UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
Facultatea de Agricultură
Calea Mănăştur 3-5, 400372, Cluj-Napoca, România
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No._____of _____

USAMV form 0101030107 (discipline code)

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	Plant culture
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	**Grasslands and forage crops culture II**							
2.2. Course coordinator	**Prof. Ioan Rotar PhD**							
2.3. Seminar/ laboratory/ project coordinator	**Lect. Florin Pacurar PhD**							
2.4. Year of study	III	2.5. Semester	**II**	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	56	**out of which: 3.5. lecture**	**28**	**3.6. seminar/laboratory**	**28**

Distribution of the time allotted	**hours**
3.4.1. Study based on books, textbooks, bibliography and notes	**20**
3.4.2. Additional documentation in the library, electronic platforms and field experiences	**35**
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays	**15**
3.4.4. Tutorials	**8**
3.4.5. Examinations	**6**
3.4.6. Other activities	

3.7. Total hours of individual study	**84**
3.8. Total hours per semester	**140**
3.9. Number of credits[4]	**5**

4. Prerequisites (if applicable)

4.1. curriculum-related	Botany, Pedology, Agrochemistry
4.2. skills-related	Student must have knowledge of the functions of ecosystems and agroecosystems.

5. Conditions (if applicable)

5.1. for the course	The course is interactive, students may ask questions about the lecture content. University discipline requires strict observance of course start and end times. No other activities are tolerated during the lecture. Personal devices must be turned off.
5.2. for the seminar/ laboratory/ project	Consulting the handbook is required during seminars/labs, as each student will work individually with available materials which are described in the

	handbook. Academic discipline is required for the entire duration of lab hours.

6. Cumulated specific competences

Professional competences	Being knowledgeable of the agronomic vocabulary specific to Pratology and Forage Crops. Being knowledgeable of the technologies used for growing annual and perennial grasses for forage and seeds. Being knowledgeable of the technologies used for growing forage crops. Being knowledgeable of conservation technologies for succulent and fibrous forage.
Transversal competences	Being able to create a forage plan for a farm. Understanding how to use different forage mixes for different ecological zones in Romania. Being able to create a forage production model for a farm.

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

7.1. General objective	Attaining a level of knowledge about grassland systems suitable for current needs.
7.2. Specific objectives	Understanding the distribution of grasslands in Romania and Europe. Having the ability of interpreting fodder balance at the farm level. Knowing the parameters that influence the quality and productivity of natural grasslands.

8. Content

8.1. COURSE **Number of hours – 28**	Teaching methods	Observation
Growing perennial grasses for seeds	Lecture	1 lecture = 2 hours
Cultivating legumes – alfalfa, red clover, sainfoin, trefoil	Lecture	3 lectures = 6 hours
Annual legumes – vetch, chickling, annual vetches	Lecture	1 lecture = 2 hours
Annual grasses for forage – maize green forage, sudangrass, Italian ryegrass	Lecture	2 lectures = 4 hours
Root crops for forage – forage beet, forage turnip, forage carrot, stubble turnip	Lecture	1 lecture = 6 hours
Squashes for forage – importance, systematics, climate and soil requirements, cultivation for forage	Lecture	1 lecture = 2 hours
Cabbage for forage – importance, systematics, climate and soil requirements, cultivation for forage,	Lecture	1 lecture = 2 hours
Successive forage crops – plants and technological specifications	Lecture	1 lecture = 2 hours
Forage planner – types of plans, organization principles, assortments of plants	Lecture	1 lecture = 2 hours
Forage silage production – the importance of silaging, types if silage, biochemical processes, the use of additives, types of silos, the qualities of forage silage	Lecture	1 lecture = 2 hours
Sward – choosing plant species, creating a sward, preparing the terrain, seed mixes	Lecture	1 lecture = 2 hours
Evaluation		

8.2. PRACTICAL WORKS **Number of hours – 14**	Teaching methods	Observation
Creating seed mixes for grasses and legumes	Practical works/Seminar	1 lab work (2 hours/work)
The forage planner	Practical works/Seminar	1 lab work (2 hours/work)

The study of grassland vegetation: the geobotanical method, the gravimetric method, the double-meter method, the planimetric method	Practical works/Seminar	1 lab work (2 hours/work)
Basic requirements for grazing plans	Practical works/Seminar	1 lab work (2 hours/work)
Grassland valuation. Calculating pastoral value.	Practical works/Seminar	1 lab work (2 hours/work)
Determining the quality of forage	Practical works/Seminar	1 lab work (2 hours/work)
Forage cubing	Practical works/Seminar	1 lab work (2 hours/work)
Evaluation	Oral/Practical	1 lab work (2 hours/work)

8.3. PROJECT: Modeling a forage base for a farm **Number of hours – 14**	Teaching methods	Observation
Determining the forage species to use based on the profile of the farm and its location (soil and climate conditions)	Project	2 lab work (4 hours/work)
Determining the technologies to use for planting and protecting the forage crops	Project	1 lab work (2 hours/work)
Determining the technologies to use for harvesting, conserving and silaging the forage crops	Project	1 lab work (2 hours/work)
Determining the quality of the forage	Project	1 lab work (2 hours/work)
Determining the forage ratio	Project	1 lab work (2 hours/work)
Determining requirements for the grazing plan	Project	1 lab work (2 hours/work)
Evaluation	Oral presentation	1 lab work (2 hours/work)

Compulsory bibliography:

1. *Rotar I., (1996) – Notițe de curs*
2. *ROTAR I., CARLIER L., (2010), Cultura pajiștilor, Ed. RisoPrint*
3. *PUIA I., et. All. (1991), Cultura pajiștilor și a plantelor furajere, Ed.. Did. Si Ped. București*
4. *ROTAR I., VIDICAN R., SIMA N., (2005), Cultura pajiștilor și a plantelor furajere – ghid practic, Ed. RisoPrint*
5. *VÂNTU V., A. MOISUC, G. MOTCĂ, I. ROTAR, (2004), Cultura pajiștilor și a plantelor furajere, Ed. „Ion Ionescu de la Brad".*

Optional bibliography:

1. *Carlier, L., I. Puia, I. Rotar,For a better grass production, Ed. Risoprint,*
2. *Buletinul ICPCP Brașov,*
3. *Revista Fourrages 2000-2013*
4. *Romanian Journal of Grassland and Forage Crops*

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 means of modernization and continuous improvement in teaching and building courses by means of updating information and didactic solutions, the teaching personnel participates in the annual reunion of the Romanian Grassland Society (SRP) where they also meet with farmers and debate present challenges in the use of grasslands and the production of forage crops in Romania and Europe.

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	Knowing the biology of cultivated forage species. Deepening knowledge about arable forage crop cultivation. Understanding the basics of forage conservation.	Summative(E)	70%
10.5. Seminar/Laboratory	Having the capacity to study grassland vegetation using the 4 methods covered by the course. Having the ability to determine forage pastoral value and quality.	continuous(VP) in 1 round	30%
10.6. Minimum performance standards			
Mastering the scientific information communicated within the course at an acceptable level. Obtaining a passing grade at continuous evaluations (VP).			

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. Ioan Rotar PhD

Laboratory work/seminar coordinator
Lect. Florin Păcurar PhD

Approved by the department on
05.09.2019

Head of the Department
Prof. Duda Marcel PhD