

## Course guide

### 390319 - MVV - Multiplication and Nurseries

Last modified: 15/01/2024

**Unit in charge:** Barcelona School of Agri-Food and Biosystems Engineering  
**Teaching unit:** 745 - DEAB - Department of Agri-Food Engineering and Biotechnology.

**Degree:** BACHELOR'S DEGREE IN AGRICULTURAL, ENVIRONMENTAL AND LANDSCAPE ENGINEERING (Syllabus 2009). (Compulsory subject).  
BACHELOR'S DEGREE IN AGRONOMIC SCIENCE ENGINEERING (Syllabus 2018). (Optional subject).  
BACHELOR'S DEGREE IN LANDSCAPE ARCHITECTURE (Syllabus 2019). (Optional subject).

**Academic year:** 2023 **ECTS Credits:** 6.0 **Languages:** Catalan, Spanish

#### LECTURER

**Coordinating lecturer:** Nuria Carazo Gómez

**Others:** Nuria Carazo Gómez, Pol López Torrubiano

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

**Specific:**

1. Knowledge of the fundamental concepts of animal and vegetal biology related to engineering.

#### TEACHING METHODOLOGY

The teaching methodology will vary, depending on whether it is theoretical classes (large group) or practical classes (small group) as well as the type of practical class (computer room, laboratory, field or visits to farms).

The theoretical explanation classes will be magisterial and cooperative. The teacher will introduce the objectives and present the concepts that the student will have to assume to achieve the learning objectives. He will seek the involvement of the student through the presentation of applied examples and questions that facilitate the discussion and the relationship of concepts. At the practical sessions, the student will work in small groups guided by the teacher but leading the proposed activity. According to the session, the basic capacity that is intended to be strengthened will vary from the management of information sources, knowledge of operational techniques and a proposal for action in the management of a crop to the preparation and presentation of the results for discussion with the different groups.

#### LEARNING OBJECTIVES OF THE SUBJECT

Upon passing the subject Multiplication and nursery, the student will be able to apply the knowledge acquired to, in a sustainable way, carry out the multiplication of fruit and vegetable plants and production in a nursery.

You will know the nursery regulations and their scope of application and will be prepared to select the necessary facilities in a specific nursery.

#### STUDY LOAD

Type	Hours	Percentage
Self study	90,0	60.00
Hours large group	40,0	26.67
Hours small group	20,0	13.33

**Total learning time:** 150 h

## CONTENTS

### (ENG) SEXUAL MULTIPLICATION

**Description:**

(ENG)P

Introduction

Seed production, processing and storage.

Production of seedlings: techniques and materials

**Related activities:**

Activity 1: theoretical explanation classes

Activity 4: Field/greenhouse practices

**Full-or-part-time:** 23h

Theory classes: 7h

Laboratory classes: 3h

Self study : 13h

### (ENG) EL VIVER

**Description:**

Nursery type. legal scope

Facilities. Equipment. Design

Vegetal material

Prevention and health control

**Related activities:**

Activity 1: theoretical explanation classes

Activity 3: classroom / computer room

**Full-or-part-time:** 26h

Theory classes: 8h

Laboratory classes: 2h

Self study : 16h

### (ENG) MULTIPLICACIÓ VEGETATIVA

**Description:**

Introduction

Mother plant production.

Multiplication by cutting. Factors that affect rooting.

Graft. Incompatibilities. Obtaining virus-free material.

Geophyte multiplication: type. Production for fattening.

Layering: Techniques.

Culture "in vitro": Principles. Techniques.

**Related activities:**

Activity 1: theoretical explanation classes

Activity 4: Field/greenhouse practices

**Full-or-part-time:** 30h

Theory classes: 5h

Laboratory classes: 5h

Self study : 20h

### Ornamental plant nursery

**Description:**

Plant material

Production management: Choice of growth medium and its container. formats Watering and nutrition.

Construction of the plant. Tutoring Preparation for sale.

**Related activities:**

Activity 1: theoretical explanation classes

Activity 4: Practice field/greenhouse

Activity 5: Visit to farms

**Full-or-part-time:** 50h

Theory classes: 12h

Laboratory classes: 8h

Self study : 30h

### Commercialization

**Description:**

Plant material produced: legal scope.

Hardening. Postharvest.

Formats. Commercialization.

**Related activities:**

Activity 3: Classroom/computer classroom. Integrative work.

**Full-or-part-time:** 17h

Theory classes: 4h

Laboratory classes: 2h

Self study : 11h

## ACTIVITIES

### (ENG) ACTIVITAT 1: CLASSES D'EXPLICACIÓ TEÒRICA

**Full-or-part-time:** 96h

Theory classes: 38h

Self study: 58h

### (ENG) ACTIVITAT 2: PROVES INDIVIDUALS D'AVUACIÓ

**Full-or-part-time:** 2h

Theory classes: 2h

### (ENG) ACTIVITAT 3: PRÀCTIQUES D'AULA /AULA INFORMÀTICA

**Full-or-part-time:** 6h

Laboratory classes: 2h

Self study: 4h



#### (ENG) ACTIVITAT 4: PRÀCTIQUES DE LABORATORI / CAMP

**Full-or-part-time:** 27h

Laboratory classes: 8h

Self study: 19h

#### (ENG) ACTIVITAT 5: SORTIDA DE PRÀCTIQUES

**Full-or-part-time:** 19h

Laboratory classes: 10h

Self study: 9h

### GRADING SYSTEM

The global evaluation of the subject will be made taking into account the following partial evaluations:

N1: weighted result of the two individual evaluation tests described in Activity 2.

N2: result of activities 3 to 5, evaluated from the participation and the deliverables requested for each activity.

$N_{final} = 0,75N1 + 0,25N2$

### EXAMINATION RULES.

- Attendance and completion of the proposed activities is mandatory
- Not carrying out any of the proposed activities implies that the grade for this will be zero.
- Assignments must be handed in within the established deadline.

### BIBLIOGRAPHY

#### Basic:

- Armitage, A.M. Ornamental bedding plants. Wallingford: CAB International, 1994. ISBN 0851989012.
- Castilla Prados, N. Invernaderos de plástico: tecnología y manejo. Madrid: Mundi-Prensa, 2005. ISBN 8484762211.
- Hartmann, H; Kester, D.; Davies, F.; Geneve, R. Hartmann and Kester's plant propagation: principles and practices. Upper Saddle River: Prentice-Hall, 2002. ISBN 0136792359.
- Tesi, R. Medios de protección para la hortoflorofruticultura y viverismo. Madrid: Mundi-Prensa, 2001. ISBN 8471149354.

#### Complementary:

- Ball, V. Ball redbook. Illinois: Ball Publishing, 2003. ISBN 1883052343.
- Blanchette, R. Growertalks on crop culture 2. Illinois: Ball Publishing, 1999. ISBN 1883052211.
- Jiménez Mejías, R. El cultivo industrial de plantas en maceta. Reus: De horticultura, 1990. ISBN 8487729002.
- Nell, T.A. Flowering potted plants: prolonging shelf performance: postproduction care & handling. Illinois: Ball Publishing, 1993. ISBN 0962679682.
- Sonneveld, C; Voogt, Wim. Plant nutrition of greenhouse crops. Dordrecht: Springer, cop. 2009. ISBN 9789048125319.
- Raviv, Michael; Lieth, J. Heinrich. Soilless culture : theory and practice. Amsterdam ; London: Elsevier Science, 2008. ISBN 9780444529756.