UNIVERSITATEA DE ȘTIINȚE AGRICOLE ȘI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
Facultatea de Agricultură
Calea Mănăștur 3-5, 400372, Cluj-Napoca, România
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No._____of _____ USAMV form 0102020102

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	Agronomical
1.5. Cycle of study[1]	Bachelor
1.6. Specialization/ Study programme	
1.7. Form of education	Full time

2. Information on the discipline

2.1. Discipline name	Phytopathology 1							
2.2. Course coordinator				Lecturer dr. Loredana Suciu				
2.3. Seminar/ laboratory/ project coordinator				Lecturer dr. Loredana Suciu				
2.4. Year of study	II	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	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	18
3.4.2. Additional documentation in the library, electronic platforms and field experiences	12
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays	12
3.4.4. Tutorials	4
3.4.5. Examinations	10
3.4.6. Other activities	

3.7. Total hours of individual study	56
3.8. Total hours per semester	112
3.9. Number of credits[4]	4

4. Prerequisites (if applicable)

4.1. curriculum-related	Botany, Physiology, Agrochemical, Agrotechnics, Genetics, Agricultural machinery
4.2. skills-related	The student should have knowledge of morphology, anatomy and physiology of plants

5. Conditions (if applicable)

5.1. for the course	The course is interactive, students can ask questions regarding the content of the statement.
5.2. for the seminar/ laboratory/ project	At practical work is obligatory practical work guide, each student will conduct a laboratory materials available and described in the practical work guide.

6. Cumulated specific competences

Professional competences	To know the language specific to the discipline of Phytopathology agronomic. To acquire general characters recognition and classification of the phytopathogens. To recognize the main types of crop diseases. To know the pathogenesis of phytopathogens. To know the system assessment of phytopathogens attack. To know the methods of prophylaxis and therapy of pathogens. To know how evolves the attack of pathogens on the base of biology knowledge and the technology applied to attacked crop.

Transversal competences	To demonstrate the ability to create a system for prevent and combat plant diseases in a farm. To develop prognoses projects and warning of pathogens on farms in different climatic conditions To be able scientific thinking on plant diseases, including the fitting of experimental field experiences To demonstrate concern about professional development by engaging in investigations on the economic impact of phytopathogens To participate in research experiences in the field of discipline

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

7.1. General objective	To acquire knowledge of the main pathogens and the diseases they cause in crops.
7.2. Specific objectives	To understand the life cycle of phytopathogens

8. Content

8.1. COURSE **Number of hours -28**	Teaching methods	Observation
		1 lecture=2 hours
Introduction to Phytopathology	Lectures	1 lectures
Introduction to plant disease	Lectures	2 lectures
Definition, etiology, classification and nature of plant diseases. The disease pathogenesis in plant. Changes in plants during the pathogenesis process The patography of plant diseases..		
Introduction to phytopathogenic agents	Lectures	2 lectures
The mode of nutrition of pathogen agents. Origin and evolution of parasitism. The parasitic properties of pathogens agents Changes in the pathogenic agents in the process of pathogenesis and factors that influencing their parasitic characteristics. Propagation of pathogens agents.		
Classification and specific characters phytopathogens	Lectures	4 lectures
Viruses Mycoplasmas Bacteria Fungi and pseudofungi		
The reaction of crop plants against the infectious diseases attack.	Lectures	2 lectures
Classification of crop plants resistance to attack of infectious diseases. Plant resistance to infectious diseases attack. Factors that influence the resistance of plants to the infectious diseases attack The genesis of the physiological strains of the pathogenic agents (occurrence of the phenomenon of resistance to pesticides (virulicides, bactericides, fungicides, insect-fungicides)		
The prevention and control of infectious plants disease	Lectures	3 lectures

8.2. PRACTICAL WORKS **Number of hours – 28**	Teaching methods	Observation
		1 lab work (2 hours/work)
The diagnosis of plants diseases		1 lab work
Cultural characteristics of pathogenic pseudofungi *Plasmodiophoromycota* phylum *Oomycota* phylum	The study of the herbarium with diseased plants - Study of the didactical drawings	2 lab work
Cultural characteristics of pathogenic pseudofungi *Chytridiomycota* phylum *Ascomycota* phylum *Basidiomycota* phylum	- The realization of microscopic preparations	5 lab work
The diagnosis of bacterial diseases.		1 lab work
The diagnosis of virus diseases.		1 lab work
The phytosanitary control of plant cultures		1 lab work
The use of the plant protection products against the pathogen agents		1 lab work
The technology of prevention and control of the pathogen agents		1 lab work
Review - knowledge verification		1 lab work

Compulsory bibliography:

1. Florian V. - 2001, Fitopatologie generală, Ed. Poliam, Cluj-Napoca.
2. Florian V., Oroian I. –2002, Diagnoza bolilor infecţioase la plantele de cultură, Ed. Poliam Cluj-Napoca
3. Oroian I., Puia Carmen, Şerba I.- 2002, Practicum de Fitopatologie, Ed. Poliam Cluj-Napoca
4. Oroian I. V. Florian, L. Holonec. - 2006, Atlas de Fitopatologie, Ed. Academiei Române, Bucureşti

Optional bibliography:

1. Baicu T., Săvescu A. - 1986, Sisteme de combatere integrată a bolilor şi dăunătorilor pe culturi, Ed. Ceres, Bucureşti.
2. Bobeş I. - 1983, Atlas de Fitopatologie şi protecţia agroecosistemelor, Ed. Ceres, Bucureşti.
3. Hatman M. şi col. - 1989, Fitopatologie, E.D.P., Bucureşti.
4. Pop I.V. - 1987, Virusurile şi virozele plantelor, Ed. Ceres, Bucureşti.
5. Popescu Gh. – 1993, Fitopatologie, Ed. Tehnică, Bucureşti.
6. Popescu Gh. – Tratat de Patologia Plantelor, Vol I-III, ed. Eurobit, timişoara
7. Puia Carmen – 2003, Patologie vegetală, Ed. Digital Data, Cluj-Napoca;
8. Severin V. şi col. - 1985, Bacteriozele plantelor cultivate, Ed. Ceres, Bucureşti.

* * * Revista "Protecţia plantelor", Ed. Poliam, 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 some ways of upgrading and continuous improvement of teaching and course content with the current issues and practical problems, the teachers attend the annual meeting of the Society of Plant Protection Transylvania where they meet experts and farmers and they discuss current and future issues in the integrated control of crop diseases

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	The knowledge of the patography of main diseases and the pathogenesis process. The knowledge of pathogens characters. The knowledge of diseases prevention and the control measures within the integrated concept	2 continuous assessment	70
10.5. Seminar/Laboratory	Principles of plant disease diagnosis The knowledge of the general characteristics of pathogens The knowledge of the specific characters of the main pathogens and their systematic classification Microscopic determination of the main types of spores Knowing and determining the sanitary status of the crops	5 continuous assessment	30
10.6. Minimum performance standards			
Knowing the scientific information from lectures and practical work at an acceptable level. Obtaining the pass mark in continuous assessment is the condition of graduation..			

[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
Lecturer dr. Loredana SUCIU

Laboratory work/seminar coordinator
Lecturer dr. Loredana SUCIU

Approved by the department on 05.092019

Head of the Department
Prof. dr. Ioan OROIAN