UNIVERSITATEA DE ȘTIINȚE AGRICOLE ȘI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
Facultatea de Agricultură
Calea Mănăștur 3-5, 400372, Cluj-Napoca, România
Tel: 0264-596.384, Fax: 0264-593.792
www.usamvcluj.ro

No._____of _____

USAMV form 0101040217

SUBJECT OUTLINE

1. Information on the programme

1.1. Higher education institution	**University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca**
1.2. Faculty	**Agriculture**
1.3. Department	**II Crop Science**
1.4. Field of study	Agronomy
1.5. Cycle of study[1]	Bachelor
1.6. Specialization/ Study programme	**Agriculture**
1.7. Form of education	Full time

2. Information on the discipline

2.1. Discipline name	**Medicinal and aromatic plants**							
2.2. Course coordinator	Prof.dr. Marcel M. DUDA							
2.3. Seminar/ laboratory/ project coordinator	Lecturer dr. Sorin MUNTEAN							
2.4. Year of study	IV	2.5. Semester	I	2.6. Evaluation type	continuous	2.7. Discipline status	Content[2]	DS
							Compulsoriness[3]	DI

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	4	out of which: 3.2. lecture	2	3.3. seminar/ laboratory/ project	2
3.4.Total number of hours in the curriculum	40	out of which: 3.5. lecture	20	3.6.seminar/laboratory	20
Distribution of the time allotted					hours
3.4.1. Study based on books, textbooks, bibliography and notes					5
3.4.2. Additional documentation in the library, electronic platforms and field experiences					5
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					5
3.4.4. Tutorials					2
3.4.5. Examinations					3
3.4.6. Other activities					
3.7. Total hours of individual study	20				
3.8. Total hours per semester	60				
3.9. Number of credits[4]	2				

4. Prerequisites (if applicable)

4.1. curriculum-related	Botany, Biochemistry, Pedology, Agrotechnics, Agrochemistry, Agricultural machinery, Phytopathology, Entomology, Irrigation, Plant Physiology, Phytotechnics.
4.2. skills-related	The student must have knowledge regarding: the chemical composition of the useful part of the plants, the biology, the morphology and physiology of the crop plants, the control of the weeds, the diseases, the pests of the cultivated plants and the products used for this purpose, the economic thresholds of damage, the adjustment of the agricultural machines.

5. Conditions (if applicable)

5.1. for the course	The course is interactive, students may ask questions regarding the content of the exposure. Academic discipline requires compliance for the time to start and end of the course. No other kind of activities are tolerated during the lecture, mobile phones must be closed.
5.2. for the seminar/ laboratory/ project	At practical works is mandatory to consult the practical book/tutor. Each student will conduct a single or small groups activity in the laboratory using materials available and described in the practical book/tutor. Academic discipline is imposed for the duration of works.

6. Cumulated specific competences

Professional competences	To know the agronomic language specific to the cultivation of field plants. To know the importance, the most important active principles, the uses of the plant raw material obtained from the medicinal plants, the biological, ecological and technological particularities of the most widespread cultivated medicinal plants. To be able to develop agricultural production technologies, organize and coordinate the production processes.
Transversal competences	To carry out professional tasks responsibly, under conditions of limited autonomy and qualified assistance. To be familiar with the roles and activities specific to teamwork and the distribution of tasks for the levels subordinated. To be interested in the continuous professional training in the field. To participate in the research activities in the experimental fields of the discipline. To train the skills necessary for setting up, maintaining, harvesting, conditioning and preserving the production of the main species of medicinal plants.

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

7.1. General objective	Acquiring knowledge regarding: the content of the plant raw material of medicinal plants in active principles, their importance and their use; biology, ecology, zoning and cultivation technology of the main medicinal plants in our country.
7.2. Specific objectives	Understanding the biological and ecological particularities of the main medicinal plants grown in our country. Acquiring information on the zoning of the studied medicinal plant species. Formation of the ability to apply the accumulated knowledge regarding the cultivation of medicinal plants in correlation with the vegetation factors and the technological elements specific to each species.

