



No. _____ of _____

USAMV form 0101040111

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	Agriculture
1.5. Cycle of study¹	Bachelor of Science
1.6. Specialization/ Study programme	Agriculture
1.7. Form of education	Full time

2. Information on the discipline

2.1. Discipline name		Seed and planting material production						
2.2. Course coordinator				Associate prof. dr. Leon MUNTEAN				
2.3. Seminar/ laboratory/ project coordinator				Assistant prof. dr. Andreea ONA				
2.4. Year of study	IV	2.5. Semester	II	2.6. Evaluation type	continuous	2.7. Discipline status	Content ²	DD
							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	20	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					4
3.4.2. Additional documentation in the library, electronic platforms and field experiences					2
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					2
3.4.4. Tutorials					-
3.4.5. Examinations					2
3.4.6. Other activities					-
3.7. Total hours of individual study	10				
3.8. Total hours per semester	50				
3.9. Number of credits⁴	2				

4. Prerequisites (if applicable)

4.1. curriculum-related	Genetics, Botany, Physiology, Plant Breeding
4.2. skills-related	The student must possess knowledge of the main crops biology, molecular and population genetics and field trial experiments

5. Conditions (if applicable)

5.1. for the course	The course is interactive; students can ask questions and make comments about the course content. Academic discipline requires compliance schedule. We do not allow any other activities during the lecture, mobile phones and tablets must be kept closed.
5.2. for the seminar/ laboratory/ project	To participate in the practical work is absolutely mandatory consultation of practical work guide; students will have individual activities with study materials (plants, fruiting, seed, etc.). Academic discipline and seriousness required throughout the duration of works.

6. Cumulated specific competences

Professional competences	<ul style="list-style-type: none"> - To master the specific terms on seed production. - To know the compulsory conditions which must satisfy by trader involved in seed production; - To know the main types of cultivars: varieties, hybrids, clones, synthetics and their seed production. - To know the main methods of seed production of cereals, legumes, corn, sunflower and sugar beet.
Transversal competences	<ul style="list-style-type: none"> - - To be able to develop a project for equipping and working of a producing seed farm. - To know the entire flow of seeds: production, conditioning, packaging, inspection and marketing. - To know how agricultural specialist organizes the special work in seed production trials.

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

7.1. General objective	<ul style="list-style-type: none"> - Knowledge of legislative and organizational framework of seed production in Romania. - Mandatory equipment for seed-producing farms. - Links in seed production process.
7.2. Specific objectives	<ul style="list-style-type: none"> - To be able to develop a program for the collection, study, maintenance and use of plant genetic resources. - To be able to develop research projects of new genotypes (varieties, hybrids, clones) in field trials and demonstration plots. - To be able to organize seed producing farms of corn, sunflower, sugar beet. - To be able to participate in the specific work of plant breeding fields.

8. Content

8.1. COURSE Number of hours – 20	Teaching methods	Observation
1. Legislative and organizational framework of seed production.	Lectures	1 lecture
2. Types of cultivars.	Lectures	1 lecture
3. Methodology of seeds production in cereal crop.	Lectures	1 lecture
4. Methodology of seeds production in legumes crop.	Lectures	1 lecture
5. Methodology of seed production in corn and sunflower (conventional, male sterile and restoring fertility inbred lines).	Lectures	1 lecture
6. Methodology of seed production in corn and sunflower hybrid.	Lectures	1 lecture
7. Methodology of seed production in sugar beet cultivars.	Lectures	1 lecture
8. Methodology of planting material production in potato.	Lectures	1 lecture
9. Methodology and technology of seed production in perennial forage legumes.	Lectures	1 lecture
10. Control and certification of forage crops.	Lectures	1 lecture

8.2. PRACTICAL WORKS Number of hours – 20	Teaching methods	Observation
1. Organizing of a field crops seed production farm (visit).	Calculations, amounts and surfaces	1 laboratory work
2. Organizing a seed conditioning unit (visit).	Calculations, amounts and surfaces	1 laboratory work
3. Seed production technology to a winter wheat variety.	Plans, calculations, amounts and surface	1 laboratory work
4. Technology of seed production for soybean cultivar.	Plans, calculations, amounts and surface	1 laboratory work
5. The technology of seed production for single cross hybrid (conventional and cytoplasmic male sterility).	Plans, calculations, amounts and surface	1 laboratory work
6. The technology of seed production for double cross hybrid (conventional and cytoplasmic male sterility).	Visit to seed production farms	1 laboratory work
7. Technology for seed production in perennial forage legumes.		1 laboratory work
8. The establishment and maintenance of seed production plots.		2 laboratory work
9. Verification of knowledge.	Multiple choice tests	1 laboratory work

Compulsory bibliography:

1. MUNTEAN L., 2019-2020 – *Notițe de curs*

2. HAȘ I., 2006, *Producerea semințelor la plantele agricole*, Ed. AcademicPres, Cluj-Napoca

Optional bibliography:

PĂCURAR I., 2007, *Producerea semințelor de cereale, leguminoase pentru boabe și plante tehnice*, Ed. Phoenix, Brașov

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 the most pressing problems of field crops seed production, the teachers from department will participate within ANSEM, in the meetings of seed producers and seed production plots presentations.

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	- Knowledge of the Romania seed production system. - Knowledge of seed quality control. - Knowledge of the seed production methodology of wheat, corn, sunflower, perennial forage plants and potato planting material.	periodic evaluation periodic evaluation multiple choice test	70%
10.5. Seminar/Laboratory	- Knowledge of the biological links in seed production. - Knowledge of the main technological elements specific to field crops seed production.	periodic evaluation	30%

10.6. Minimum performance standards

Knowledge of the main legislative aspects of seed production. Knowing the specific rules for seed production technology compared to commercial crops technology. Knowing the significance of seed label and the analysis documents..

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).

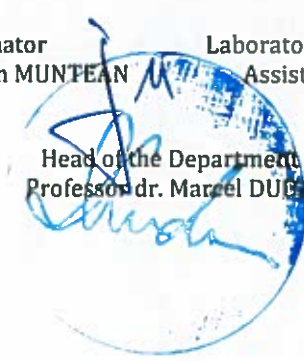
Filled in on
04.09.2019

Course coordinator
Associate prof. dr. Leon MUNTEAN

Laboratory work/seminar coordinator
Assistent prof. dr. Andreea ONA

Approved by the
department on
05.092019

Head of the Department
Professor dr. Marcel DUȘA



Ona