

## Tárgytematika / Course Description Food unit operations

**MENB\_BÉTA032**

**Tárgyfelelős neve /**

**Teacher's name:** Dr. Kovács Attila József

**Félév / Semester:** 2023/24/2

**Beszámolási forma /**

**Assesment:** Vizsga

**Tárgy heti óraszám /**

**Teaching hours(week):** 4/2/0

**Tárgy féléves óraszám /**

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

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### OKTATÁS CÉLJA / AIM OF THE COURSE

The aim of the course is to understand basic food unit operations. Students will understand mainly the physical background of food technologies. The theoretical background of food machine operations and processes will be thought. The acquainted knowledge will not only be used for existing technologies and machines but it will be necessary for further food technology development, too. The subjects of this course will be part of the final examination of food engineering studies.

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### TANTÁRGY TARTALMA / DESCRIPTION

Introduction, mathematical and physical basics, SI units

Size reduction, sieving

Thermodynamic basics, Evaporation

Heat transfer

Refrigeration

Drying

Heat exchangers

Rheological basics, Viscosity

Knowledge verification (mid-term test) methods

Sedimentation, dust separation, filtration

Mixing, centrifugation

Advanced unit operation

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

During the semester there will be two mid-term tests, weighing 30% of the final score. The exam is both written and oral. Acceptance rate 50% of any type of tests or exams.

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## **KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL**

Singh – Heldman (2001) Introduction to food Engineering, Third Edition, Academic Press  
<http://rpaulsingh.com/default.html>

R.L. Earle, M.D. Earle: Unit operations in food processing: <http://www.nzifst.org.nz/unitoperations/index.htm>

Da-Wen Sun (Ed.) (2005) Emerging Technologies for Food Processing, Elsevier Academic Press

Zeki Berk (2009) Food ProcessEngineering and Technology. Elsevier Academic Press

McGlinchey Don (Ed.) (2008) Bulk Solids Handling Bulk Solids Handling Equipment Selection and Operation. Blackwell Publishing Ltd

Dr. Attila Dévay (2013) The Theory and Practice of Pharmaceutical Technology. University of Pécs

Institute of Pharmaceutical Technology and Biopharmacy. [https://regi.tankonyvtar.hu/hu/tartalom/tamop412A/2011-0016\\_01\\_the\\_theory\\_and\\_practise\\_of\\_pharmaceutical\\_technology/index.html](https://regi.tankonyvtar.hu/hu/tartalom/tamop412A/2011-0016_01_the_theory_and_practise_of_pharmaceutical_technology/index.html)

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## **AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL**