



1. General information

Course: ORGANIC FARMING

Type: ELECTIVE

Degree: 411 - UNDERGRADUATE DEGREE PROGRAMME IN AGRICULTURAL AND FOOD ENGINEERING

Center: 107 - E.T.S. OF AGRICULTURAL ENGINEERS OF C. REAL

Year: 4

Main language: Spanish

Use of additional languages:

Web site:

Code: 60371

ECTS credits: 4.5

Academic year: 2023-24

Group(s): 20

Duration: C2

Second language:

English Friendly: Y

Bilingual: N

Lecturer: MARTA MARIA MORENO VALENCIA - Group(s): 20

Building/Office	Department	Phone number	Email	Office hours
ETS Ingenieros Agrónomos,303	PROD. VEGETAL Y TGIA. AGRARIA	926052643	martamaria.moreno@uclm.es	Mondays and Fridays, 9.30 - 12.30 h. It is recommended to contact previously with the Professor.

Lecturer: JAIME VILLENA FERRER - Group(s): 20

Building/Office	Department	Phone number	Email	Office hours
E.T.S. Ingenieros Agrónomos CR/0.18	PROD. VEGETAL Y TGIA. AGRARIA		Jaime.Villena@uclm.es	Mondays 12.00-15.00; Tuesdays, Wednesdays y Thursdays 14.00- 15.00.

2. Pre-Requisites

The study schedule of the Degree does not establish any prerequisite to take this subject, although it is recommended to have passed the subjects of General Field Crop Science, Environmental Science and Technology, Edaphology and Climatology, General Arboriculture and Horticulture.

3. Justification in the curriculum, relation to other subjects and to the profession

This subject society demands a guarantee of food safety through the monitoring of the different stages of cultivation and the products used to obtain them by means of traceability, controlled quality products, denomination of origin, etc. On the other hand, society also demands to minimize the impact of agricultural practices and their consequences on the environment, providing with the consumption of products obtained from organic agriculture its contribution to the environment. The consumption of products obtained from organic agriculture contributes to mitigate the negative effects of highly energy-consuming agricultural practices and, therefore, partly responsible for climate change that are occurring today. As a result, the production and consumption of food from organic farming worldwide are reaching considerable levels that are increasing year after year as shown by statistics.

All this requires that new technicians who are trained in agronomic sciences know this production method, its basis and its possibilities.

4. Degree competences achieved in this course

Course competences

Code	Description
E45	Ability to know, understand and use the principles of knowledge of complementary subjects specialising in Agricultural Farming, with an open, multidisciplinary character and with direct application in the professional scope of the Agricultural Technical Engineer
G01	Knowledge of a foreign language
G03	Speaking and writing skills
G04	Analysis and synthesis capacity
G05	Organization and planning capacity
G07	Problem resolution
G08	Decision-making
G09	Ethical commitment and professional ethics
G10	Teamwork
G11	Interpersonal relationship skills
G13	Teamwork
G14	Autonomous Learning
G15	Adaptation to new situations
G16	Creativity
G17	Leadership
G18	Initiative and enterprising spirit
G19	Quality Motivation
G20	Environmental sensitivity
G21	Ability to apply practical knowledge
G22	Basic knowledge of the profession
G23	Ability to communicate with non-experts
G31	Ability to solve problems with creativity, initiative, methodology and critical thinking
	Ability to develop their activities, assuming a social, ethical and environmental commitment in tune with the reality of the human and

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Improve the capacity to integrate new technologies with the environmental impact within the agri-food sector, being sensitive to the capacity to participate in multidisciplinary initiatives or groups.

Possibility of autonomously expanding specific knowledge through the search for new applications or by developing those already acquired.

Acquire knowledge and skills in the use of specific tools that provide the student with a greater operational capacity of the acquired knowledge.

Identification and use of emerging technologies in the field of Agricultural and Agri-food Engineering.

Complement basic and specific training oriented to a certain specialisation with an open, multidisciplinary character and with direct application in the professional field.

Additional outcomes

Transmit the fundamental concepts that define an agricultural production method based on respect for the ecosystem and natural laws, which is socially accepted and fair, economically profitable and energetically viable.

This production system is regulated by Regulation (EC) 848/2018 and complementary provisions.

As a result of learning this subject, the student shall:

- Understand the Community legislation that regulates organic production.
- Know the capacity of self-regulation of agrosystems that allow a low impact production with the environment, able to counteract and palliate from the energetic point of view the excesses of other more intensive production systems.
- To develop the capacity to interpret the traditional knowledge of the rural population in order to approach their needs and propose sustainable alternatives.
- To acquire the necessary knowledge to defend an agriculture that is integrated into a society that is sensitive to environmental problems and demands food security.

6. Units / Contents

Unit 1: Introduction.

Unit 1.1 Introduction to organic farming. Agriculture in the ecosystem

Unit 2: The soil.

Unit 2.1 The soil, the basis of organic farming.

Unit 3: Organic farming techniques

Unit 3.1 Importance and management of biodiversity. Crop rotations and associations. Plant covers. Hedgerows

Unit 3.2 Organic and inorganic fertilization.

Unit 3.3 Ecological management of weeds.

Unit 3.4 Crop health.

Unit 3.5 Seeds and plant material. Importance of local varieties.

Unit 4: Specific aspects of organic farming.

Unit 4.1 Legislation. Control and certification.

Unit 4.2 Marketing of organic products.

Unit 4.3 Conversion process to organic farming.

Unit 5: Agroecological management of extensive herbaceous, horticultural and woody crops.

Unit 6: Seminars.

Unit 7: Visits to farms with organic production systems.

ADDITIONAL COMMENTS, REMARKS

The contents of this subject have the following basic objectives: increase in the level of knowledge, emerging technologies, environmental impact of technology and training in agricultural and agri-food engineering.

The aim is to integrate the classical knowledge of agricultural production with the aspects that determine an activity of low environmental impact that would be summarized especially in the knowledge of the soil as the basis of the same, the management of the different techniques that are used but from a less impacting point of view with the environment and less energy consumption. Its ultimate goal is therefore to achieve food of the highest organoleptic quality and a guaranteed healthiness that provides society with a new, more sustainable production system in accordance with the current needs.

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	E45 G01 G04 G05 G08 G13 G20 G22	1.28	32	Y	N	Master classes that develop the different aspects on which the productive method is based, with active participation of the students. The evaluation of this training activity will be carried out through the assessment of class participation and the corresponding exams.
Workshops or seminars [ON-SITE]	Workshops and Seminars	E45 G01 G03 G04 G05 G07 G08 G10 G11 G13 G15 G16 G18 G19 G20 G21 G22	0.1	2.5	Y	N	Workshops that complement the theoretical classes by means of audiovisual media, debates and individual and group work. The evaluation of this training activity will be carried out through the assessment of class participation and the corresponding exams.
							Individual or group presentation and

Project or Topic Presentations [ON-SITE]	Individual presentation of projects and reports	G03 G04 G05 G07 G08 G10 G13 G14 G17 G21 G22 G23 G31 G34	0.12	3	Y	N	discussion of specific topics related to the subject, presented in the classroom during the course (not recoverable in the official calls), tutored by the professor. The evaluation of this formative activity will be carried out through the item Oral presentation of topics.
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	E45 G03 G05 G08 G10 G11 G13 G19 G20	0.2	5	Y	N	Field trips where students can check in situ the reality and therefore the economic and social viability of this production system. Carrying out of seedbeds and transplanting to the fields trials of the ETSIA. This activity will be evaluated through the assessment of participation and the corresponding exams.
Writing of reports or projects [OFF-SITE]	Self-study	E45 G01 G03 G04 G05 G07 G08 G09 G10 G11 G13 G14 G15 G16 G18 G19 G20 G21 G22	1	25	Y	N	In continuous evaluation, includes the delivery of questionnaires on topics covered in class, with classroom discussion, as well as the completion of an individual or group work to present and discuss in class (subject indicated in Moodle during the first two weeks of the course). This work will have a maximum length of 5 pages, and it will be developed through the study and search for information, specific aspects of organic production. Formative activity not recoverable in the dates of the official calls. In non-continuous evaluation, it is contemplated the delivery of a work of greater extension with the characteristics and on the dates indicated in the following sections.
Study and Exam Preparation [OFF-SITE]	Self-study	E45 G01 G04 G05 G07 G13 G14 G16 G18 G19 G20 G21 G22	1.7	42.5	N	-	Autonomous work of the student for the preparation of the evaluation tests.
Final test [ON-SITE]	Assessment tests	E45 G01 G03 G04 G05 G07 G08 G13 G15 G16 G19 G21 G22	0.1	2.5	Y	Y	Exams in which the subjects developed during the course are evaluated in the official calls during the course. Activity recoverable in the extraordinary call.
Total:			4.5	112.5			
Total credits of in-class work: 1.8			Total class time hours: 45				
Total credits of out of class work: 2.7			Total hours of out of class work: 67.5				

