



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### **Didattica e metodologie didattiche e laboratoriali della Biologia: dalla cellula agli organismi - Modulo B**

2526-A50-FIA50016

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#### **Title**

TRAINING COURSE FOR TEACHERS OF THE A50 COMPETITIVE CLASS

Course of DIDACTICS, AND LABORATORY METHODOLOGIES AND DIDACTICS IN BIOLOGY: FROM CELLS TO ORGANISMS - Module B

#### **Teacher(s)**

Professor Chiara Urani

#### **Language**

Italian

#### **Short description**

##### **PURPOSE AND STRUCTURE**

The course aims to: i) cover some of the fundamentals of Biology and address conceptual issues from a methodological perspective that can be applied to other topics and contexts within the discipline; ii) provide

teaching tools, scientific language, and examples of teaching and laboratory methodologies for teaching Biology; iii) stimulate connections within the discipline itself and with other disciplines.

The course is structured around the presentation of examples of teaching approaches within the following topics:

- Plants, animals, exchanges of matter and energy
- Respiration is more than gas exchange
- Form, function, and environment.

Various teaching methodologies will be used to introduce the course or to describe the topics, or to facilitate discussions or in-depth analysis.

### **Prerequisites**

Basic knowledge of Biology will be considered acquired, and references will be provided for possible integration or review of the content.

### **Teaching Materials**

Teaching materials will be indicated and provided (lecture slides, article references, essay or novel suggestions, and any additional resources and materials for further study).

### **Recommended Readings**

- Biologia di Sadava, Hillis, Heller, Hacker – Zanichelli (2019): volume 1 La cellula; volume 2 L'ereditarietà e il genoma; volume 3 L'evoluzione e la biodiversità; volume 4 - L'evoluzione e la biodiversità; volume 5 La biologia degli animali; volume 6 L'ecologia.
- Elementi di Biologia e Genetica di Sadava, Hillis, Heller, Hacker – Zanichelli.
  - Principi di Biologia di Sadava et al., - Zanichelli (2021)
  - Biologia – Come funziona la vita – di Morris et al., - Zanichelli (2021)
  - Biologia di Solomon et al., - EdiSES edizione 7
  - La didattica delle materie STEM – Insegnare discipline scientifiche nella scuola secondaria di E. Barbuto – EdiSES (2022)
  - Metodi e strumenti per l'insegnamento e l'apprendimento della biologia di Padoa Schioppa – EdiSES (2015).

### **CFU / Hours**

1 CFU = 6 hours

### **Teaching period**

May

### **Sustainable Development Goals**

QUALITY EDUCATION

