



# 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

USAMV form 0101030103

158 USAMV

# 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 <sup>1</sup>	Bachelor
1.6. Specialization/ Study programme	Agriculture
1.7. Form of education	Full time

## 2. Information on the discipline

2.1. Discipline name	2	Cro	p te	chnology	(Ph	ytotechny)	1		
2.2. Course coordin	ator					f.dr. Marcel M.			
2.3. Seminar/labor	atory/ j	project coordi	ator		Lect	turer dr. Sorin	MUNTEAN		
2.4. Year of study	III	2.5.		2.6. Evaluatio	n	summative	2.7. Discipline status	Content <sup>2</sup>	DS
	1	Semester	Ľ.	type		Summative	status	Compulsoriness <sup>3</sup>	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, textbook	s, biblic	graphy and notes			19
3.4.2. Additional documentation in th	e librar	y, electronic platforms	and fie	ld experiences	15
3.4.3. Preparing seminars/laboratori					15
3.4.4. Tutorials					5
3.4.5. Examinations					10
3.4.6. Other activities	-				
3.7. Total hours of individual study	64	1/2			
3.8. Total hours per semester	120	-			

## 4. Prerequisites (if applicable)

3.9. Number of credits4

4.1. curriculum- related	Botany, Biochemistry, Pedology, Agrotechnics, Agrochemistry, Agricultural machinery, Phytopathology, Entomology, Irrigation, Plant Physiology
4.2. skills- related	Students must have knowledge of: plant nutrition, physico-chemical properties of soils, biology, morphology and physiology of crop plants, weeds, pests and diseases of cultivated plants, economic thresholds, crop protection products, adjusting machinery, irrigation regime.

4

## 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/	At practical works is mandatory to consult the practical book/tutor. Each student will conduct

laboratory/ project	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 specific agronomic language of the Phytotechnics discipline.  To know how the territory of our country is being used, the structure of the main crops and their favorability areas.  To know the factors which determine field plant production.  To know the areas of crop production in Romania.  To understand the importance and role of the seed in crop production.  To know how the seed quality control in our country is being organized.  To know the stages of of seeds control and certification in our country.  To know the biological features of cereal plants.  To know the importance of biology, ecology and technology of wheat cultivation.
Transversal competences	To demonstrate concern for continuing professional development.  To participate in research in the experimental fields of the discipline.  To be able to develop a project to ensure the necessary fertilizers and pesticides in wheat culture knowing their percentage of active substances.

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

7.1. General	To acquire knowledge on: the use of the land in our country, factors which determine field plant
objective	production, crop zoning, the importance, control and certification of seeds.
7.2. Specific objectives	To understand the reasons for zoning crops and the importance of factors that can increase agricultural production.
	To assimilate information on system certification and seed quality control in our country.  To be able to customize the knowledge of cultivation of cereals, particularly wheat, relations with
	factors of vegetation and cultivation technology of its elements.

#### 8. Content

8. Content		
8.1.COURSE:		
GENERAL ISSUES OF PHYTOTECHNY: 14 hours		
Object of phytotechny and the relationship with other sciences Object of phytotechny; phytotechny analysis and it's connection with	Methods of teaching	Observations
other sciences; Structure of main agricultural crops in Romania and crop production factors	Lectures	1 lecture
The method of use for the territory of Romania	Lectures	1 lecture
Factors which determine field plant production	Lectures	1 lecture
Agricultural and ecological zoning of plants		1 lecture
Crop production areas in Romania; Ecological zoning of agricultural plants.	Lectures	1 lecture
Seed certification and quality control	Lectures	1 lecture
The importance and relative to the survey and the servey and the s		1 lecture
The importance and role of seed in crop production	Lectures	
Seed quality control organization in the world and in our country, seed		1 lecture
and seeding material - biological factor for the crop production;		
Seed Certification: definition, purpose of seed certification and quality		
control;	Lectures	
The causes determining modifying the genetic structure of varieties, loss	Lectures	1 lecture
of production and quality of seeds in different culture conditions; Stages		
of control and certification of seeds; Act of field inspection and seed	1.	
conditioning;	Lectures	1 lecture
Controlling the flow of processing and training samples for analysis;		2.1001.01
Laboratory analyzes; Useful seed and the amount of seed per hectare;		
Documents issued after analysis and certification of seeds.	Lectures	2 lecture
CEREALS: 14 hours	Lectures	
	Lectures	1 lecture
Generalities: Importance, Biological peculiarities of cereals;	Lectures	1 lecture
Wheat: Importance; Chemical composition; Distribution;	Lectures	1 lecture
Systematics; Origin; Varieties; Biological peculiarities;	5000000	1 lecture
Requirements for climate and soil; Ecological zones;		
Cultivation technology: Rotation; Fertilization; Soil works;	<u> </u>	

