



No. _____ of _____

USAMV form 0108020101

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	II Crop Science
1.4. Field of study	Agronomy
1.5. Cycle of study ¹	Master
1.6. Specialization/ Study programme	Organic Agriculture
1.7. Form of education	Full time

2. Information on the discipline

2.1. Discipline name	Specific technologies for plant cultivation in organic farming							
2.2. Course coordinator	Prof.dr. Marcel M. DUDA							
2.3. Seminar/ laboratory/ project coordinator	Prof.dr. Marcel M. DUDA							
2.4. Year of study	II	2.5. Semester	I	2.6. Evaluation type	summative	2.7. Discipline status	Content ²	DS
							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					42
3.4.2. Additional documentation in the library, electronic platforms and field experiences					22
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					20
3.4.4. Tutorials					16
3.4.5. Examinations					16
3.4.6. Other activities					
3.7. Total hours of individual study	114				
3.8. Total hours per semester	170				
3.9. Number of credits ⁴	6				

4. Prerequisites (if applicable)

4.1. curriculum-related	Pedology, Agrochemistry, Botany, Agro-technical, Phytopathology, Entomology, Irrigation, Plant Physiology
4.2. skills-related	The student must be a graduate or graduate, have knowledge of plant nutrition, physico-chemical properties of soils, biology and morphology of crop plants and weeds, diseases and pests of plants, economic damage thresholds, pest control products, irrigation regime.

5. Conditions (if applicable)

5.1. for the course	The course is interactive, students may ask questions regarding the content of the exposure. Academic discipline requires compliance for the time to start and end of the course. No other kind of activities are tolerated during the lecture, mobile phones must be closed.
5.2. for the seminar/	At practical works is mandatory to consult the practical book/tutor. Each student will conduct

laboratory/ project	a single or small groups activity in the laboratory using materials available and described in the practical book/tutor. Academic discipline is imposed for the duration of works.
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6. Cumulated specific competences

Professional competences	<p>To know the specific agronomic language for plant cultivation in the organic farming system. Know the areas of favorability of plants. To understand the mechanisms of nutrition and control of diseases and pests in the organic farming system. To recognize the main cultivated species, weed species, pests and diseases. To acquire the means to increase the quantity and quality of the production. To know the growth and development phenomena of plants grown in the organic farming system. To master the mechanisms and adjustments to agricultural machinery used for maintenance and harvesting. To thoroughly master the cultivation technologies specific to the plants grown in the organic farming system.</p>
Transversal competences	<p>To demonstrate the ability to develop a cultivation technology for plants grown in the organic farming system. To be able to develop projects to ensure the necessity of ecological fertilizers through composting. To be able to think about practical activities regarding the adaptation of certain elements of technology for specific conditions To show concern about professional development. To participate in research activities in the field of experiences of the discipline.</p>

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

7.1. General objective	To acquire knowledge about biology, plant relationships with vegetation factors and cultivation technologies.
7.2. Specific objectives	<p>To customize the knowledge of plant growth and development, the relationships with the vegetation factors and the elements of the cultivation technology for each particular crop plant. To be able to develop a cultivation technology of crop plants adapted to the requirements and norms for the organic farming system.</p>

8. Content

8.1.COURSE: 28 hours

Oil plants: sunflower, oil flax, rapeseed uses and chemical composition of the main product, areas cultivated in Europe and in our country, varieties suitable for organic farming and organic cultivation technology (rotation, fertilization, soil work, seed and sowing) , the care and harvesting works, the obtained productions and the potentials of organic production).	Methods of teaching	Observations
	Lectures	4 lectures
Textile plants: fiber flax, fiber and seed hemp. Uses and chemical composition of the main product, areas grown in Europe and in our country, varieties suitable for organic farming and organic cultivation technology (rotation, fertilization, soil work, seed and sowing, care and harvesting, production obtained and potentials for organic production).	Lectures	3 lectures
Root and tuberous plants: potato, sugar beet, chicory. Uses and chemical composition of the main product, areas cultivated in Europe and in our country, varieties suitable for organic farming and organic cultivation technology (rotation, fertilization, soil work, sowing and sowing, care and harvesting work, yields obtained and potential organic production).	Lectures	3 lectures
Medicinal and aromatic plants: with volatile oils, with alkaloids, with heterozoids and other medicinal plants.	Lectures	4 lectures

8.2.PRACTICAL WORK: 28 hours

Fertilization of oil, textile, root and tuberculiferous plants by applying natural organic fertilizers (compost).	Project for the implementation of the works	3 laboratory works
Nutrient supplementation by applying natural mineral fertilizers to oilseeds, textiles, roots and tubers.	Project for the implementation of the works	2 laboratory works
Mechanical control of caterpillars rolling stock with hoes, mechanical hoes.	Demonstration in the field	1 laboratory work
The use of fire as a pre-emergent means of controlling the perennial weeds from the pre-herbal plant.	Demonstration in the field	1 laboratory work
Disease and pest control using natural products and pheromone traps.	Case study	3 laboratory works

Production evaluation of oil, textile, root and tuberculiferous plants.	Demonstration	2 laboratory works
The consequences of the presence of residues in seeds.	Examples from specialized literature	2 laboratory works
<p>Compulsory bibliography:</p> <ol style="list-style-type: none"> 1. Duda M.M., 2019. Notițe de curs 2. SATTLER Friederick, Eckardt V. WISTINGHAUSEN, 1992, La ferme Bio-Dynamique; 3. CATHERINE DE SILGUY, 1994, L agriculture biologique Suisse; 4. HESKRA A., 1996, Sustainable Nutrient Management in Agriculture, Ecoscript, Amsterdam; 5. MORAR G., A FIȚIU, S. CERNEA, S. VÂTCĂ, M. OLTEAN, CAMELIA SÎRBU, 2003, Tehnologii în agricultura ecologică cartof -sfecla pentru zahar, Ed. Risoprint, Cluj-Napoca Colectia agraria ISBN:973-656-551-3 6. MUNTEAN L. S., S. CERNEA, M. DUDA, A. FIȚIU, D. VÂRBAN, L. MUNTEAN, S. MUNTEAN, 2003, Tehnologii în agricultura ecologică, Ed. RISOPRINT, Cluj-Napoca 7. TONCEA I., 1999,, Agricultura ecologică în contextul agriculturii durabile, Simpozion ASAS „Agricultura Durabilă-Performantă”, pag. 51-60 8. TONCEA I., 2002, Ghid practic de agricultură ecologică. Tehnologii ecologice de cultivare a terenurilor, Ed. AcademicPres, Cluj-Napoca 9. TONCEA I., R. STOIANOV, 2002, Metode ecologice de protecția plantelor, Ed. Științelor Agricole, București <p>Facultative bibliography:</p> <ol style="list-style-type: none"> 1. *** Revista BIOTERRA- Revista bioagricultorilor; 2. ***Buletin de informare asupra agriculturii franceze Agroecologia- FNSEA; 3. ***Cahier de charges pour une agriculture durable-option 2-CEDAPA; 4. *** Cahier de charges concernant le mode de production biologique; 5. ***Regulamentul 2078/1992 al U.E.E.; 6. *** Regulamentul 2092/1991 al U.E.E. 		

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 ways of modernization and continuous improvement of teaching and course content with the current issues and practical problems teachers participate in regular meetings where they meet with farmers and experts in specific areas being discussed current issues and future plant cultivation technology, control of pests and diseases with new products and new forms of fertilizer application on soil and foliage.

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	Presentation of the knowledge acquired by the biology, the relations of the plants with the vegetation factors, the cultivation technology in the system of ecological agriculture and the conservation of the plants.	Oral exam	70%
10.5. Seminar/ Laboratory	Recognition of the studied species. Plant morphology and systematics.	Assessment of knowledge in the studied agricultural crops	30%

10.6. Minimum performance standards

Sufficient mastery of the scientific information presented in lectures and practical work. Obtain the pass mark in the practical exam is a condition of participation in the oral examination..

Filled in on
04.09.2019

Course coordinator
Prof.dr. Marcel M. DUDA

Laboratory work/seminar coordinator
Prof.dr. Marcel M. DUDA

Approved by the
department on
05.09.2019

Head of the Department
Prof.dr. Marcel M. DUDA