

28944 - Crop protection

Syllabus Information

Academic Year: 2019/20

Subject: 28944 - Crop protection

Faculty / School: 201 - Escuela Politécnica Superior

Degree: 437 - Degree in Rural and Agri-Food Engineering
583 - Degree in Rural and Agri-Food Engineering

ECTS: 6.0

Year: 4

Semester: First semester

Subject Type: Optional

Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

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.

- Lectures in the classroom.
- Practical sessions in the lab and computer room.
- Tutorial sessions.
- Field visits.

4.2.Learning tasks

The course will address the following learning tasks:

- 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

4.3.Syllabus

The course will address the following topics:

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. Integrated management of weeds
- Topic 10. Chemical control of weeds.
- Topic 11. Concepts of plant pathology.
- Topic 12. Pathogenic plant fungi.
- Topic 13. Mycosis in extensive crops.
- Topic 14. Diseases caused by bacteria.
- Topic 15. Diseases caused by Nematodes
- Topic 16. Pathogenic plant viruses and viroids.
- 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 (I)
- Practical 6. Identifying weeds (II)
- Practical 7. Verifying the causal agent: Koch's postulates, pure cultures.
- Practical 8. Ectophytic and endophytic fungi. Trypan blue stain.
- Practical 9. Diagnosing fungal infections.
- Practical 10. Fungicides. Active substances record.
- Practical 11. Diagnosing bacterial and viral infections in plants.

4.4.Course planning and calendar

Week			Autonomous work	Total hours
	Lectures	Practice sessions		
1	Topic 1	-	-	2
2	Topic 2	-	Study (2 h)	4
3	Topic 3	Practice 1	Study (4 h)	8
4	Topic 4	Practice 2	Study (4 h)	8
5	Topic 5	Practice 3	Study (4 h)	8
6	Topic 6	Practice 4	Study (4 h)	8
7	Topic 7		Study (6h)	8
8	Topic 8	Practice 5	Study (4 h)	8
9	Topic 9	Practice 6	Study (4 h)	8

10	Topic 10	Field visit (4h)	Study (2h)	8
11			Study (8 h)	8
12		-	Study (8 h)	8
13	Topic 11 Topic 12		Study (4 h)	8
14	Topic 13	Practice 7	Study (4 h)	8
15	Topic 14	Practice 8	Study (4 h)	8
16	Topic 15		Study (4 h)	8
17	Topic 16	Practice 10	Study (4 h)	8
18	Topic 17	Practice 11	Study (4 h)	8
19	-	Oral presentation (1h)	Study (7 h)	8
20	Evaluation (2h)	-	Study (6 h)	8
Total	36	27	87	150

4.5. Bibliography and recommended resources

- BB** 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
- BB** 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
- BB** García Marí, Fernando. Las plagas agrícolas / Fernando García Marí, Josep Costa Comelles, Francisco Ferragut Pérez . Valencia : Agropubli, D.L.1994
- BB** Villarias Moradillo, José Luis. Atlas de malas hierbas / José Luis Villarias Moradillo . 3a. ed. rev. y ampl. Madrid : Mundi-Prensa, 2000
- BC** Ayllón, M.A., et al. (2017). Enfermedades de plantas causadas por virus y viroides. Sociedad Española de Fitopatología
- BC** Herramientas biotecnológicas en fitopatología / editores científicos, Vicente Pallás...[et al.] . Madrid [etc.] : Mundi-Prensa, 2008
- BC** Patología vegetal / editores G. Llácer... [et al.] . 2ª ed. Valencia : Phytoma España : Mundi-Prensa, 2000
- BC** Recasens i Guinjuan, Jordi. Malas hierbas en plántula : guía de identificación / Jordi Recasens, Josep Antoni Conesa . Lleida : Universitat de Lleida [etc.], 2009

The updated recommended bibliography can be consulted in:

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=28944&Identificador=14210>