Seed and sowing, Care work; Harvesting.		
8.2.PRACTICAL WORK		
Quality control of seeds: 16 hours		
Taking, making and sending samples of seeds.	Practical demonstration	
Subjective and objective analyzes		1 laboratory
Determination of the purity of seed	Self-study	work
	Identify categories of	1 laboratory
Determination of seed mass (TKW and MA)	impurities Practical demonstration	work
( unu man)	Practical demonstration	1 laboratory
Determination of seed germination (I). Power to cross (I)	Practical demonstration	work
3-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Fractical demonstration	1 laboratory
Calculation of germination (II). Power to cross (II). Cold-test.		work
Peculiarities of germination in different species	Practical demonstration	1 laboratory
Determination of viability of the seed. Determination of moisture	Fractical demonstration	work
content in seeds (1).	Practical demonstration	1 laboratory
Calculation of moisture. Calculation of the useful seed and of the amount	Self-study	work
of seed per hectare. Quality classes.	Practical demonstration	1 laboratory
Receiving samples, laboratory analysis and issuing official documents.	Self-study	work
Documents issued by the Seed Testing Laboratory.	Submission of official	1 laboratory
Cereals 12 hours	documents. Models of	work
Recognition of cereals by root, stem and leaf.	1	1
S S S S S S S S S S S S S S S S S S S	completion.	1 laboratory
Recognition of cereals by inflorescence and fruit.	Morphological	work
o and the second and the second	presentation of grains. Practical demonstration	1 laboratory
The genus Triticum. Wheat species.	Practical demonstration	work
	Tractical demonstration	1 laboratory
Recognition of varieties within the species Tr. aestivum ssp. vulgare and		work
r. durum.	Practical demonstration	1 laboratory work
Wheat varieties. Rye and triticales: systematic and cultivated varieties.	Practical demonstration	
	Self-study	1 laboratory work
Drawing a technological sheet for a cereal species.	Self-study	
	Jen Judy	1 laboratory work

#### Compulsory bibliography.

1. Duda M.M. (2019).- Course Notes.

2. Muntean S., M.M. Duda, C. Moldovan, Al. Gheţe, 2018, Fitotehnie – Îndrumător de lucrări practice. Partea I. Ed. Risoprint, 317 p., ISBN 978-973-53-2273-1.

3. Muntean L.S., S. Cernea, G. Morar, M.M. Duda, D.I. Vârban, S. Muntean, 2011. Phytotechnics. Edition II. Ed. Risoprint, Cluj-Napoca, ISBN 978-973-53-0506-2.

### Facultative bibliography

- 1. Ceapoiu, N. Gh. Bîlteanu, Cr. Hera, N.N. Săulescu, Floare Negulescu, Al. Bărbulescu, 1984. Wheat. Ed. Academiei, Buc.
- 2. Roman Gh.V., V. Tabără, T. Robu, P. Pârşan, M. Ştefan, M. Axinte, G. Morar şi S. Cernea, 2011. Phytotechnics, Vol. 1. Cereals and legumes. Ed. Universitară, Bucureşti. ISBN 978-606-591-277-9, 413 p.
- 3. Salontai Al., Muntean L., Savatti M., Bârsan M., 1988. Certification and quality control of seeds and seedlings of field crops. Ed. Dacia Cluj-Napoca.

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

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 acquired knowledge	Oral exam	

	on the factors which determine agricultural production, quality control and certification of seeds, biology, ecology and technology of cultivation of wheat		70%
10.5. Seminar/ Laboratory	The ability to perform basic analysis of the seeds. Recognition of key species and varieties of wheat. The ability to draw a technology fiche technology for growing wheat.	Testing the determination of the physical ability of seeds, species recognition and the main varieties of wheat technological safety check the technology fiche.	30%

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..

Cycle of studies - choose one of the three options: Bachelor/Master/Ph.D.

according to the educational plan

Discipline status (compulsoriness) - choose one of the options – DI (compulsory discipline) DO (optional discipline) DFac (facultative discipline).

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. DVDA Laboratory work/seminar coordinator Lecturer dr. Sorin MUNTEAN

Approved by the department on 05.092019

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