# SYLLABUS

## 1. COURSE DESCRIPTION

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|---|---|
| **Degree:** | **Environmental Sciences** |
| **Course:** | **Biology** |
| **Module:** | **Biology** |
| **Department:** | **Molecular Biology and Chemical Engineering** |
| **Academic Year:** | **2017-18** |
| **Term:** | **Second** |
| **ECTS credits:** | **7.5** |
| **Year:** | **1st year** |
| **Type:** | **Basic** |
| **Language:** | **Spanish** |

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| **Course Model:** | **B1** |
| **a. Basic learning (EB):** | **60 %** |
| **b. Practical learning (EPD):** | **40 %** |
| **c. Organised activities:** | |

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## 2. LECTURERS

| **Coordinator** | |
|---|---|
| **Name:** | |
| **School:** | **School Experimental Sciences** |
| **Department:** | **Molecular Biology and Chemical Engineering** |
| **Area:** | **Genetics** |

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## 3. TOPICS

**BASIC LEARNING (EB):**

UNIT 1. Plant architecture: Levels of organization.

UNIT 2. Plant reproduction.

UNIT 3. Animal Architecture.

UNIT 4. Animal reproduction.

UNIT 5. The cell. I: Historical reviews and introduction.

UNIT 6. The cell. II: The eukaryotic cell.

UNIT 7. Fundamental concepts of animal physiology. I: Concept of Physiology.

UNIT 8. Fundamental concepts of animal physiology. II: Properties of excitable cells.

UNIT 9. Photosynthesis. I. Light reactions of photosynthesis: concept of photosynthesis.

UNIT 10. Photosynthesis. II. Photosynthetic assimilation of CO2: assimilation of CO2 in the C3 plants.

UNIT 11. Introduction to Genetics.

UNIT 12. The grammar and semantics of genes: other cellular nucleic acids.

UNIT 13. Basic molecular tools for conservation genetics: artificial synthesis ("in vitro"): polymerase chain reaction (PCR)

UNIT 14. Genetic variations (heritable polymorphism): phenotypic polymorphisms.

UNIT 15. Allele inheritance: inheritance of a gene and two independent genes.

UNIT 16. Quantitative genetics: phenotypic effect of the environment.

UNIT 17. Analysis of genetic variability in populations: alleles of a gene in a species.

UNIT 18. Factors that modify the allelic frequencies.

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## PRACTICAL LEARNING (EPD)

Laboratory practice 1: Zoological nomenclature.

Laboratory practice 2: Optical microscopy: fundamentals and use of the optical microscope.

Laboratory practice 3: Photosynthesis and respiration.

Laboratory practice 4: Genetic polymorphisms.