



## COURSE DATASHEET

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| <b>Semester:</b>               | 2014/15/1                                    |
| <b>Course:</b>                 | Fundamental microbiology laboratory practice |
| <b>Code:</b>                   | VEMKLIB132M                                  |
| <b>Responsible department:</b> | Department of Limnology                      |
| <b>Department code:</b>        | MKLI   |
| <b>Responsible instructor:</b> | Eszter Horváth                               |

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### Course objectives:

Students will learn the importance of the microorganisms in the environment, the basics of their biology, moreover, the possibilities of their applications in the field of applied microbial biotechnology.

### Course content:

Working in the microbiology lab, typical equipments, tools. Lab safety.  
Microbiological sampling – soil, water and plants.  
The basics of culturing techniques – inoculation, clean cultures.  
Dilution gradients, agar plate preparation.  
Microscopy, simple staining technics.  
Gram staining. Vital staining technics.  
Microscopic cell counting.  
Investigation of stained specimens – yogurt culture, milk, total cell count  
The antimicrobial effect of metal ions and plant extracts.  
Special microscopic technics (phase contrast microscopy, fluorescent microscopy).  
PCR applications.  
The production of biofuels.  
Bioremediation after the Exxon Valdez catastrophe (a case-study).  
Measurement methods of biodegradation.

### Requirements, evaluation and grading:

Obligatory attendance. Requirements: Presentation of lab notes + sufficient result of 1 written examinations (<60% = insufficient, 60-69% = satisfactory, 70-79% = fair, 80-89% = good, 90-100% = excellent) .

### Required and recommended readings:

szerk.: Kevei F.: Mikrobiológia gyakorlatok I. JATE Press, 2010.

Dr. Horváth Sándor: Mikrobiológiai praktikum, Tankönyvkiadó vállalat, 1980.