae</i>. General characters and representatives.</p> <p>4. Inc. <i>Angiospermatophyta</i> - General characters and classification. Origin and evolution of angiosperms, spread of angiosperms. Class <i>Magnoliopsida</i> (<i>Magnoliatae</i>, <i>Dicotyledonatae</i>) - General characters and classification. Fam. <i>Magnoliaceae</i>, <i>Ranunculaceae</i>, <i>Paeoniaceae</i>, <i>Berberidaceae</i>, <i>Papaveraceae</i>, <i>Fumariaceae</i>, <i>Ulmaceae</i>, <i>Moraceae</i>, <i>Cannabaceae</i>, general characters, representatives, biology</p> <p>5. Fam. <i>Saxifragaceae</i>, Fam. <i>Rosaceae</i>: Subfamily. <i>Spiroideae</i> Subfamily. <i>Maloideae</i> Subfamily. <i>Prunoideae</i> Subfamily. <i>Rosoideae</i></p> <p>6. Fam. <i>Fabaceae</i> - general characters, representatives, biology</p> <p>7. Fam. <i>Aceraceae</i>, <i>Linaceae</i>, <i>Geraniaceae</i>, <i>Vitaceae</i>, <i>Euphorbiaceae</i>, <i>Buxaceae</i>, <i>Loranthaceae</i>, <i>Cornaceae</i>, general characters, representatives, biology</p> <p>8. Fam. <i>Apiaceae</i>, <i>Caryophyllaceae</i>, <i>Amaranthaceae</i>, <i>Chenopodiaceae</i>, <i>Polygonaceae</i>, <i>Hypericaceae</i>, <i>Violaceae</i>, general characters, representatives, biology</p> <p>9. Fam. <i>Brassicaceae</i>, <i>Salicaceae</i>, <i>Cucurbitaceae</i>, <i>Tiliaceae</i>, <i>Malvaceae</i>, <i>Ericaceae</i>, <i>Primulaceae</i>, general characters, representatives, biology</p>	<p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>Lecture</p>	<p>1 Lecture</p> <p>1 Lecture</p> <p>1 Lecture</p> <p>1 Lecture</p> <p>1 Lecture</p> <p>1 Lecture</p> <p>1 Lecture</p> <p>1 Lecture</p> <p>1 Lecture</p> <p>1 Lecture</p>

**Compulsory bibliography:**

1. M. Păun, E. Turenschi, S. Grigore, Botany, Didactic and Pedagogical Ed. Bucharest
2. Doina Stana, Siatematic Botany, 2007, AcademicPres, Cluj-Napoca,
3. Rodica Vârban, A. Stoie, Botany - Systematic Botany, practical works, 2013, AcademicPres Cluj-Napoca

Optional bibliography: Rodica Vârban, Florin Păcurar, Dictionary of botany, pratology and agroecology, 2011, Ed. Risoprint Cluj-Napoca,  
2. Atlases, determinants of plants, flora of Romania etc.

**9. Corroborating the discipline content with the expectations of the epistemic community representatives, of the professional associations and of the relevant employers in the corresponding field**

Botanical terminology is constantly compatible with international terms, used in particular by English and German literature. The international character of the biological and botanical terminology was emphasized.

**10. Evaluation**

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
<b>10.4. Course</b>	Classification of living organisms	summative(E)	80 %
	Phylogenetic considerations on the Plantae Kingdom		
	Basic elements regarding the scientific nomenclature of plants		
	General characters and representatives of the systematic categories studied		
<b>10.5. Seminar/Laboratory</b>	Description and recognition of plants from grass or living material, according to morphological characters	Practical exam	20%

**10.6. Minimum performance standards**

Mastery of scientific information transmitted through lectures and practical papers at an acceptable level. Obtaining the minimum mark for the practical exam is a condition of promotability.

- 1 Cycle of studies - choose one of the three options: Bachelor/Master/Ph.D.
- 2 according to the educational plan
- 3 Discipline status (compulsoriness) - choose one of the options - **DI** (compulsory discipline) **DO** (optional discipline) **DFac** (facultative discipline).
- 4 One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Filled in on  
04.09.2019

Course coordinator  
Phd. lecturer Rodica Varban

Laboratory work  
Phd. lecturer Rodica Varban

Approved by the  
department on  
05.09.2019

Head of the Department  
Pdh. professor Marcel M. DUDA