Annex 6

DISCIPLINE DESCRIPTION

1. Information on the study programme

1.1 Academic institution	**UNIVERSITY OF ORADEA**
1.2 Faculty	**FACULTY OF ENVIRONMENTAL PROTECTION**
1.3 Department	**AGRICULTURE - HORTICULTURE**
1.4 Field of study	**HORTICULTURE**
1.5 Cycle of study	**BACHELOR**
1.6 Study programme/Qualification	**HORTICULTURE**

2. Information on the discipline

2.1 Name of discipline	**PHYTOPATOLOGY**						
2.2 Course holder	**STANCIU ALINA ȘTEFANIA**						
2.3 Seminar/Laboratory/Project holder	**STANCIU ALINA ȘTEFANIA**						
2.4 Year of study	II	2.5 Semester	III	2.6 Type of evaluation	Ex.	2.7 Regime of discipline	C

(C) Compulsory; (O) Optional; (E) Elective

3. Total estimate time (hours per semester of didactic activities)

3.1 Number of hours per week	4	out of which: 3.2 course	2	out of which 3.3 seminar/laboratory/project	2
3.4 Total hours in the curriculum	4	out of which: 3.5 course	28	out of which 3.6 seminar/laboratory/project	28

Time allotment	hours
Study assisted by manual, course support, bibliography and notes	60
Additional documentation in the library/ on specialised electronic platforms and in the field	50
Preparation of seminars/laboratories/ topics/reports, portfolios and essays	60
Tutorship	20
Examinations	14
Other activities.....	20
3.7 Total hours of individual study	**224**
3.9 Total hours per semester	**56**
3.10 Number of credits	**6**

4. Prerequisites (where appropriate)

4.1 curriculum	Botanical conditioning, plant physiology, inorganic and organic chemistry	
4.2 competences	Knowing the components of the optical microscope, a foreign language, computer and internet use	

5. Conditions (where appropriate)

5.1. related to course	
5.2. related to seminar/laboratory/ project	

6. Specific competences acquired	
Professional competences	C1.Elaboration of sustainable horticultural production technologies, organization and coordination of the production processes • Diagnosis and management of problems related to the organization and management of agricultural farms C1.1Description of the scientific, theoretical and practical foundations underlying the elaboration and implementation of the integrated crop protection program C1.2 Explaining the need to use different technological links, correlated with the environmental factors and the requirements of the cultivated plants; explaining and interpreting the interrelationships between the adopted agricultural production systems and the environment • Ensure consultancy and extension services in horticulture • Ensure consultancy and extension services in horticulture
Transversal competences	CT1.Elaboration and observance of a work program and accomplishment of its own attributions with professionalism and rigor CT2. Applying effective communication techniques in team-specific activities; assume a role within the team and observe the principles of division of labor CT3. Objective self-assessment of the need for continuous professional training in order to constantly adapt and respond to the demands of economic development; the use of information and communication techniques and, at least, of an international language

7. Objectives of discipline (coming from the specific competences acquired)

7.1 General objective	Causes and effects of pathogenesis processes in horticultural plants, their influence on the quantity and quality of production, the profitability of agricultural units.
7.2 Specific objectives	Knowledge of the range of microorganisms that can cause pathogenesis processes in horticultural crops; integrated, sustainable methods of prevention and control, through the use of preventive and non-chemical technological elements, inorganic, organic and biological products; the conditions for their application in order to achieve products free of toxic residues; methods for predicting and warning the evolution of pathogens; environmental protection measures in the case of specific works for the protection of field crops.

8. Content*/

8.1 Course	Methods of teaching	No. of hours/Remarks
1.Plant diseases, definition of disease in phytopathology.	Free teaching,	2

Physiological, nutritional and infectious diseases. Physiological and structural changes suffered by horticultural plants as a result of disease processes.	drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	
2. Specific symptoms caused to plants grown as a result of pathogenesis processes. Classification of plant pathogens, viruses and viruses of horticultural plants	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
3. Classification of plant pathogens: bacteria and bacteriosis of horticultural plants. Classification of pathogens of horticultural plants: mycoplasmas and mycoplasmosis.	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
4. Classification of plant pathogens: pathogenic fungi and mycoses of field plants. Methods and techniques for prevention, integrated and biological protection of pathogens of horticultural plants.	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
5. Biochemical and chemical products used in the prevention and control of plant pathogens; pesticide toxicity	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
6. Elements of integrated protection of field crop pathogens. Establishing the opportunity to apply prevention and control measures. Control of the effectiveness of treatments applied to field crops	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
7. Vegetable diseases: tomatoes, peppers, cucumbers, roots	Free teaching, drawings, video projection, Power Point presentations Repetition of terms,	2

	main topics presented 2in the previous course	
8. Diseases of cabbage, cauliflower, broccoli, lettuce, spinach	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
9. Vegetable diseases in protected areas (greenhouses, solariums)	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
10. Diseases of fruit trees and fruit bushes - apple, hair, cherry, sour cherry, quince, plum, peach, apricot, currant, blackberry, raspberry, etc.	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
11. Vine diseases	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
12. Diseases of green ornamental plants	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
13. Diseases of ornamental flowering plants	Free teaching, drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	2
14. Prognosis of the evolution of pathogens, warning of	Free teaching,	2

phytosanitary interventions. Internal and external phytosanitary quarantine.	drawings, video projection, Power Point presentations Repetition of terms, main topics presented in the previous course	

Bibliography

1.PÂRVU M.,Ghid practic de fitopatologie, Ed. Presa Universitară Clujeană, 2000

2.CSEP N.: Fitopatologie. Bolile plantelor cultivate. Ed. II-a. Universitatea din Oradea. Editura Geea, Bucureşti; p.217; ISBN.973-85232-3-0 (curs universitar); 2001

3.. Csep N., Csep A.: Bolile plantelor cultivate şi a produselor vegetale depozitate, Ed.Universităţii din Oradea, 2003

4.CSEP N.: Prognoza apariţiei bolilor principalelor plante de cultură, Editura Universităţii din Oradea ; p.274. ISBN.973-613-571-3. 2004.

5.CSEP N: (coordonator),BARA V., BUCUREAN ELENA, CIOBANU CORNELIA: Bolile, dăunătorii şi buruienile principalelor plante cultivate Vol.3. (Lucrare publicată în cadrul Proiectului PHARE-CBC RO2002 / 000.628.03-02 „Centre regionale de instruire fitosanitară". Editura Universităţii din Oradea; ISBN 973-613-608-6; VOL 3.ISBN 973-613-611-6. Cap.1-6 pp.1-193; p.452. 2004.

6. CSEP N.:Protecţia eficientăşi sigură a plantelor faţă de boli. Editura Universităţii din Oradea, ISBN. 973-613-896-8; p.226.2005.

7.CSÉP N.,CSÉP A.: Protecţia plantelor faţă de boli.Editura Universităţii din Oradea. ISBN. 978. 973. 759. 623.9. 279 p., 2008.

8.RADÓCZ L.,CSÉP N.(coordonatori şi coautori): Protecţia integrată a plantelor, vol.II.Organismele dăunătoare culturilor de câmp şi horticole. Lucrare bilingvă elaborată în cadrul proiectului PHARE-CBC Ro.2006-018-446. 01. 01.22, cu titlul „Fitoclinică pentru educaţie şi consultanţă". Ed.Universităţii din Oradea, ISBN. 978-973-759-872-1, 200 p.,2009.

8.2 Seminar	Methods of teaching	No. of hours/ Remarks
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8.3 Laboratory		
1. Notions of phytopathological microscopy. Laboratory technique. Technical norms of safety at work.	Presentation of laboratory equipment, working methods and labor protection measures during laboratory hours	2
2. Symptoms caused by viruses, mycoplasmas, bacteria in horticultural plants.	Power point presentations, drawings. Plants with symptoms of infection	2
3. Symptoms caused by fungi and anthophyte plants in horticultural plants. Classification systems for phytopathogenic fungi.	Presentation of laboratory equipment, working methods and labor protection measures during	2

	laboratory hours	
4. Phytosanitary control: determination of the severity of the attack, the opportunity to apply and the effectiveness of phytosanitary treatments	Presentation of laboratory equipment, working methods and labor protection measures during laboratory hours	2
5. Pesticide toxicity. Storage, storage and handling of pesticides	Presentation of laboratory equipment, working methods and labor protection measures during laboratory hours	2
6. Disease pathography, microscopy and the evolutionary cycle of pathogens of horticultural crops grown in the field	Presentation of laboratory equipment, working methods and labor protection measures during laboratory hours	2
7. Disease pathography, microscopy and evolutionary cycle of pathogens of horticultural crops grown in protected areas: tomatoes, cucumbers,	Presentation of laboratory equipment, working methods and labor protection measures during laboratory hours	2
8. Disease pathography, microscopy and evolutionary cycle of pathogens of horticultural crops grown in protected areas:	Presentation of laboratory equipment, working methods and labor protection measures during laboratory hours	2
9. Disease pathography, microscopy and evolutionary cycle of pathogens of fruit trees and fruit bushes	Power point presentations, drawings. Prospects for approved pesticides for use in field crops	2
10. Disease pathography, microscopy and the evolutionary cycle of vine pathogens	ower point presentations, drawings. Leaflets of pesticides approved for use in field crops (visit to a pesticide storage or disposal unit)	2
11. Disease pathography, microscopy and the evolutionary cycle of green ornamental plant pathogens	ower point presentations, drawings. Leaflets of pesticides	2

	approved for use in field crops (visit to a pesticide storage or disposal unit)	
12. Disease pathography, microscopy and the evolutionary cycle of pathogens of ornamental flowering plants	Apparatus and method used in plant protection practice	2
13. Disease pathography, microscopy and evolutionary cycle of stored plant pathogens	Presentation of methods for harvesting, herbalization and preparation of permanent preparations in preservation solutions	2
14. Verification of the aptitudes for evaluating the pathogenesis processes at the level of plants	Recapitulation of the activities carried out, practical verification of the acquired knowledge	2
8.4 Project		
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Bibliography

1. CSEP N., CSEP A.: Lucrări practice de fitopatologie. Universitatea din Oradea, Facultatea de Protecţia Mediului, Specializarea Agricultură - Horticultură, Editura Universităţii din Oradea, 2001.pp.5-62 şi 71-167; p.167 + 4 planşe color; 2001.
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3.CSEP M., RADÓCZ L., DÁVID I.: Manipularea şi utilizarea produselor de protecţia plantelor. Cross-border cooperation Programme Magyarország-Romania, INTERREG III/A HU-RO 0602/105, Editura: Magyar Növényvédő Mérnöki és Növényorvosi Kamara Hajdú-Bihar megyei Területi Szervezete, Debrecen,206 p., 2008.

* The content, respectively the number of hours allocated to each course / seminar / laboratory / project will be detailed during the 14 weeks of each semester of the academic year.

9. Corroboration of discipline content with the expectations of the epistemic community, professional associations and representative employers from the field corresponding to the study programme

- The content of the course and the laboratory works was adapted based on the knowledge and skills necessary to be included in the specific activities requested by potential employers, enterprises, economic actors, professional associations. similar in the country and meet the requirements formulated by the institutions of coordination, guidance, research or agricultural production.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the final grade
10.4 Course	Knowledge of the causes and effects of	Oral exam, with the required answer to at	70%

	pathogenesis processes, of the host-pathogens-environment correlation and of the practical possibilities of preventing and combating the quantitative, qualitative and financial effects of the disease processes of horticultural plants	least 2 questions from the exam ticket	
10.5 Seminar	-	-	-
10.6 Laboratory	Knowledge of specific equipment, recognition The presence of pathogenesis processes	Orally, practical use of the equipment, practical recognition of the symptoms of the disease	
10.7 Project	-	-	-
10.8 Minimum standard of performance: Independent use of equipment for phytosanitary analysis, information from phytosanitary forecasting, equipment used for pesticide treatments. Elaboration of a phytosanitary action plan and its implementation. Knowledge of the main groups of pesticides and their toxicity, measures to prevent poisoning and reduce their negative impact on the environment.			

Date of completion

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Signature of course holder**

Lect.Phd.eng.Stanciu Alina Ştefania
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Signature of seminar laboratory/project holder **

Lect.Phd.eng.Stanciu Alina Ştefania

Date of approval in the department

.....

Signature of the Head of Department

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Dean signature

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** - Name, first name, academic degree and contact details (e-mail, web page, etc.) will be specified.
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