

Academic Year/course: 2021/22

## 28944 - Crop protection

### Syllabus Information

**Academic Year:** 2021/22

**Subject:** 28944 - Crop protection

**Faculty / School:** 201 - Escuela Politécnica Superior

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

**ECTS:** 6.0

**Year:** 4

**Semester:** First semester

**Subject Type:** Optional

**Module:**

### 1. General information

### 2. Learning goals

### 3. Assessment (1st and 2nd call)

### 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. Crop protection 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.
- Practical 9. Diagnosing bacterial and viral infections in plants.
- Practical 10. Case-study of disease control.

#### 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
<b>Total</b>	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://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=28944>