



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Vacuum Technology Applications in Food Engineering							
Course Code		GMP620		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		In the scope of this course, it was aimed that to give information about vacuum technology applications in food engineering and recent developments in this field.							
Course Content		This course covers fundamentals of vacuum technology, mechanisms of low pressure supplies and the subjects among vacuum technology applications as vacuum concentration, vacuum drying, vacuum frying, vacuum packaging, vacuum cooling and vacuum impregnation.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)		Prof. Fatih Mehmet YILMAZ							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	25
Final Examination	1	40
Assignment	1	35

Recommended or Required Reading

1	Roth, A., 1990, Vacuum Technology (3rd Ed), Elsevier Science B.V, 1-16p.
2	Jorisch, W. (Ed.). (2014). Vacuum technology in the chemical industry. John Wiley & Sons.

Week Weekly Detailed Course Contents & Teaching Methods

1	Theoretical	Gas theories and transport phenomena in vacuum technology
2	Theoretical	Measurement methods of vacuum pressure
3	Theoretical	Pump selection for supplying the low pressure
4	Theoretical	Freeze-drying operation
5	Theoretical	Vacuum technology on the conveying of powder and bulk materials
6	Theoretical	Vacuum concentration in the food industry
7	Theoretical	Vacuum drying in the food industry
8	Intermediate Exam	Midterm
9	Theoretical	Vacuum packaging in the food industry
10	Theoretical	Vacuum frying in the food industry
11	Theoretical	Vacuum impregnation in the food industry
12	Theoretical	Vacuum cooling in the food industry
13	Theoretical	Project presentations
14	Theoretical	Project presentations
15	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	8	3	154
Assignment	1	20	2	22
Midterm Examination	1	10	2	12
Final Examination	1	10	2	12
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

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Programme Outcomes (Food Engineering Doctorate)

1	Developing and investigating the details of current and advanced knowledge in the field of Food Engineering by original thought and/or research on the level of expertise based on the graduate qualification and reaching to the original definitions that bring innovation to science.
2	Gain of ability of develop strategies, policies and implementation plans in the field of food engineering and evaluate the results within the framework of quality processes.
3	Gain of ability to perceive, design, evaluate and finish an original process by using and following the knowledge of the recent developments in the engineering fields.
4	Gain of ability of making critical analysis, synthesis and evaluation of ideas and development in food engineering field
5	Having advanced knowledge of food science and its applications based on doctoral level qualifications.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	3	4	4	4	5
P2	4	4	4	3	5
P3	5	3	4	5	3
P4	3	5	4	5	4
P5	4	4	4	4	4

