

Name of course: Microbiology

Course number: 223.200301

Points: 6

Lecturers: Dr. Laura Steindler and Dr. Tal Luzzatto Knaan, Department of Marine Biology

Email contacts, Lecturers:

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Email contacts TAs: will be announced

Aim of the course:

The course will provide students with a solid grounding in all aspects of basic microbiology. We will discuss microbes at a cellular level, learning about physiological (e.g., metabolism), molecular (e.g., gene regulation), biotechnological (e.g., antibiotics) and ecological (e.g., microbial interactions in nature) aspects.

Frontal classes will be complemented by laboratory practical sessions that will enable a more in depth understanding of complex topics.

Due to limitations of maximum participants at laboratories practices, the students will be divided in two groups, and the labs will be repeated twice, one for each group. During the time a group is not doing the lab, it will receive either frontal demonstrations or online practice material.

Requisites for the course:

Prerequisite courses include basic cell biology and biochemistry classes.

Participation in all laboratories is mandatory.

Reading material:

Much (but not all) of the material is found in "Brock Biology of Microorganisms". References to additional reading material will be provided during the course (will be made available on moodle).

Pre-laboratory tests:

In order to maximize the usefulness of the laboratories all students are expected to come prepared. Each laboratory will start with a short test, based on reading material and laboratory protocols that are provided ahead of time. The grade for these tests will comprise 20% of the laboratory grade.

Laboratory reports:

Students will submit one/two lab reports. These reports will be in the form of a scientific paper (e.g., short introduction, brief materials and methods, results, discussion and references). Each lab report is limited to 7 pages, not including bibliography (1.5 line spacing, font 11, 2 cm margins). Lab reports can be submitted in English or in Hebrew, and in groups of up to 4 students.

A basic online laboratory on “Bioinformatics in microbiology” will be given by Dr. Maya Ofek Lalar (head of the bioinformatics unit at University of Haifa) and involve also the TAs. Students will be instructed on how to run a bioinformatics exercise using 16S ribosomal sequences. Thereafter, students will be required to do a bioinformatics exercise independently at home and to submit it to the TAs.

Final exam:

The final exam will be a multiple choice exam at the university. In the case corona-rules require to have a home exam, then it will be split in two parts, an exam that is given in writing online, and an oral exam on zoom.

Questions in the exam will be based on the program taught during classes and laboratories, and on reading-material given by the lecturers during the year.

Final composition of grade:

Final exam: 50%

Laboratories: 50% (this grade includes laboratory tests, laboratory reports, and evaluation of the student by TAs).