SUBJECT OUTLINE

1. Information on the study programme

1.1 Academic institution	**UNIVERSITY OF ORADEA**
1.2 Faculty	**FACULTY OF ENVIRONMENTAL PROTECTION**
1.3 Department	**FORESTRY AND FOREST ENGINEERING**
1.4 Field of study	**FORESTRY**
1.5 Cycle of study	**MASTER**
1.6 Study programme/Qualification	**SUSTAINABLE EXPLOITATION OF FOREST RESOURCES/ENGINEER**

2. Information on the discipline

2.1 Name of discipline	**AGROFORESTRY SYSTEMS**					
2.2 Course holder	**BARTHA SZILARD**					
2.3 Seminar/Laboratory/Project holder	**DOROG LUCIAN SORIN - LABORATORY**					
2.4 Year of study	II	2.5 Semester	1	2.6 Type of evaluation	Summative	2.7 Regime of discipline	O

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

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

3.1 Number of hours per week	3	out of which: 3.2 course	2	out of which 3.3 seminar/laboratory/project	1
3.4 Total hours in the curriculum	42	out of which: 3.5 course	28	out of which 3.6 seminar/laboratory/project	14
Time allotment					
Study assisted by manual, course support, bibliography and notes					48
Additional documentation in the library/ on specialised electronic platforms and in the field					48
Preparation of seminars/laboratories/ topics/reports, portfolios and essays					48
Tutorship					6
Examinations					8
Other activities..................................					-

3.7 Total hours of individual study	**158**
3.9 Total hours per semester	**200**
3.10 Number of credits	**8**

4. Pre-requisites (where appropriate)

4.1 curriculum	Dendrology, Meteorology and climatology, Pedology, Forest sytes, Afforestation, Forestry
4.2 competences	General notions of agroforestry: practices and classification of agroforestry systems.

5. Conditions (where appropriate)

5.1. related to course	- Beamer
5.2. related to seminar/laboratory/ project	- Facilities for conducting laboratory classes (computers, agricultural tools, General normatives); -Performing all laboratory work

6. Specific competences acquired

Professional competences	▪ C1.5 Developing evaluation projects to asses the forest ecosystems diversity by means of classical and modern evaluation methods, both quantitative and qualitative. ▪ C2.2 Using specialized knowledge for explanation and interpretation of interaction between forest ecosystems, agroforestry systems and the environment. ▪ C3.1. Assessing and characterizing the risk factors (biological, physical, chemical and social - labor, management, protection and exploitation) on forest ecosystems
Transversal competences	▪ CT.1. Fulfilling students' own tasks with professionalism and rigor and making teamwork specific decisions in accordance with ethical values and principles.

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

7.1 General objective	The course "Agroforestry systems" aims to familiarize MA students with the basics of sustainable methods of land management combining crops (grasses), orchards and forests and / or livestock simultaneously or sequentially while applying management practices that are compatible with the methods used by the local population in order to: increased revenue opportunities, variety of products and / or services and an enhanced diversity of cultures and reducing the risks.
7.2 Specific objectives	The laboratory works are designed in such manner to provide practical skills to forestry engineers in order to combine crops (grasses), orchards and forests and / or livestock simultaneously or sequentially while applying management practices that are compatible with the methods used by the local population.

8. Contents*/

8.1 Course	Methods of teaching	No. of

		hours/Remarks
1. General notions	Beamer. Lecture. Discussion	2
2. The biological, ecological, technical and economic bases of the agroforestry systems	Idem	2
3. Classification of agroforestry systems	Idem	2
4. Substantiation of the establishment of agroforestry systems in relation to the seasonal conditions	Idem	4
5. Management of agroforestry systems included in the forest fund	Idem	4
6. Management of agroforestry systems included in the agricultural fund	Idem	8
7. Protection works specific to agroforestry systems	Idem	4
8. Economic efficiency of agroforestry systems	Idem	2

Bibliography
1. Mihăilă E., Costăchescu C., Dănescu F., Drăgoi S.: *Sisteme agrosilvice*. Editura Silvică Bucureşti, 2010.
2. Costăchescu C., Dănescu F., Mihăilă E., *Perdele forestiere de protecţie*. Editura Silvică Bucureşti, 2010.
3. Florescu G., Abrudan I., *Tehnologii de instalare a culturilor forestiere*, Editura Universităţii Transilvania, Braşov, 2003.
4. Ivănescu Şt., *Tehnica culturilor silvice*, Editura CERES Bucureşti.
5. Neşu I., *Perdele forestiere de protecţie a câmpului*, Editura STARR TIPP Slobozia, 1999.
6. Bartha Sz., *Sisteme agrosilvice*-note de curs, Oradea, 2020.

8.3 Laboratory	Methods of teaching	No. of hours/Remarks
1. Cultures in intimate mixture	Explanation,demonstration	2
2. Interspersed cultures	Explanation,demonstration	2
3. Forest field protection curtains	Explanation,demonstration	2
4. Forest water protection curtains	Explanation,demonstration	2
5. Silvopastoral systems	Explanation,demonstration	4

Bibliography
1. Mihăilă E., Costăchescu C., Dănescu F., Drăgoi S.: *Sisteme agrosilvice*. Editura Silvică Bucureşti, 2010.
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6. Bartha Sz., *Sisteme agrosilvice*-note de curs, Oradea, 2020.

* 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**

Course content is adapted to meet the requirements of the labor market, as agreed with the social
partners, professional associations and employers in the study program related field. Course content is

reflected in the Forestry specialization curricula in other universities in Romania that approved these academic fields of specializations, therefore familiarization with the basics is an urgent requirement of the employers in forestry and logging, such as RNP, ICAS, IFN , etc.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of the final grade
10.4 Course	Drawing essay Written exams-grid test;	Submit essay (50%) Grid test (50%)	75%
10.6 Laboratory	Oral examination; laboratory course questions	Weighting in the final grade laboratory note is weighted 25%.	25%
- Grade components: Exam (Ex), Laboratory (L); - Grade calculation formula: N=0.75Ex+0.25L; - Condition for obtaining the credits: N>5; L>5;			
10.8 Minimum standard of performance: Obtaining a grade of 5, acquiring knowledge and the ability to apply it.			

Date   Course leader signature   Laboratory work leader
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