

## 28946 - Fruit production II

### 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

Learning course is based on classroom sessions, practical activities, research study and written examination.

#### 5.2. Learning activities

The course consists of 30 hours of lectures that will be held regularly during the 15 week, 6 hours dedicated to problem solving and case , 14 hours to practical work in laboratory, greenhouse or field of practices , 6 hours visiting fruit farms or fair fruit growing. The course work is divided into a tutored session ( 2 h ) and exposure ( 2 h ) .

**5.3.Program****Theory Programme**

1. Interactive master's classes (Activity type 1): 30 study hours

Module I. Fruit production

I.1. Fruit distribution and production. Ecological production. Integrated production.

Module II. The fruit species

II.1 Apple tree

II.2 Pear tree

II.3 Peach tree

II.4 Plum tree

II.5 Cherry tree

II.6 Almond tree

II.7 Apricot tree

Module III. Viticulture

III.1 Vines

Module IV. Olive growing

IV.1 Olives

**Practical programme**

2. Problem solving and case studies (Activity type 2) 12 hours/student

i.1 Climate study

i.2 Strategic alternatives

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i.3 Sizing a farm

i.4 Selecting cultivation zones using GIS

3. Laboratory practicals (Activity type 3) 8 hours/student

a.1 Description and identification of fruit trees

a.2 Pruning pip fruit plants

a.3 Pruning stone fruit trees

a.4 Sexual propagation

4. Special practicals (Activity type 4) 6 hours/student

Given the importance of direct contact with fruit growing for this course, 1 external visit is planned to farms with different production objectives.

5. Tutorial seminar, supervision and presentation of written work and practicals. (Activity type 6) 4 hours/student.

6. Teaching work (Activity type 6) 16 hours/student

Preparation and presentation of a practical seminar type work. The topics for this activity will be proposed at the start of the course.

7. Study (Activity type 7): 74 hours/student.

Overall evaluation test in accordance with the Regulation on Learning Assessment Standards of the University of Zaragoza.

### 5.4.Planning and scheduling

#### Schedule sessions and presentation of works

The approximate timing is shown in the table below , taking into account the outputs to farms they will be conditioned with the availability of farms to visit.

Section/week	3	4	5	6	7	8	9	10	11	12	13	14	15	Total	
Teoría	I.1	II.1	II.1	II.2	II.3	II.3	II.4	II.5	II.6	II.7	III.1	III.1	IV.1	IV.1	

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horas	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	30
Resolución problemas			i.1	i.2	i.3						i.4	i.4				
horas			2	2	2						2	2				10
Prácticas de laboratorio, parcela, invernadero	a.4	a.5								a.3	a.2					
horas	2	2								2	2					10
Salida a explotaciones frutícolas								1								
horas								6								6
Horas exposicion															2	2
Tutoría grupo									2							2
Trabajo grupo					2	2	2	2	2	2	2	2	2			16
Trabajo autónomo	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	74
																150

**5.5. Bibliography and recommended resources**
**Basic bibliography**

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Baldini, Enrico. Arboricultura general / Enrico Baldini ; versión española de José de la Iglesia González . Madrid : Mundi-Prensa, 1992

Barranco, Diego, Fernández-Escobar, Ricardo, Rallo, Luis/ El cultivo del olivo. Editores científicos Barranco, Diego, Fernández-Escobar, Ricardo, Rallo, Luis. [Sevilla] : Junta de Andalucía, Consejería de Agricultura y Pesca ; Madrid [etc.] : Mundi-Prensa, 2004

Gil Salaya, Gonzalo F.. Fruticultura. Vol I y II./ Gonzalo F. Gil Salaya . 2ª ed. Santiago : Alfaomega : Ediciones Universidad Católica de Chile, cop.1999

Hidalgo Fernández-Cano, Luis. Tratado de viticultura general / Luis Hidalgo. Madrid [etc.] : Mundi-Prensa, 2002

### Complementary bibliography

Bretonneau, Jean. Poda e injerto de frutales / Jean Bretonneau ; versión española de Vicente Sotes Ruiz y Manuel Vázquez-Prada Grande, Elisa Boix Aristu . 1ª ed., 4ª reimp. Madrid : Mundi-Prensa, 1991

Calderón Alcaraz, Esteban. Fruticultura general : el esfuerzo del hombre / Esteban Calderón Alcaraz . 3a ed., 3a reimp. México : Limusa, 1989

Cambra Ruiz de Velasco, Mariano. Diseños de plantación y formación de árboles frutales / M. Cambra, R. Cambra Ruiz de Velasco . [9a. ed.] Madrid : Consejo Superior de Investigaciones Científicas , 2004

Coutanceau, M.. Fruticultura : Técnica y economía de los cultivos de Rosáceas leñosas productoras de fruta / M. Coutanceau . 3ªed./ Traducción, adaptación y prólogo de la 1ªedición española [por] Juan Simarro , ampliación y puesta al día de la 2ª y 3ª edición española [por] Antonio J. Felipe Mansergas Barcelona : Oikos-Tau, 1977 (reimp.1997)

Frutticoltura ad alta densità : impianti, forme d'allevamento e tecniche di potatura / a cura di S. Sansavini, A. Errani . 1ª ed. Bologna : Edagricole, 1998

Gautier, Michel. La culture fruitière. Vol. 1, L'arbre fruitier / Michel Gautier . 2e. éd. rev. et augm. París : Tec & Doc-Lavoisier, 1993

Gautier, Michel. La culture fruitière. Vol. 2, Les productions fruitières / Michel Gautier . [1ere. éd.] París : Tec & Doc-Lavoisier : J.B. Baillièrre, cop. 198

Gil-Albert Velarde, Fernando. Tratado de arboricultura frutal. Vol.I a V, Fernando Gil-Albert Velarde. 3ª ed. rev. Madrid : Ministerio de Agricultura, Pesca y Alimentación : Mundi-Prensa, 1991

La qualite gustative des fruits: méthodes pratiques d'analyse / auteurs, Françoise Alavoine...[et al.] . Aix en Provence : CEMAGREF, 1988

Lalatta, Filippo. Fertilización de árboles frutales / Filippo Lalatta . Barcelona : CEAC, 1988

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Martínez de Toda Fernández, Fernando. Claves de la viticultura de calidad : nuevas técnicas de estimación y control de la calidad de la uva en el viñedo / Fernando Martínez de Toda Fernández . Madrid [etc.] : Mundi-Prensa, 2008