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System			
Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Projects	15.00%	25.00%	Work of different modalities in continuous and non-continuous evaluation.
Oral presentations assessment	5.00%	0.00%	Individual or group exposition of specific topics related to the subject, exposed during the class period, tutored by the professor. It will be valued the clarity and fluency in the exposition and the audiovisual media used, as well as the mastery and knowledge of the subject in the subsequent debate.
Final test	70.00%	75.00%	Completion of exams. Minimum required score of 4 out of 10 points to count the other evaluable activities.
Assessment of active participation	10.00%	0.00%	The student's participation and motivation in theory classes, trips, practicals and seminars (answers in class, participation in debates, etc.) will be valued.
Total:	100.00%	100.00%	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

In order to accumulate points from the above breakdown, it is necessary to obtain in the final exam a rating equal to or higher than 4 out of 10 points. In case of not achieving this rating, the qualification obtained in the exam will appear in the academic minutes.

The questionnaires that make up the Project will be delivered on the dates indicated in Moodle, once the corresponding theme has been completed; the individual or group work (abstract and audiovisual material) will be delivered around week 13 of the course (to be specified in Moodle). The oral presentations will be staggered during the course, from week 5 until the end of the course, in the order agreed with the students or, failing that, assigned by the teachers.

In order to pass the course it is necessary to obtain an overall rating of at least 5 out of 10 points.

Non-continuous evaluation:

If a student wants to change to a non-continuous evaluation mode, he/she must communicate it to the professors (otherwise, he/she will be considered in continuous evaluation), as long as he/she has not participated during the class period in evaluable activities that represent at least 50% of the total evaluation of the subject. If a student has reached this 50% of evaluable activities or if, in any case, the class period has ended, he/she will be considered in continuous evaluation without the possibility of changing the evaluation modality.

The final test (75%) will consist of an exam in which the theoretical and practical knowledge acquired by the student during the course will be evaluated.

In order to accumulate points from the above breakdown, it is necessary to obtain in the final exam a rating equal to or higher than 4 out of 10 points. In case of not achieving this rating, the qualification obtained in the exam will appear in the academic minutes.

Students who follow the non-continuous evaluation should contact the professors for the assignment of the topic of the work (at least one month before the end of class period). It will be delivered at least 15 days before the date of the official exam of the ordinary call, and during the day of the exam or on a date previously arranged for this purpose, questions will be asked to the student about it.

In order to pass the course, it is necessary to obtain an overall rating of at least 5 out of 10 points.

Specifications for the resit/retake exam:

The same criteria will be followed as in the official ordinary call, keeping in this call the ratings obtained in the items Assessment of active participation, Oral presentation assessments and Projects (continuous evaluation), and Projects (non-continuous evaluation) of the ordinary call.

For both calls and evaluation modalities, the following aspects will be assessed in the correction of the different tests: degree of information provided in the answers, organization, level of understanding, rigor in the exposition, order and clarity, oral and written expression.

Specifications for the second resit / retake exam:

The same criteria will be followed as in the ordinary final exam in the non-continuous evaluation modality. For the assignment of the topic of the work, the students must contact the professors at least one month before the date of the exam.

