

## Tárgytematika / Course Description Food Biotechnology

N\_DMA51

**Tárgyfelelős neve /**

**Teacher's name:** dr. Szigeti Jenő

**Félév / Semester:** 2023/24/1

**Beszámolási forma /**

**Assesment:** Vizsga

**Tárgy heti óraszám /**

**Teaching hours(week):** 0/0/0

**Tárgy féléves óraszám /**

**Teaching hours(sem.):** 30/0/0

### OKTATÁS CÉLJA / AIM OF THE COURSE

This seminar explores the basic reaction kinetics of food biotechnology processes. The course is closely connected to “Applied microbiology” and “Food microbiology”.

### TANTÁRGY TARTALMA / DESCRIPTION

1. Basic concepts in biotechnology and their practical applications.
2. Optimization of environmental conditions for microorganisms.
3. Evaluation of microbial metabolic processes from a biotechnological point of view.
4. Influencing microbial production through genetic engineering using restriction endonucleases; production kinetics of primary and secondary metabolites.
5. Modern biotechnological processes used in the food industry (types of fermenters, aeration methods, computer-aided process control, etc.).
6. Operation principles of aerobic, anaerobic, and immobilized fermentation systems.
7. Biotechnological aspects of dairy foods production.
8. Biotechnological aspects of manufacturing meat products.
9. Biotechnological processes used in fermentation industries.
10. Biotechnological aspects of waste water management.
11. Major food fermentation methods and separation techniques.
12. Genetic modification (engineering) in food production.

### SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

Meeting the conditions set by the supervisor.

---

## KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

**Joshi, V. K., Singh, R. S.** (2012): Food biotechnology: principles and practices. I. K. International Publishing House, New Delhi, India.

**Moo-Young, M.** (2011): Comprehensive biotechnology (2nd ed.). Vol. 1-6. Elsevier, Oxford, UK.

**Original research papers and up-to-date reviews published in international scientific journals such as *Applied Food Biotechnology, Food Biotechnology, Food Science and Biotechnology, Food Technology and Biotechnology, etc.***

---

## AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL