390211 - BQ - Biochemistry

Coordinating unit: 390 - ESAB - Barcelona School of Agricultural Engineering
Teaching unit: 745 - DEAB - Department of Agri-Food Engineering and Biotechnology
Academic year: 2019
Degree: BACHELOR’S DEGREE IN BIOSYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
ECTS credits: 6
Teaching languages: Catalan

Teaching staff
Coordinator: JOSE SABATE REBOLL

Degree competences to which the subject contributes

Specific:

Transversal:
2. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.

Teaching methodology

Learning objectives of the subject

At the end of Biochemistry course, students should be able to solve exercises about:
-the relationship between the structure and function of biomolecules
-enzyme kinetics
-the main metabolic pathways

Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 40h</th>
<th>26.67%</th>
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<tbody>
<tr>
<td>Hours medium group: 0h</td>
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<td>0.00%</td>
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<tr>
<td>Hours small group: 20h</td>
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<td>13.33%</td>
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<td>Guided activities: 0h</td>
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<td>0.00%</td>
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<tr>
<td>Self study: 90h</td>
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<td>60.00%</td>
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# Content

## BIOMOLECULES

**Description:**
- Chemical Principles of Biochemistry
- Proteins
- Carbohydrates
- Lipids and membranes
- Nucleic acids

**Learning time:** 55h
- Theory classes: 12h
- Laboratory classes: 10h
- Self study: 33h

## ENZYMES

**Description:**
- Enzymatic Kinetics
- Catalytic Strategies

**Learning time:** 35h
- Theory classes: 8h
- Laboratory classes: 6h
- Self study: 21h

## METABOLISM

**Description:**
- Metabolism Energy
- Catabolic pathway
- Anabolic pathway
- Regulation of Metabolism

**Learning time:** 60h
- Theory classes: 20h
- Laboratory classes: 4h
- Self study: 36h
Planning of activities

<table>
<thead>
<tr>
<th>ACTIVITY 1: CLASSROOM LESSONS</th>
<th>Hours: 98h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 38h</td>
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<td>Self study: 60h</td>
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<thead>
<tr>
<th>ACTIVITY 2: INDIVIDUAL ASSESSMENT TESTS</th>
<th>Hours: 2h</th>
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<tr>
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<td>Theory classes: 2h</td>
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<tr>
<th>ACTIVITY 3: LABORATORY EXPERIMENTS</th>
<th>Hours: 35h</th>
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<tr>
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<td>Laboratory classes: 14h</td>
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<td>Self study: 21h</td>
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<tr>
<th>ACTIVITY 4: EXERCICES WITH COMPUTER</th>
<th>Hours: 15h</th>
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<td>Laboratory classes: 6h</td>
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<td>Self study: 9h</td>
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Qualification system

Bibliography

Basic:


Others resources:

Computer material

BioRom

ChemSktech