



UNIVERSIDAD DE CORDOBA

ESCUELA TÉCNICA SUPERIOR DE INGENIERÍA
AGRONÓMICA Y DE MONTES
**GRADO DE INGENIERÍA
AGROALIMENTARIA Y DEL MEDIO
RURAL**
2024/25 YEAR
FITOTECNIA



Course details

Course name: FITOTECNIA

Code: 100952

Degree/Master: GRADO DE INGENIERÍA AGROALIMENTARIA Y DEL MEDIO **Year:** 2
RURAL

Field: BASES TECNOLÓGICAS DE LA PRODUCCIÓN VEGETAL

Character: OBLIGATORIA

Duration: SECOND TERM

ECTS Credits: 4.5

Classroom hours: 45

Face-to-face classroom percentage: 40.0%

Study hours: 68

Online platform: <https://moodle.uco.es/>

Coordinating teacher

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Brief description of the contents

The objective of this course is to understand and apply the basics of crop productivity to the technologies for crop management with a quantitative approach and an emphasis on the sustainability of agricultural systems and environmental problems of agriculture.

Prerequisites

Prerequisites established in the study plan

None

Recommendations

Level B2 in English or equivalent would be recommended. Basic knowledge on Plant Physiology and Soil Science would be also helpful for following this class.

Study programme

1. Theory contents

1. Determinants of crop productivity.
2. Sowing and crop rotations.
3. Soil management and soil conservation.
4. Water management and control of salinity.
5. Fertilizer management and fertigation.
6. Environmental control: windbreaks, temperature modification and frost control.
7. Other operations (weed control, harvest). Cropping systems.
8. Farming and the sustainability of food systems

2. Practical contents

- 1- Assessment of crop productivity (potential and water limited)
- 2- Water balance components
- 3- Calculation of crop ET and crop water irrigation requirements
- 4- Fertilizer program
- 5- Irrigation schedule
- 6- Leaching requirement for control of salinity
- 7- Evaluation of frost risk
- 8- Energy requirement of crop operations

Bibliography

1. Basic Bibliography

Villalobos, F.J., y E. Fereres. 2017. Fitotecnia. Principios de Agronomía para una agricultura sostenible. Editorial

Mundi-Prensa. Madrid. 603 p

Villalobos F.J. and Fereres E. 2016. Principles of Agronomy for Sustainable Agriculture. Springer

2. Further reading

- Connor D.J., Loomis R.S. and Cassman K.G. 2011. Crop ecology: Productivity and management in agricultural systems. Cambridge University Press. 568 p.

- Snyder RL, de Melo-Abreu JP (2005) Frost protection: fundamentals, practice and economics, vol 1, FAO, Rome

- Snyder RL, de Melo-Abreu JP, Matulich S (2005) Frost protection: fundamentals, practice and economics, vol 2, FAO, Rome

Methodology

General clarifications on the methodology (optional)

Each student will work on a practical project consisting of a series of calculations related to the main agronomic techniques (irrigation schedule, fertilization program, soil conservation plan, etc.).

The evaluation will be based on the quality of the report submitted and the oral defense of its contents.

Methodological adaptations for part-time students and students with disabilities and special educational needs

All the classes will be available in video format for later access.

For students with special needs we will follow the specific recommendations provided by ETSIAM

Face-to-face activities

Activity	Large group	Small group	Total
<i>Information processing activities</i>	-	14	14
<i>Projects based on the course contents</i>	25	-	25
<i>Tutorial action activities</i>	-	6	6
Total hours:	25	20	45

Off-site activities

Activity	Total
<i>Exercise and problem solving activities</i>	28
<i>Information processing activities</i>	30
<i>Information search activities</i>	10
Total hours	68

Results of the training and learning process

Knowledge, competencies and skills

- CB1 Knowledge of basic, scientific, and technical materials that allow for ongoing learning as well as an ability to adapt to new situations or outside factors/changes
- CB2 Creative problem solving. Using initiative, methodology, and critical thinking.
- CEC2 To know, understand and use the principles of: the basis for plant productions, the production systems, protection and exploitation.
- CEC9 To know, understand and use the principles of: decision making using available resources when working in multidisciplinary groups.
- CEC10 To know, understand and use the principles of: Technological transfer, understanding, interpreting, communicating and adapting advances in the

agricultural field.

Assessment methods and instruments

Intended learning outcomes	Examination	Group or individual globalizing projects	Oral means
CB1	X	X	X
CB2	X	X	X
CEC10	X	X	X
CEC2	X	X	X
CEC9		X	
Total (100%)	40%	40%	20%
Minimum grade (*)	4	4	4

(*)Minimum mark (out of 10) needed for the assessment tool to be weighted in the course final mark. In any case, final mark must be 5,0 or higher to pass the course.

General clarifications on instruments for evaluation:

The evaluation will be based on the quality of the report submitted and the oral defense of its contents plus attendance and interaction during the course.

Clarifications on the methodology for part-time students and students with disabilities and special educational needs:

The evaluation will be based on the quality of the report submitted and the oral defense of its contents.

Clarifications on the evaluation of the extraordinary call and extra-ordinary call for completion studies:

A regular exam consisting of a theoretical test plus several practical exercises

Qualifying criteria for obtaining honors:

In addition to grade of greater or equal than 9, the student must carry out all the activities proposed during the course

Sustainable development goals

Zero hunger
Clean water and sanitation
Responsible consumption and production
Climate action
Life on land

Other Faculty

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The methodological strategies and the evaluation system contemplated in this Teaching Guide will respond to the principles of equality and non-discrimination and must be adapted according to the needs presented by students with disabilities and special educational needs in the cases that are required. Students must be informed of the risks and measures that affect them, especially those that may have serious or very serious consequences (article 6 of the Safety, Health and Welfare Policy; BOUCO 23-02-23).
