



No. _____ of _____

Form code USAMV 0107030110

COURSE DESCRIPTION

1. Program data

1.1. Higher education institution	University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca
1.2. Faculty	Agriculture
1.3. Department	Environmental and Plant protection
1.4. Domain of study	Environmental Engineering
1.5. level of study ¹⁾	Bachelor
1.6. Specialization / Study program	Environmental Engineering
1.7. Form of education	IF

2. Course Data

2.1. Course title		Environmental and plant protection						
2.2. Course leader		PhD Lecturer Brașovean Ioan						
2.3. Coordinator of seminar activities / laboratory/ project		PhD Lecturer Brașovean Ioan						
2.4. Year of study	III	2.5. Semester	II	2.6. Evaluation type	summative	2.7. Course regime	Content ²⁾	DS
							Compulsoriness ³⁾	DI

3. Estimated total time (hours allocated per semester for all didactic activities)

3.1. Number of hours per week – frequency form	4	Of which: 3.2. course	2	3.3. seminary/ laboratory/ project	2
3.4. Total hours of curriculum	56	Of which: 3.5. course	28	3.6. seminary/laboratory	28
Time fund distribution					
3.4.1. Study after manual, course support, bibliography and notes					10
3.4.2. Additional documentation in the library, specialized electronic platforms and on the ground					15
3.4.3. Preparation of seminars / laboratory/ projects, themes, lectures, portfolios and essays					15
3.4.4. Tutorials					2
3.4.5. Examinations					2
3.4.6. Other activities					
3.7. Total hours of individual study	48				
3.8. Total hours per semester	104				
3.9. Number of credits ⁴⁾	4				

4. Preconditions (where applicable)

4.1. of curriculum	botanic , Zoology, Elements of biology and microbiology
4.2. of competences	General notions of ecology, microbiology and environmental physics

5. Conditions (where applicable)

5.1. of conducting the course	Room equipped for PPT presentations The course is interactive, students can address questions regarding the exposed content. The university discipline impose respecting the beginning and finalizing hours of the course. Are not tolerated other activities during lecture, mobile phones are to be turned off. .
5.2. of conducting the seminary/ laboratory/ project	The practical work is mandatory the course note and practical work, each student will develop an individual activity with laboratory materials made on. Academic conduit is required during the works.

6. Specific skills acquired

Professional skills	<p>Providing integrated environment services. Studies and specialized expertise and consultations to develop plans county / regional waste management. Management and rational use of renewable natural resources. Education and scientific research in the field.</p>
Transversal skills	<p>Knowledge of principles and strategic objectives regarding waste management; Learning the strategies and techniques used in developed economies to recover and reuse of material resources;</p>

7. Course objectives (scale resulting from the specific skills acquired)

7.1. The overall objective of discipline	To acquire knowledge on plant protection and the relationship with the environment.
7.2. Specific objectives	The discipline aims theoretical and practical training of students in order to acquire recognition the methodologies plant diseases and the most effective technologies to prevent and combat them. It insists especially on inter-relations established between the host plant and phytopathogenic agents, in close correlation with pedoclimatic and technological factors.

8. Contents

8.1.COURSE Number of - 28	Teaching methods	Observations
ESTABLISHING PLANT DIAGNOSIS OF PLANT DISEASES AND THE GENERAL CHARACTERS OF PLANT PATHOGENS 2.1. general characters of viruses 2.2. general characters of bacteria 2.3. general characters of fungus 2.4. Fungus classification	Lecture and exemplification	4 hours
RELATIONSHIP BETWEEN FERTILIZING WITH MACRONUTRIENTS AND NON-INFECTIOUS DISEASES 3.1. General considerations regarding nutritious physio pathology 3.2. fertilizing with micronutrients effects upon infectious and non-infectious diseases attack	Lecture and exemplification	2 hours
PLANT INJURIES CAUSED BY VARIOUS FACTORS 4.1. Plant injuries sustained by physical and chemical soil structure 4.2. Injuries sustained by misuse of plant protection products 4.3. The negative effects of polluted atmosphere on plants 4.4. Causes damage due to weather, mechanical, physical trauma	Lecture and exemplification	4 hours
WEEDS IN NATURAL ECOSYSTEMS 5.1. Defining the notion of weeds 5.2. Agriculture damage caused by weeds 5.3. Competition relations between crop plants and weeds 5.4. Weed biology	Lecture and exemplification	2 hours
GENERAL CHARACTERS OF INSECTS 6.1. External morphology of insects 6.2. Anatomy and physiology of insects 6.3. insect biology 6.4. insect ecology 6.5. The spread of insects 6.6. population ecology 6.7. ecosystem ecology 6.8. Types of pest. Estimating damage and pest damage	Lecture and exemplification	3 hours
GENERAL CHARACTERS AND BIOCENOLOGY OF HARMFUL ANIMALS 7.1. Phylum Nematoda 7.2. Class Arachnida 7.3. Class Crustacea 7.4. Class Myriapoda 7.5. Phylum Mollusca 7.6. Phylum Vertebrata	Lecture and exemplification	3 hours

CHEMICAL PROTECTION OF PLANTS AND ENVIRONMENT 8.1. Ecological principles underlying the use of pesticides 8.2. Environmental conservation strategy in terms of using pesticides 8.3. pesticides place in sustainable agriculture 8.4. Some trends for expansion control pesticides 8.5. Pesticide treatments between risk and necessity 8.6. Are or not pesticides needed in agricultural ecosystems? 8.7. Genetic technologies and their relations with summer use pesticides in environment protection 8.8. Chemical protection of plant and environment 8.9. Views on pesticides 8.10. Ecology principles that should underpin the use of pesticides 8.11. Pesticide pollution in environments 8.12. Opinions about the poor state of environmental health. U.E. about use and the environment 8.13. Preventing poisoning and pollution in work with pesticides 8.14. Persistent organic pollutants. General practice	Lecture and exemplification	6 hours
ALTERNATIVE CONTROL IN PLANT PROTECTION 9.1. Peculiarities of plant protection methods 9.2. Methods of weed control 9.3. Disease control methods 9.4. Pest control methods 9.5. Bio products production plant 9.6. Products used to control diseases, insects and weeds harmful	Lecture and exemplification	4 hours

8.2. PRACTICAL ACTIVITIES		
Number of hours– 28		
LABORATORY OF PLANT PROTECTION LOGISTICS	Exemplification	2 hours
ESTABLISHING PLANT DIAGNOSIS OF DISEASES	Exemplification	2 hours
GENERAL CHARACTERS OF VEGETAL PATHOGENS	Exemplification	2 hours
IDENTIFICATION MANUAL USE FOR RECOGNITION OF PLANT DISEASES	Exemplification	2 hours
GENERAL CHARACTERISTICS PLANT PEST	Exemplification	2 hours
IDENTIFICATION MANUAL USE FOR RECOGNITION OF PLANT DISEASES	Exemplification	2 hours
THE NOTION OF WEED: DEFINITION, BIOLOGY	Exemplification	2 hours
IDENTIFICATION MANUAL USE FOR RECOGNITION OF WEEDS	Exemplification	2 hours
WEED SPREADING MAPS AND THEIR USE	Exemplification	2 hours
APPLYING PRODUCTS WITH PLANT PROTECTION EFFECT IN SUSTAINABLE AGRICULTURE	Exemplification	2 hours
ORIENTATION PRACTICAL PRINCIPLES IN CHOOSING TREATMENTS	Exemplification	2 hours
USING IN ORGANIC FARMING OF PHYTOPHARMACEUTICAL PRODUCTS	Exemplification	2 hours
METHODS FOR DETERMINING THE DEGREE OF APPEAL OF VEGETABLE PATHOGENS	Exemplification	2 hours
POISONING AND ENVIRONMENTAL POLLUTION PREVENTION IN PLANT PROTECTION	Exemplification	2 hours
<i>Compulsory references:</i>		
1. OROIAN, I., 2008, Protecția plantelor și mediul, Ed. Todesco, Cluj-Napoca 2. OROIAN, I., 2008, Protecția plantelor și mediul. Aspecte practice, Ed. Mediamira, Cluj-Napoca		
<i>Optional references:</i>		
1. BERCA, M., 2004, Managementul integrat al buruienilor, Ed. Ceres, București. 2. FLORIAN, V., I. OROIAN, 2002, Diagnoza bolilor infecțioase la plantele de cultură, Ed. Poliam, Cluj-Napoca. 3. OLTEAN, I., MONICA PORCA, I. GHIZDAVU, 2004, Entomologie generală, Ed. Digital Data, Cluj-Napoca 4. OROIAN I.I. OLTEAN, 2003, Protecția integrată a plantelor de cultură, Ed. AcademicPres, Cluj-Napoca 5. OROIAN I., A.FIȚIU, V. FLORIAN, CARMEN PUIA, ADELINA DUMITRAȘ, G. ROIBAN, LAURA PAULETTE, 2003, Controlul patogenilor plantelor în agricultura ecologică, Ed. Risoprint, Cluj-Napoca 6. OROIAN I., 2006, Pesticide, dezinfecție, dezinsecție, deratizare, Ed. Mediamira, Cluj-Napoca 7. OROIAN I., V.FLORIAN, L.HOLONEC, 2006, Atlas de Fitopatologie, Ed. Academiei Române, București.		

8. TONCEA, I., R. STOIAN, 2002, Metode ecologice de protecție a plantelor, Ed. Științelor Agricole, București.

9. Corroborating discipline content with the expectations of the representatives of epistemic communities, professional associations and representatives employers from the associated program

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 symposiums in the area of environmental engineering and protection.

10. Evaluation

Activity type	10.1. Evaluation criteria	10.2. Evaluation method	10.3. Percent in the final grade
10.4. Course	<ul style="list-style-type: none"> - Understanding and assimilating technology used in plant protection and the environment; - Familiarity with the basics of characters and traits of plant pathogens morphology, biology, ecology, animal pests and weeds; - Acquisition of expertise on the interrelations between pathogens, pests and weeds, crop plants or spontaneous, in various environmental conditions and influences. 	Exam	70%
10.5. Seminary/laboratory	<ul style="list-style-type: none"> - Knowledge of the methodology of diagnosis of diseases, identification of pests and weeds in crops; - Learning methods and techniques of control pathogens, pests and weeds with minimal environmental impact pollutant. 	- accurate diagnosis and prevention and control in the practical exam, which determines the final exam presentation	30%
10.6. Minimum performance standard			
<p>COURSE: Mastering Information transmitted through lectures by at least 50%. Getting the pass mark (5) in laboratory condition of participation in the examination.</p> <p>LABORATORY: The minimum grade (5) is obtained by mastery of at least 50% of the information taught and the presence of at least 80% practical work.</p>			

- ¹ Study cycle - choose one of the alternatives - Bachelor / Master / PhD
- ² Discipline regime (content)- for bachelor choose one of the alternatives- DF (fundamental discipline), DD (Field discipline), DS (specialized discipline), DC (complementary discipline).
- ³ Discipline regime (compulsoriness)- choose one of the alternatives – DI (compulsory discipline) DO (Optional discipline) DFae (elective discipline).
- ⁴ One credit is equivalent to 25-30 study hours (teaching and individual study).

Completion date
10.06.2016

Date of Department's approval
15.06.2016

Course coordinator
PhD Lecturer Braşovean Ioan

Titular of laboratory activities / seminars
PhD Lecturer Braşovean Ioan

Department Director
Prof. PhD. Ioan Oroian