Degree competences to which the subject contributes

Specific:

Transversal:
CT3. (ENG) Comunicación eficaz oral y escrita. Comunicarse de forma oral y escrita con otras personas sobre los resultados del aprendizaje, de la elaboración del pensamiento y de la toma de decisiones; participar en debates sobre temas de la propia especialidad.

Teaching methodology

In theoretical classes concepts that students have to learn are presented together with applied examples and questions. In the practical sessions, the student works individually or in teams of 2-3 people and carries out the proposed activity to improve the ability to observe, solve problems, locate crop information and data, to present results, programs and agronomic reports, and to discuss the vision of different groups.

Learning objectives of the subject

Once they have passed the course, students will have broad knowledge of cereals, forages and protein, energy and other industrial crops and how to produce them in the most economically, socially and environmentally advantageous ways. In particular, they must be able to recognise the main field and biomass crops, identify optimal cultivation conditions and design rotations of crops and technical itineraries that are appropriate for sustainable grain and biomass crop production.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 40h</th>
<th>26.67%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Hours small group:</td>
<td>20h</td>
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<tr>
<td></td>
<td>Guided activities:</td>
<td>0h</td>
</tr>
<tr>
<td></td>
<td>Self study:</td>
<td>90h</td>
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</tbody>
</table>
390310 - CGB - Grain and Biomass Crops
# 390310 - CGB - Grain and Biomass Crops

## Content

### Introduction to field and biomass crops

<table>
<thead>
<tr>
<th>Learning time: 13h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory classes: 5h</td>
</tr>
<tr>
<td>Self study: 8h</td>
</tr>
</tbody>
</table>

**Description:**
In this content, grain and biomass crops and their cultivation systems are presented. The following aspects are worked:
- Groups of field crops, monoculture and fallow
- Morphology, cycle and physiology of grasses
- Cultivation technology for sustainable production: soil work, rotation, cover crops, protection and other complementary technology

**Related activities:**
- Activity 1: Theory lessons
- Activity 2: Individual assessment test
- Activity 5: Classroom or computer practices

### CEREALS

<table>
<thead>
<tr>
<th>Learning time: 61h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory classes: 15h</td>
</tr>
<tr>
<td>Laboratory classes: 9h</td>
</tr>
<tr>
<td>Self study: 37h</td>
</tr>
</tbody>
</table>

**Description:**
This content is dedicated to:
- Production, products and quality of cereals
- Cereal production technology
- The winter cereals: wheat, barley and other winter cereals
- Summer cereals: corn, sorghum, rice and other summer cereals

**Related activities:**
- Activity 1: Theory lessons
- Activity 2: Individual assessment test
- Activity 3: Laboratory practices
- Activity 4: Field practices
- Activity 5: Classroom or computer practices
- Activity 6: Visits to farms and transformation and research centers
**Protein, oil, energy and other crops**

- **Learning time:** 45h
  - Theory classes: 12h
  - Laboratory classes: 6h
  - Self study: 27h

**Description:**
The following aspects are worked:
- Grain legumes: peas and others
- Oilseeds: colza and sunflower
- Agroenergetic, fibrous and other crops

**Related activities:**
- Activity 1: Theory lessons
- Activity 2: Individual assessment test
- Activity 3: Laboratory practices
- Activity 4: Field practices
- Activity 6: Visits to farms and transformation and research centers

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**Forages**

- **Learning time:** 31h
  - Theory classes: 8h
  - Laboratory classes: 5h
  - Self study: 18h

**Description:**
This content is dedicated to forages and grasses. The following aspects are worked
- Forage production and quality
- Annual and multiannual forages
- Forage conservation: haymaking, dehydration and silage
- Types and situation of the meadows, meadows and pastures in Spain and in Catalonia
- Establishment and maintenance of meadows
- Grazing techniques and adaptation to seasonal production (conservation of grass)
- Multifunctionality of pasture and evolution of trashumance

**Related activities:**
- Activity 1: Theory lessons
- Activity 2: Individual assessment test
- Activity 3: Laboratory practices
- Activity 5: Classroom or computer practices
- Activity 6: Visits to research centers and companies
### Planning of activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
<th>Theory classes</th>
<th>Self study</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ENG) ACTIVITAT 1: CLASSES D’EXPLICACIÓ TEÒRICA</td>
<td></td>
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<tr>
<td>(ENG) ACTIVITAT 2: PROVES INDIVIDUALS D’AVALUACIÓ</td>
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<tr>
<td>(ENG) ACTIVITAT 3: PRÀCTIQUES DE LABORATORI</td>
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<td>(ENG) ACTIVITAT 4: PRÀCTIQUES DE CAMP (ESAB)</td>
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<tr>
<td>(ENG) ACTIVITAT 5: PRÀCTIQUES D’AULA (INFORMÀTICA O AULA)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(ENG) ACTIVITAT 6: VISITES A EXPLOTACIONS I CENTRES DE TRANSFORMACIÓ I D’INVESTIGACIÓ</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

| Hours: 98h | Theory classes: 38h | Self study: 60h |
| Hours: 2h  | Theory classes: 2h  |                |
| Hours: 9h  | Laboratory classes: 4h | Self study: 5h |
| Hours: 9h  | Laboratory classes: 4h | Self study: 5h |
| Hours: 10h | Laboratory classes: 4h | Self study: 6h |
| Hours: 22h | Laboratory classes: 8h | Self study: 14h |

### Qualification system

The overall assessment of the subject will be done taking into account the following partial assessments:

- N1: result of the two individual assessment tests described in Activity 2
- N2: result of activities 3 to 6, evaluated from the available deliverables for each activity, in which V1 and A1 weight three times the other deliverables.

Final grade = 0.60 * N1 + 0.40 * N2

### Regulations for carrying out activities

- Not carrying out any of the proposed activities implies a mark of zero
- Tasks must be submitted within the established period.
- Attendance to practical sessions and visits is mandatory
Bibliography

Basic:


Complementary:


Pujol i Palol, Miquel; Gorchs Altarriba, Gil. Escalas fenológicas para el seguimiento del ciclo de los cereales de invierno. [Barcelona ?: s.n.], 1989. ISBN 844045807X.


Others resources:

Hyperlink

Asociación Española Agricultura de Conservación

Plataforma tecnológica d’agricultura sostenible

Cultius extensius

No Laboreo

Aapresid Argentina

Sustainable Agriculture and Soil Conservation (The SoCo project)
RuralCat

Centro internacional del mejoramiento del maíz y trigo (CIMMYT)

International Rice Research Institute (IRRI)