UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
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**Nr._____din _____** **Formular USAMV 0706020103**

# FIŞA DISCIPLINEI

## 1. Date despre program

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|---|---|
| 1.1. Higher education institution | University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca |
| 1.2. Faculty | Food Science and Technology |
| 1.3. Department | Food Engineering |
| 1.4.Study domain | Food Engineering |
| 1.5.Study cycle[1)] | Master |
| 1.6.Specialization/ Study program | Food Safety and Consumer Protection |
| 1.7. Learning form | IF |

## 2. Discipline data

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| 2.1. Discipline name | **The imprint of the agri-food chain on the environment** | | | | | | | |
| 2.2. The course holder | | | | **Lect. Dr. Biriş Dorhoi Elena-Suzana** | | | | |
| 2.3. The seminar/laboratory/project holder | | | | **Lect. Dr. Biriş Dorhoi Elena-Suzana** | | | | |
| 2.4. Year of study | II | 2.5. Semester | I | 2.6. Evaluatio type | Adder | 2.7. Discipline regime | Content[2] | **DD** |
| | | | | | | | Obligativity[3] | **DI** |

## 3. Estimated total time (hours per semester of teaching activities)

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| 3.1. Number of hours per week- frequency form | 3 | From which: 3.2. course | 2 | 3.3. seminar/ laboratory/ project | 1 |
| 3.4.Total hours in the curriculum | 42 | From which: 3.5.course | 28 | 3.6.seminar/laboratory | 14 |
| Distribution of time fund | | | | | ore |
| 3.4.1.Study by textbook, course support, bibliography and notes | | | | | 25 |
| 3.4.2. Additional documentation in the library, on specialized electronic platforms and in the field | | | | | 35 |
| 3.4.3. Preparation of seminars/laboratories/projects, topics, papers, portfolios and essays | | | | | 20 |
| 3.4.4.Tutorial | | | | | 10 |
| 3.4.5.Examinations | | | | | 14 |
| 3.4.6. Other activities | | | | | 4 |
| 3.7. Total individual study hurs | 108 | | | | |
| 3.8. Total hours per semester | 150 | | | | |
| 3.9. Number of credits[4] | 5 | | | | |

## 4. Preconditions (where applicable)

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| 4.1. of curriculum | Ecology, Botany |
| 4.2. of competences | The student must have knowledge about the structure and functioning of ecosystems and agroecosystems. |

## 5. Conditions (where applicable)

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| 5.1. of the course | The course is interactive, students can ask questions about the content of the presentation. Discipline is required. The begin and the end time must be respected. |

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| | No other activities are tolerated during the lecture, mobile phones should be turned off. |
| 5.2. of the seminar/ laboratory/ project | References are presented at the seminar that include information related to thr circulation of energy and substance in agroecosystems but also tot he production of food.<br>Case studies are being discussed. |

**6. Specific skills aquired**

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| Professional skills | C3.1 Description of the spcific engineering termonilogy in connection with the multidisciplinary terminology spcific to the field.<br>C3.2Analysis and identification of institutional responsibilities related to agri-food chain and food production<br>C3.3. Integrated use of concepts and theories related to agri-food and food production in relations with other institutional bodies<br>C3.4 Use of criteria and methods for evaluationg agri-food production for expertise, studies, consulting<br>C3.5 Elaboration of interinstitutional projects specific to agri-food production and food certidication |
| Transversal skills | Each student will prepare a paper with a case study in which the functionality of the agroecosystem for a certain food good will be demonstrated.<br>CT1 Realization of complex, interdisciplinary and individual projects |

**7. The objestives of the discipline** (based on the grid of specific skills aquired)

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| 7.1. General objective of the discipline | Understanding the functioning mechanism of the agroecosystem in the context of climate change and its role in food production. |
| 7.2. specific objectives | To aquire the knowledge about the trophic structure of the ecosystem.<br>To know and specify nature cycles in the agroecosystem.<br>To understand how food products are made in agricultural systems.<br>To reflect on the importance of climate change processe, uncertainties and their understanding to support the formulation and implementation of innovative action plans for climate change mitigation. |

**8. Content**

| **8.1. COURSE**<br>**Number of hours – 28** | Teaching methods | Observations |
|---|---|---|
| **I**ntroduction in Agroecology<br>Definitions and concepts of climate change | **Lecture** | 1 lecture |
| Generalities regarding the agroecosystem. Definitions and structure of the agroecosystem. Soil as an essential subsystem of the structure of agroecosystems | **Lecture** | 1 lecture |
| Overview of the history of climate change, in geological and human history; | **Lecture** | 1 lecture |
| The flow of solar energy, primary production and the factors that influence it. Energy classification of agroecosystems | **Lecture** | 1 lecture |

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|---|---|---|
| Trophic network, secondary production in agroecosystems | **Lecture** | 1 lecture |
| Circulation of substances. The theory of biogeochemical cycles | **Lecture** | 1 lecture |
| Biogeochemical cycles and their role in biodiversity conservation | **Lecture** | 1 lecture |
| Gross primary production and net primary production. Net primary production and harvest. Factors influencing primary production. | **Lecture** | 1 lecture<br>1 lecture |
| Secondary production in agroecosystems and secondary production efficiency. | **Lecture** | 1 lecture<br>1 lecture |
| Evidence for current and future climate change and climate change scenarios; | **Lecture** | 1 lecture |
| The impact that climate change will have on the global food chain; | **Lecture** | 1 lecture<br>1 lecture |

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| **8.2. LABORATORIES**<br>**Number of hours – 14** | | |
| Defining the system concept. General systems theory. | Theoretical substantiation | 1 seminar |
| Agroecosystem: definition, structure. Conceptual modeling of the agroecosystem. | Theoretical substantiation | 1 seminar |
| The role of the agri-food industry and anthropogenic processes in contributing to climate change; | Theoretical substantiation | 1 seminar |
| Primary and secondary production, net and gross. | Theoretical substantiation | 1 seminar |
| Food production in extensive and intensive agroecosystems. | Theoretical substantiation | 1 seminar |
| Food production in bio (ecological) agroecosystems, its problems and approaches; | Theoretical substantiation | 1 seminar |
| Environmental impact of the food product. | Theoretical substantiation | 1 seminar |

*Mandatory bibliography::*

1. *PUIA I., SORAN V., ROTAR I., (1998), Agroecologie, ecologism, ecologizare, Ed. Genesis*
2. *PUIA I., SORAN V., CARLIER L., ROTAR I., VLAHOVA M., (2001), Agroecologie si ecodezvoltare, Ed., AcademicPress*

*Optional bibliography:*

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| 1. | *Carlier, L., I. Puia, I. Rotar.,For a better grass production, Ed. Risoprint,* |

**9. Corroborating the contents of the discipline with the expectations of the representatives of the epistemic communities, professional associates and representative employers in the field related tot the program**

In order to identify ways of modernization and continous improvement of teaching course content, information from national and internation scientific meetings on the management of food production in agriculturaş systems will be accessed.

**10. Evaluation**

| Activity Type | 10.1. Evaluation criteria | 10.2. Evaluation methods | 10.3. Share of final grade |
|---|---|---|---|
| **10.4. Course** | To define agroecology as a science and to know the structure, classification and functioning of the agroecosystem and the realization of food goods. | Exam | 70% |
| **10.5. Seminar/Laboratory** | Solving a case study on the functioning of agroecosystems and food production. | Colloquy | 30% |
| **10.6. Minimum performance standard** | | | |
| Master the scientific information transmitted through lectures and laboratories at an acceptable level.<br>Obtaining the passing grade for the ongoing checks is a condition of passability.<br>Elaboration of the disertation paper of grade min. 6 | | | |

[1] Ciclul de studii- se alege una din variantele- Licenta/Master/Doctorat

[2] Regimul disciplinei (continut)- pentru nivelul de licenta se alege una din variantele- **DF** ( disciplina fundamentala), **DD** ( disciplina din domeniu), **DS** ( disciplina de specialitate ), **DC** ( disciplina complementara).

[3] Regimul disciplinei ( obligativitate)- se alege una din variantele – **DI** ( disciplina obligatorie) **DO** ( disciplina optionala) **DFac** ( disciplina facultativa).

[4] Un credit este echivalent cu 25-30 de ore de studiu ( activitati didactice si studiu individual).

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| **Filled in on 8.09.2021** | Course coordinator<br>**Lect. Dr. Biris Dorhoi Elena-Suzana** | Laboratory work/seminar coordinator<br>**Lect. Dr. Biris Dorhoi Elena-Suzana** |
| | **The Coordinator**<br>**Prof. dr. Maria Tofană** | |
| **Approved by the department on 22.09.2021** | **Head of department**<br>**Prof. dr. Ramona Suharoschi** | |

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| **Approved by the Faculty Council on 28.09.2021** | **Dean**<br>**Prof. dr. Elena Mudura**<br>  |