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	32
Workshops or seminars [PRESENCIAL][Workshops and Seminars]	2.5
Project or Topic Presentations [PRESENCIAL][Individual presentation of projects and reports]	3
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	5
Writing of reports or projects [AUTÓNOMA][Self-study]	25
Study and Exam Preparation [AUTÓNOMA][Self-study]	42.5
Final test [PRESENCIAL][Assessment tests]	2.5
Unit 1 (de 7): Introduction.	
Comment: During the first two weeks of the course, the topic of the works will be assigned to the students who follow continuous evaluation. The exposition and debate in the classroom, as well as the delivery of the abstract of these works, will be carried out sequentially from the middle of the term, preferably following the order chosen by the students; otherwise, the professors will assign the date to each student. Students who follow non-continuous evaluation must contact the professors at least one month before the end of the class period for the assignment of the topic of the work, and deliver it at least 10 days before the date of the official exam of the ordinary call. During the day of the exam or on a date previously arranged for this purpose, the student will be asked questions about the it. It is foreseen to carry out 1-2 technical visits during the course, always depending on the availability of the receiving companies/institutions and on dates to be arranged with them. It is also foreseen to carry out a seedbed at the beginning of March and transplanting to the field trials of the ETSIA during the first-second week of May, depending on the state of the crops.	
Global activity	
Activities	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	32
Workshops or seminars [PRESENCIAL][Workshops and Seminars]	2.5
Writing of reports or projects [AUTÓNOMA][Self-study]	25
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	42.5
Final test [PRESENCIAL][Assessment tests]	2.5
Project or Topic Presentations [PRESENCIAL][Individual presentation of projects and reports]	3
Total horas: 112.5	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Chrzan, J., Ricotta, J.	Organic food, farming and culture	Bloomsbury Academic		1350027839, 97813500	2019	
Guzmán, G.I., González, M.	Energy in Agroecosystems: A Tool for Assessing Sustainability	CRC Press		9780367436049	2017	
Flint, M.L.	Natural enemies handbook: the illustrated guide to biological pest control	University of California			1999	
Helyer, N., Cattlin, N.D., Brown, K.C.	A color handbook of biological control in plant protection	CRC Press, Taylor & Francis Group		9780429068218	2014	
Lemmens, R.	Vegetables pests organic control	Books on Demand		2322222666, 97823222	2020	
Lichtfouse, E.	Sociology, organic farming, climate change and soil science	Springer		978-90-481-3332-1	2012	
	Agricultura Ecológica en Castilla-					

BALLESTEROS C., CORDERO R.	La Mancha	UPA			2006
COMITÉ ANDALUZ DE AGRICULTURA ECOLÓGICA (CAAE)	La práctica de la agricultura y ganadería ecológicas	CAAE	9505552599		2001
COORDINADORA DE ORGANIZACIONES DE AGRICULTORES Y GANADEROS (COAG)	Apuntes de iniciación a la agricultura ecológica	COAG			2000
CROVETTO C.	Agricultura de conservación	MUNDI-PRENSA	978-8493073800		1999
DE LA ROSA D.	Evaluación agroecológica de suelos para un desarrollo rural sostenible	Mundi-Prensa	978-84-00-08650-3		2008
DE LAS HERAS J., FABEIRO C., MECO R.	Fundamentos de agricultura ecológica	Universidad de Castilla-La Mancha	9788484272441		2003
Domínguez A., Roselló J., Aguado J.	Diseño y manejo de la diversidad vegetal en agricultura ecológica	SEAE	9788493205638		2002
FERNÁNDEZ-ALES R., LEIVA M.	Ecología para la agricultura	Mundi-Prensa	9788484760856		2003
FLORES J.	Agricultura ecológica	Mundi-Prensa	9788484763147		2009
Fukuoka M.	La senda natural del cultivo	Colección Terapion			1995
Gliessman S.R.	Agroecología	Gliessman	9977-57-385-9		2002
Guzmán G.I., García A.R., Alonso A.M., Perea J.M.	Producción ecológica: Influencia en el desarrollo rural	MARM	9788449108952		2008
LABRADOR J., ALTIERI M.A.	Agroecología y desarrollo	Mundi-Prensa	9788471149930		2001
LAMPKIN N.	Agricultura ecológica	Mundi-Prensa	9788471147455		2001
Labrador J. (Ed.)	Conocimientos, técnicas y productos para la agricultura y la ganadería	SEAE, MAPA	V-714-2006		2006
Labrador J., Porcuna J.L., Bello A. (coord.)	Manual de Agricultura y Ganadería ecológica	Mundi-Prensa, MAPA y Eumedia	Madrid 978-84-930738-6-2		2006
Meco R., Lacasta C., Moreno M.M.	Agricultura ecológica en secano	Mundi-Prensa	9788484765394		2011
	http://www.agricultura.org				
	http://www.agroecologia.net				
	http://www.fao.org				
	http://www.ifoam.org				
	http://www.marm.es/				