UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Microbiology Laboratory

2021-3-E1301Q077-E1301Q085M

Aims

The Microbiology module provides competences and skills in the basis of microbiological techniques applied to selection and identification of bacteria 1. Knowledge and understanding. Knowledge of the basis of Microbiology 2. Applying knowledge and understanding. At the end of the course the student will be able to apply the knowledge acquired in the selection and identification of bacteria. 3. Making judgment. The student will be able to elaborate the knowledge in microbiological procedures and problems. 4. Communication skills. At the end of the course the student will be able to write experimental reports with microbiological vocabulary5. Learning skills. The student will be able to apply the acquired knowledge in experiments concerning microbiology.

Contents

Notions will be presented concerning the isolation and the identification of bacteria, microbial growth, characterization of microbial activities

Detailed program

The following procedures will be presented: 1) Isolation and identification of bacteria from different samples; Gram test to discriminate Gram-positive bacteria from Gram-negative bacteria; 2) Biochemistry Tests to characterized the isolated bacteria in terms of relation with oxygen, pH of the medium, and presence of oxidative systems for aerobic condition; 3) Microbial growth and determination of number of bacteria on plates; 4) Antimicrobial activity in presence of the main antibiotics and some products with synthesized by the students during the organic chemistry

Prerequisites

General notions of Organic chemistry, biochemistry and Molecula Biology

Teaching form

Lab experimental activities in equipped labs.

Textbook and teaching resource

Slides and experimental protocols will be provided to students at the beginning of the teaching activity, and uploaded on the moodle teaching Platform.

Semester

First semester

Assessment method

Written test focussed on all teaching modules: the exam will be aimed at the evaluation of acquired competences in all disciplines involved. The ability to elaborate and integrate the experimental work with the theoretical basis of the experiments, and the development of interdisciplinary links will be evaluated.

The assessment will be organised in six sections, with open questions and multiple choice tests. In order to pass the exam it is necessary that the student has an evaluation greater than or equal to 18 in all the disciplines. In the event that the student does not achieve sufficiency even in one discipline, the test must be re-supported in full. The duration of the assessment will be 2 hours.

Office hours

The teachers will receive by appointment requested by e-mail.