

28944 - Crop protection

Información del Plan Docente

Academic Year	2016/17
Academic center	201 - Escuela Politécnica Superior
Degree	437 - Degree in Rural and Agri-Food Engineering
ECTS	6.0
Course	4
Period	First semester
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The course is divided into three sections: first, knowledge about the most relevant pests caused by insects and mites, as well as the main methods to control their incidence on crops; second, problematics caused by weeds and the corresponding strategies to control them; and third, diseases originated by infection of fungi, nematodes, prokaryotes and viruses in cultivated plants, and the diverse strategies of integrated management that could be applied for a sustainable plant protection.

28944 - Crop protection

Theoretical lessons in classroom.

Practical sessions in lab and computer room.

Tutorial sessions.

Field visits.

5.2.Learning activities

I. Pest caused by insects and mites. Theoretical and practical lessons.

II. Weeds and their control methods .Theoretical and practical lessons.

III. Diseases caused by fungi, prokaryotes and viruses. Theoretical and practical lessons.

Field visits

5.3.Program

Theory programme

Topic 1. Introduction to Crop Protection

Topic 2. Insects

Topic 3. Main endopterygote pests in extensive crops

Topic 4. Main exopterygote pests in extensive crops

Topic 5. Mites.

Topic 6. Main mite pests in extensive crops.

Topic 7. Protecting extensive crops from mite pests.

Topic 8. Weeds and plant parasites.

Topic 9. Protecting extensive crops from weeds.

28944 - Crop protection

Topic 10. Concepts of plant pathology.

Topic 11. Pathogenic plant fungi.

Topic 12. Mycosis in extensive crops.

Topic 13. Diseases caused by bacteria.

Topic 14. Phytoplasmas and spiroplasmas. Nematodes

Topic 15. Pathogenic plant viruses and viroids.

Topic 16. Virus infections in extensive crops.

Topic 17. Protecting extensive crops against diseases.

Practical Programme

Practical 1. Identifying pest insects (I)

Practical 2. Identifying pest insects (II).

Practical 3. Identifying pest insects (II).

Practical 4. Pest control handbook (problems).

Practical 5. Identifying weeds.

Practical 6. Verifying the causal agent: Koch's postulates, pure cultures.

Practical 7. Ectophytic and endophytic fungi. Trypan blue stain.

Practical 8. Diagnosing fungal infections.

Practical 9. Fungicides. Active substances record.

Practical 10. Diagnosing bacterial and viral infections in plants.

5.4.Planning and scheduling

28944 - Crop protection

Week			Personal work
	Theoretical sessions	Practical sessions	
1	Theme 1	-	-
2	Theme 2	-	Study (2 h)
3	Theme 3	Practice 1	Study (4 h)
4	Theme 4	Practice 2	Study (4 h)
5	Theme 5	Practice 3	Study (4 h)
6	Theme 6	Practice 4	Study (4 h)
7	Theme 7	Field visit (4h)	Study (2 h)
8	Theme 8	Practice 5	Study (4 h)
9	Theme 9	Practice 6	Study (4 h)
10	-	-	Study (8 h)
11	-	-	Study (8 h)
12	Theme 10 Theme 11	-	Study (4 h)
13	Theme 12	Practice 7	Study (4 h)
14	Theme 13	Practice 8	Study (4 h)
15	Theme 14	Practice 9	Study (4 h)
16	Theme 15 Theme 16		Study (4 h)

28944 - Crop protection

17	Theme 17	Practice 10	Study (4 h)
18	-	Oral presentation	Study (6 h)
19	-		Study (8 h)
20	Evaluation (3h)	-	Study (5 h)
Total	37	28	85

5.5.Bibliography and recommended resources

BASIC REFERENCES

- García Marí, Fernando. Las plagas agrícolas / Fernando García Marí, Josep Costa Comelles, Francisco Ferragut Pérez . Valencia : Agropubli, D.L.1994
- Enfermedades de las plantas causadas por hongos y oomicetos : naturaleza y control integrado / editores científicos, Rafael Manuel Jiménez Díaz, Emilio Montesinos Seguí . Valencia : Phytoma España, D.L. 2010
- Enfermedades causadas por nematodos fitoparásitos en España / editoras científicas, María Fe Andrés Yeves, Soledad Verdejo Lucas . Valencia : Phytoma-España ; [Madrid] : Sociedad Española de Fitopatología, D.L. 2011
- Villarias Moradillo, José Luis. Atlas de malas hierbas / José Luis Villarias Moradillo . 3a. ed. rev. y ampl. Madrid : Mundi-Prensa, 2000

COMPLEMENTARY REFERENCES

- Patología vegetal / editores G. Llácer... [et al.] . 2ª ed. Valencia : Phytoma España : Mundi-Prensa, 2000
- Herramientas biotecnológicas en fitopatología / editores científicos, Vicente Pallás...[et al.] . Madrid [etc.] : Mundi-Prensa, 2008
- Recasens i Guinjuan, Jordi. Malas hierbas en plántula : guía de identificación / Jordi Recasens, Josep Antoni Conesa . Lleida : Universitat de Lleida [etc.], 2009