

## Tárgytematika / Course Description Food Microbiology and Hygiene 1

MENB\_ÉTTA006

Tárgyfelelős neve /

Teacher's name: dr. Varga László

Félév / Semester: 2024/25/2

Beszámolási forma /

Assesment: Vizsga

Tárgy heti óraszám /

Teaching hours(week): 3/2/0

Tárgy féléves óraszám /

Teaching hours(sem.): 0/0/0

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### OKTATÁS CÉLJA / AIM OF THE COURSE

#### Objectives of the course:

The main objective of this course is to help students develop an understanding of environmental factors that affect the activities of microorganisms associated with food spoilage, foodborne diseases, and food fermentation. This seminar focuses on microbial ecology, metabolism, and growth conditions, thereby enabling the destruction of harmful microbes and the stimulation of beneficial ones. A detailed description and characterization of foodborne microorganisms are also provided. Upon successful completion of the course, students should be able to (1) explain the significance and activities of microbes in food, (2) discuss the microbiology of various types of food products, and (3) explain why microbiological quality control programs are needed in food production.

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### TANTÁRGY TARTALMA / DESCRIPTION

#### Course content:

Week 1: The trajectory of food microbiology

Week 2: Microbial growth, survival, and death in foods

Week 3: Spores and their significance

Week 4: Lactic acid bacteria and their fermentation products

Week 5: Yeast-based and other fermentations

Week 6: Indicator microorganisms and microbiological criteria

Week 7: Spoilage organisms

Week 8: Chemical antimicrobials

Week 9: Biologically based preservation and probiotic bacteria

Week 10: Physical methods of food preservation

Week 11: Non-thermal processing

Week 12: Sanitation and related practices

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## SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

### Requirements:

Attendance at more than 70% of the weekly classes is compulsory. Students must sign their name on the class register. No extra sessions will be provided for missed classes. The signature is a prerequisite of the exam. There is no possibility for pre-exam. Type of exam: written and oral test. All topics covered will be discussed in the exam. Grading: 1 (fail) to 5 (excellent).

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## KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

### Required and recommended readings:

Doyle, M.P., Diez-Gonzalez, F., Hill, C. (2019): Food microbiology: fundamentals and frontiers (5th ed.). ASM Press, Washington, DC.

Montville, T.J., Matthews, K.R., Kniel, K.E. (2012): Food microbiology: an introduction (3rd ed.). ASM Press, Washington, DC. Original research papers and up-to-date reviews published in top-tier scientific journals, e.g., *Food Microbiology*, *International Journal of Food Microbiology*, etc.

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## AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL