

Department of Food Engineering / Department of Food Engineering /

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
GM-208	PHYSICOCHEMICAL AND BIOLOGICAL PROPERTIES OF FOODS	2.00	0.00	0.00	2.00	4.00
Course Detail						
Course Language : Turkish						
Qualification Degree : Bachelor						
Course Type : Compulsory						
Preconditions : Not						
Objectives of the Course : The aim of the course is to introduce foods in detail the physicochemical and biological properties.						
Course Contents : Foundations based on the physical properties of foods, density and specific gravity, textural and rheological properties, emulsion, foam, gel, adhesion, cohesion, surface properties, such as solubility and wettability, thermal properties of foods, food thermal conductivity, dielectric properties of foods.						
Recommended or Required Reading : Course Notes; Çalışkan Koç, G., Süfer, Ö. 2024. Gıdaların mühendislik ve kalite özellikleri. Nobel yayinevi. Sahin, S., Şumnu, S.G., 2006. Physical Properties of Foods. Springer Science+Business Media, LLC. M.A., Rao, Syed, S.H., Rizvi, Ashim, K., Datta, 2005. Engineering Properties of Foods Taylor & Francis Group, New York, USA.						
Planned Learning Activities and Teaching Methods : Lectures, discussions						
Recommended Optional Programme Components :						
Course Instructors : Doç. Dr. Kamil Emre Gerçekaslan						
Instructor's Assistants :						
Presentation Of Course : Face-to-Face Learning						
Update Date : 8/21/2025 11:35:35 AM						
Dosya İndirilme Tarihi : 2/5/2026						

Course Outcomes

Upon the completion of this course a student :

- 1 The student will be able to explain the basic physicochemical properties of foods.
- 2 The student will be able to relate physicochemical and biological properties to food quality and stability.
- 3 student can use the learned information in food industry
- 4 The student will be able to communicate scientific findings effectively through reports and presentations

Pre / Side Conditions

Course Code	Course Name	Condition	Teorical	Practice	Laboratory	Credits	ECTS

Weekly Contents

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
1. Week	*Water and its properties, General terms and definitions			*Lecture notes pages 1-18	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2
2. Week	*Size, Shape, volume, density, porosity			*Lecture notes pages 19-92	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2
3. Week	*Size, Shape, volume, density, porosity			*Lecture notes pages 19-92	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2
4. Week	*Size, Shape, volume, density, porosity			*Lecture notes pages 19-92	*Lecture, question-answer	
5. Week	*Thermal properties of foods			*Lecture notes pages 93-152	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
6. Week	*Thermal properties of foods			*Lecture notes pages 93-152	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
7. Week	*Surface properties of foods			*Lecture notes pages 154-246	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
8. Week	*mid-term exam					
9. Week	*Surface properties of foods			*Lecture notes pages 154-246	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
10. Week	*Surface properties of foods			*Lecture notes pages 154-246	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
11. Week	*Electromagnetic properties of foods			*Lecture notes pages 248-301	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
12. Week	*Electromagnetic properties of foods			*Lecture notes pages 248-301	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
13. Week	*Rheological properties of foods			*Lecture notes pages 303-355	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
14. Week	*Rheological properties of foods			*Lecture notes pages 303-355	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
15. Week	*General repetition			*All lecture notes	*Lecture, question-answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4

Assesment Methods %

1 Ara Sınav: 40.000

3 Final : 60.000

ECTS Workload

Activities	Count	Time(Hour)	Sum of Workload
Vize	1	1.00	1.00
Derse Katılım	14	2.00	28.00
Ders Öncesi Bireysel Çalışma	14	1.00	14.00
Ders Sonrası Bireysel Çalışma	14	1.00	14.00
Ara Sınav Hazırlık	7	4.00	28.00
Final Sınavı Hazırlık	7	4.00	28.00
Final	1	2.00	2.00
Total : 115.00			
Sum of Workload / 30 (Hour) : 4			
ECTS : 4.00			

Program And Outcome Relation

	P.O.1	P.O.2	P.O.3	P.O.4	P.O.5	P.O.6	P.O.7	P.O.8	P.O.9	P.O.10	P.O.11	P.O.12	P.O.13	P.O.14
	P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14
L.O. 1	5	5	0	0	0	0	0	0	0	0	0	0	3	3
L.O. 2	5	5	0	0	0	0	0	0	0	0	0	0	3	3
L.O. 3	5	5	0	3	0	0	0	0	0	0	0	0	3	3
L.O. 4	5	5	3	0	0	0	0	0	0	0	0	0	3	1
Average	7.50	10.00	0.75	0.75	0	0	0	0	0	0	0	1.50	5.00	3.50

Ders/Program Çıktıları İlişkisi

P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14
10	20	0	0	0	0	0	0	0	0	0	6	8	4

BEWARE OF PLAGIARISM Please pay attention to proper academic citation rules and avoid plagiarism, an unethical and academically fraudulent behavior, when completing reports, assignments, or other academic works, and it is treated with the same disciplinary action as cheating in a classroom setting. It is imperative to refrain from presenting another person's ideas, language, expressions, or any other form of intellectual property as your own. Regardless of quality, your assignments/projects/research should reflect your original work. Perfection is not a requirement, and in case of any uncertainties regarding academic writing guidelines, you may seek clarification from your course instructor.

Engel Durumu/Uyarlama Talebi : Engel durumuna ilişkin herhangi bir uyarlama talebinde bulunmak isteyen öğrenciler, dersin öğretim elemanı ya da Nevşehir Engelli Öğrenci Birimi ile en kısa sürede iletişime geçmelidir.