

Department of Food Engineering / Department of Food Engineering /						
Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
GM511	CEREAL CHEMISTRY	3.00	0.00	0.00	3.00	6.00
Course Detail						
Course Language	: Turkish					
Qualification Degree	: Master					
Course Type	: Optional					
Preconditions	: Not					
Objectives of the Course	: The aim of this course is to provide students with knowledge of the chemical composition, functional properties, and roles of cereals in food processing. Students will learn the major components of cereals (starch, proteins, lipids, fiber, minerals, etc.) and understand their impact on food quality, nutritional value, and technological properties.					
Course Contents	: This course covers the chemical composition, structural properties, and technological functions of wheat, corn, rice, barley, oats, and other cereals. Topics include starch, proteins, lipids, dietary fiber, and minerals, as well as their impact on food processing and product quality.					
Recommended or Required Reading	: Lecture notes; Principles of Cereal Science and Technology, Third Edition 2010. Authors: Jan A. Delcour, Katholieke Universiteit Leuven, Leuven, Belgium and R. Carl Hoseney, R&R Research Services, Manhattan, Kansas, U.S.A.					
Planned Learning Activities and Teaching Methods	: Lecture, question answer					
Recommended Optional Programme Components	:					
Course Instructors	: Doç. Dr. Kamil Emre Gerçekaslan					
Instructor's Assistants	:					
Presentation Of Course	: Face to face					
Update Date	: 8/27/2025 1:47:09 PM					
Dosya İndirilme Tarihi	: 8/28/2025					

Course Outcomes
Upon the completion of this course a student :
1 Explain the chemical composition and structural properties of cereals.
2 Identify the characteristics of cereal carbohydrates, proteins, lipids, and fibers.
3 Evaluate the effects of cereal components on food processing and product quality.
4 Compare the chemical and technological properties of different cereals.

Preconditions						
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Weekly Contents						
	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
1.Week	*Importance and classification of cereals			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1
2.Week	*Importance and classification of cereals			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1
3.Week	*Morphology and structural components of cereal grains			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1
4.Week	*Morphology and structural components of cereal grains			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1
5.Week	*Carbohydrates in cereals: starch and other polysaccharides			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
6.Week	*Carbohydrates in cereals: starch and other polysaccharides			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
7.Week	*Starch structure, gelatinization, retrogradation			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
9.Week	*Cereal proteins. Functional properties of proteins and their relation to food processing			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
10.Week	*Cereal proteins. Functional properties of proteins and their relation to food processing			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
11.Week	*Lipids and enzymes in cereals			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
12.Week	*Lipids and enzymes in cereals			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
13.Week	*Dietary fiber, minerals, and vitamins in cereals			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
14.Week	*Dietary fiber, minerals, and vitamins in cereals			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4
15.Week	*Current research and student presentations			*Lecture notes; Principles of Cereal Science and Technology	*Lecture, question answer	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.4

Assesment Methods %

ECTS Workload			
Activities	Count	Time(Hour)	Sum of Workload
Vize	1	2.00	2.00
Derse Katılım	14	3.00	42.00
Ders Öncesi Bireysel Çalışma	14	2.00	28.00
Ders Sonrası Bireysel Çalışma	14	2.00	28.00
Final	1	2.00	2.00
Ara Sınav Hazırlık	7	3.00	21.00
Final Sınavı Hazırlık	7	4.00	28.00
Araştırma Sunumu	14	2.00	28.00
Total :			179.00
Sum of Workload / 30 (Hour) :			6
ECTS :			6.00

Program And OutcomeRelation														
	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	0	0	0	0	0	4	5	0	5	3	4	0	0
L.O. 2	5	0	0	0	0	0	4	5	0	5	3	4	0	0
L.O. 3	5	0	0	0	0	0	4	5	0	5	3	4	0	0
L.O. 4	5	0	0	0	0	0	4	5	0	5	3	4	0	0
Avarage	5.00	0	0	0	0	0	4.00	5.00	0	5.00	3.00	4.00	0	0

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.