Course guide

390211 - BQ - Biochemistry

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 BIOSYSTEMS ENGINEERING (Syllabus 2009). (Compulsory subject).
Academic year: 2022
ECTS Credits: 6.0
Languages: Catalan

LECTURER

Coordinating lecturer: JOSE SABATE REBOLL

Others:

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

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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>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>20,0</td>
<td>13.33</td>
</tr>
<tr>
<td>Hours large group</td>
<td>40,0</td>
<td>26.67</td>
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</tbody>
</table>

Total learning time: 150 h
# CONTENTS

## BIOMOLECULES

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

**Full-or-part-time:** 55h  
Theory classes: 12h  
Laboratory classes: 10h  
Self study: 33h

## ENZYMES

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

**Full-or-part-time:** 35h  
Theory classes: 8h  
Laboratory classes: 6h  
Self study: 21h

## METABOLISM

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

**Full-or-part-time:** 60h  
Theory classes: 20h  
Laboratory classes: 4h  
Self study: 36h

## ACTIVITIES

### ACTIVITY 1: CLASSROOM LESSONS

**Full-or-part-time:** 98h  
Theory classes: 38h  
Self study: 60h

### ACTIVITY 2: INDIVIDUAL ASSESSMENT TESTS

**Full-or-part-time:** 2h  
Theory classes: 2h
ACTIVITY 3: LABORATORY EXPERIMENTS

Full-or-part-time: 35h
Laboratory classes: 14h
Self study: 21h

ACTIVITY 4: EXERCICES WITH COMPUTER

Full-or-part-time: 15h
Laboratory classes: 6h
Self study: 9h

GRADING SYSTEM

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BIBLIOGRAPHY

Basic:

RESOURCES

Computer material:
- BioRom
- ChemSktech