8. Content

8.1.COURSE, 20 hours		
GENERALITIES The importance of growing medicinal plants; History of medicinal plant cultivation worldwide; History of medicinal plant cultivation in our country; Classification of medicinal plants; Harvesting and conditioning the production; Possibilities of using the plant raw material.	Methods of teaching Lectures	Observations 1 lecture
Fam. *Apiaceae* (*Umbelliferae*) Coriander; Cumin; Fennel; Anise and Angelica.	Lectures	1 lecture
Fam. *Lamiaceae* (*Labiatae*): Mint.	Lectures	1 lecture
Lavender; Lemon balm; Sage; Clary sage; Moldavian dragonhead; Hyssop; Blue giant hyssop.	Lectures	1 lecture
Marjoram; Common thyme; Summer savory; Basil; Rosemary.	Lectures	1 lecture
Fam. *Asteraceae* (*Compositae*): Chamomile, Yarrow, Dalmatian chrysanthemum and Wormwood.	Lectures	1 lecture
Tarragon, St. Benedict's thistle, Artichoke, Common marigold, Cardus marianus, French marigold and Purple coneflower.	Lectures	1 lecture
Fam. *Valerianaceae*: Valerian, Fam. *Hypericaceae*: common Saint John's wort, Fam. *Iridaceae*: Bearded iris, Fam. *Araceae*: Sweet flag.	Lectures	1 lecture
Fam. *Ranunculaeae*: Black caraway, Fam. *Malvaceae*: Marshmallow, Hollybock and Dwarf mallow, Fam. *Fabaceae* (*Leguminosae*): Liquorice and Fenugreek, Fam. *Caryophyllaceae*: Baby's breath and Soapwort.	Lectures	1 lecture
Fam. *Polygonaceae*: Rhubarb. Fam. *Gentianaceae*: The great yellow gentian. Fam. *Plantaginaceae*: Ribwort plantain. Fam. *Brassicaceae* (*Cruciferae*): White	Lectures	1 lecture

mustard and Black mustard. Fam. *Scrophulariaceae*: Purple foxglove and Wooly foxglove. Fam. *Papaveraceae*: Opium poppy, Iranian poppy and Greater celandine. Fam. *Solanaceae*: Belladonna, Pricklyburr and Henbane. Fam. *Apocynaceae*: Periwinkle. Fam. *Liliaceae*: Autumn crocus. Fam. *Hypocreaceae*: Rye ergot fungus.	Lectures	1 lecture
8.2. PRACTICAL WORKS: 20 hours.		
The morphological peculiarities of the following species: Coriander, Cumin, Fennel and Angelica	Practical demonstration Self-study	1 laboratory work
Mint, Lavender; Lemon balm; Sage; Clary sage; Moldavian dragonhead; Hyssop; Blue giant hyssop; Marjoram; Common thyme; Summer savory; Basil; Rosemary; Chamomile, Yarrow;	Practical demonstration Self-study	1 laboratory work 1 laboratory work
Dalmatian chrysanthemum, Wormwood, Tarragon, St. Benedict's thistle, Artichoke, Common marigold, Cardus marianus, French marigold and Purple coneflower.	Practical demonstration Self-study	1 laboratory work
Conditioning, packaging and storage of medicinal plants in Plafar Cluj.	Practical demonstration	1 work in the field
Marshmallow, Hollybock, Dwarf mallow, Ribwort plantain, Purple foxglove and Wooly foxglove, Opium poppy, Iranian poppy and Greater celandine.	Practical demonstration Self-study	1 laboratory work
Belladonna, Pricklyburr, Henbane, Periwinkle, Rye ergot fungus.	Practical demonstration Self-study	1 laboratory work
Recognition of the field of medicinal plants (Botanical Garden)	Practical demonstration	1 work in the field
Project - Technology for the cultivation of a species of medicinal plants	Self-study	1 laboratory work

Compulsory bibliography:

1. Duda M.M., 2019, Course Notes.
2. Morar G., S. Cernea, M.M.Duda, L. Ştef, 1997. Lucrări practice de Fitotehnie, ediţia a VIII-a, partea II-a, Tipo Agronomia, Cluj-Napoca.
3. Muntean L.S., M. Tămaş, S. Muntean, L. Muntean, M.M. Duda, D.I. Vârban, S. Florian, 2016. Tratat de plante medicinale cultivate şi spontane, Ed. Risoprint Cluj-Napoca, 928 p, ISBN 978-973-751-463-9.

Facultative bibliography:

1. Muntean, L.S., 2003. Mic tratat de Fitotehnie, Vol. III, Tutunul, Hameiul, Plantele medicinale şi aromatice. Ed. Risoprint, Cluj-Napoca.
2. *** Revista „Hameiul şi Plantele medicinale", Ed. AcademicPres, ISSN 1454-7805, anii 1990-2018.

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

In order to identify ways of modernization and continuous improvement of teaching and course content with the current issues and practical problems teachers participate in regular meetings where they meet with farmers and experts in specific areas being discussed current issues and future plant cultivation technology, control of pests and diseases with new products and new forms of fertilizer application on soil and foliage.

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	Presentation of the acquired knowledge regarding: importance, biology, ecology and cultivation technology of medicinal and aromatic plants.	Verificare pe parcurs prin min. 2 teste parţiale.	60%
10.5. Seminar/ Laboratory	Recognition of the studied medicinal plant species and their plant raw material. The possibility to draw up a technological file for the cultivation of a species of medicinal plants.	Ability to describe and recognize medicinal plant species; verification of the technological file drawn up.	40%

10.6. Minimum performance standards
Sufficient mastery of the scientific information presented in lectures and practical work. Obtain the pass mark in the practical exam is a condition of participation in the oral examination.

[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
Prof.dr. Marcel M. DUDA

Laboratory work/seminar coordinator
Lecturer dr. Sorin MUNTEAN

Approved by the department on
05.09.2019

Head of the Department
Prof.dr. Marcel M. DUDA