



MUTAH UNIVERSITY  
Faculty of Engineering  
Department of Chemical Engineering



## Food Industries Engineering

### COURSE SYLLABUS

Course Code	Course Name	Credits	Contact Hours
0404577	Food Industries Engineering	3	48

#### INSTRUCTOR/COORDINATOR

Name	....
Email	....@mutah.edu.jo
Website	

#### TEXTBOOK

##### TextBook:

- Romeo T. Toledo, “Fundamentals of Food Process Engineering”, (Food Science Texts Series), 2006.

##### References:

- Food Quality Quantization and Process Control, Alexandre A. Shvartsburg, CRC Press, 2001
- Food Process Engineering And Technology, Zeki Berk, Academic Press: 2009; 2008

#### SPECIFIC COURSE INFORMATION

##### **A. Brief Description of the Content of the Course (Catalog Description)**

Review of material and energy balances, fluid flow theory , viscosity, heat Unit operation transfer, evaporation, dehydration, freeze drying, mechanical separation, mixing , size reduction and extraction , cleaning , grading , handling and waste treatment .

##### **B. Pre-requisites (P) or Co-requisites (C)**

**(P): 0404491 Chemical Reaction Engineering II**

##### **C. Course Type (Required or Elective)**

Selected Elective

## SPECIFIC GOALS

### A. Specific Outcomes of Instruction

Upon successful completion of this course students will be able to

- Understand the mass and energy balance, drying principles and calculations in relation to food applications (SLO-1).
- Understand the concept of heat transfer in food and thermal treatments (SLO-1).
- Understand the concept of fluid flow, energy calculations and refrigeration system (SLO-1).
- Develop a detailed application and use basic principles of food engineering and apply these principles by solving food processing problems (SLO-2).
- Apply, analyze and use mathematical calculations including steam tables, psychrometric chart, drying and heat transfer and fluid flow calculations that is related to food processing problems and able to find solutions (SLO-1).
- Able to evaluate the needs/requirements for thermal processing, energy calculations and fluid flow for food applications (SLO-4).
- Critically review requirements of food applications that can be used in minimize losses and conserve energy (SLO-4).

### B. Student Learning Outcomes (SLOs) Addressed by the Course

1	2	3	4	5	6	7				
✓	✓		✓							

## BRIEF LIST OF TOPICS TO BE COVERED

List of Topics	No. of Weeks	Contact Hours
• Review of Mathematical Principles and Applications in Food Processing	1-2	3 hr/week
• Material and Energy Balances	3-5	3 hr/week
• Flow of Fluids	6-7	3 hr/week
• Thermal Processes applied on Food Industries	8-10	3 hr/week
• Mechanical processes in Food Industries	11-14	3 hr/week
• Waste Management in Food Industries	15-16	3 hr/week
<b>Final Exam</b>	<b>16</b>	

## METHODS OF ASSESSMENT

No.	Method of assessment	Week and Date	%
1	Midterm Examination	9th week	30
2	Homeworks and Activities	All over the Semester	20
3	Final examination	End of Semester	50

Total	<b>100</b>
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