Tarih: 21 Ağustos 2025 13:40

Department of Food Engineering / Department of Food Engineering /

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
GM-205	FOOD LABORATORY TECHNIQUES I	2.00	2.00	0.00	3.00	5.00

Course Detail

Course Language	:	Turkish
Qualification Degree	:	Bachelor
Course Type	:	Compulsory
Preconditions	:	Not
Objectives of the Course	:	The aim of this course is to teach students the fundamental analytical methods used in food laboratories and to provide them with the theoretical knowledge and practical skills required for their application. In addition, the course aims to develop competence in laboratory safety, responsibility, and accurate evaluation of analytical results.
Course Contents	:	Overview and Orientation of the Laboratory; Principles of Laboratory Safety; Introduction to Analytical Instruments and Consumables; Fundamental Analytical Techniques for the Determination of Moisture, Ash, and Acidity
Recommended or Required Reading	:	Food Laboratory Techniques Lecture Notes; Food Laboratory Technique Book, Prof. Dr. İsmet Şahin, Prof. Dr. Duygu Göçmen, NOBEL Publishing, 2020.
Planned Learning Activities and Teaching Methods	:	Lectures, group discussions, and case study analyses.
Recommended Optional Programme Components	:	.....
Course Instructors	:	Doç. Dr. Kamil Emre Gerçekaslan
Instructor's Assistants	:	None.
Presentation Of Course	:	Face to face
Update Date	:	8/21/2025 10:19:00 AM
Dosya İndirilme Tarihi	:	8/21/2025

Course Outcomes

Upon the completion of this course a student :

1 The student will be able to work safely in food laboratories

2 The student will be able to apply first aid methods in laboratory accidents.

3 The student will be able to prepare chemicals and solutions used in the food laboratory.

4 The student will be able to use basic instruments and equipment in the food laboratory.

5 The student will be able to take responsibility in the laboratory.

6 The student will be able to understand the principles of basic laboratory analyses and perform them.

Preconditions

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Weekly Contents

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
1.Week	*Definition, types and designs of laboratories		*Introduction of department laboratories and their equipment	*Lecture Slides 1–8	*Lecture, Question–Answer	Ö.Ç.1 Ö.Ç.1
2.Week	*Fundamentals of gravimetric, volumetric and instrumental analysis techniques		*Introduction of department laboratories and their equipment	*Lecture Slides 8–14	*Lecture, Question–Answer	Ö.Ç.1 Ö.Ç.1
3.Week	*General precautions to be taken in the laboratory and the meaning of the signs		*Gravimetric analysis	*Lecture Slides 15-31	*Lecture, Question–Answer	Ö.Ç.1 Ö.Ç.4 Ö.Ç.1 Ö.Ç.2
4.Week	*Matters to be Considered in Laboratory Studies		*Gravimetric analysis	*Lecture Slides 32-39	*Lecture, Question–Answer	Ö.Ç.1 Ö.Ç.4 Ö.Ç.1 Ö.Ç.2
5.Week	*Glass, porcelain, plastic and other consumables used in the laboratory		*Introduction and usage practices of glass, porcelain, plastic and other consumables used in the laboratory	*Lecture Slides 40-58	*Lecture, Question–Answer	Ö.Ç.1 Ö.Ç.4 Ö.Ç.1 Ö.Ç.4
6.Week	*Glass, porcelain, plastic and other consumables used in the laboratory		*Introduction and usage practices of glass, porcelain, plastic and other consumables used in the laboratory	*Lecture Slides 40-58	*Lecture, Question–Answer	Ö.Ç.1 Ö.Ç.4 Ö.Ç.1 Ö.Ç.4
7.Week	*Basic devices used in the laboratory		*Introduction to basic laboratory equipment and usage practices	*Lecture Slides 59-77	*Lecture, Question–Answer	Ö.Ç.1 Ö.Ç.4 Ö.Ç.5 Ö.Ç.1 Ö.Ç.4 Ö.Ç.5
9.Week	*Basic devices used in the laboratory		*Introduction to basic laboratory equipment and usage practices	*Lecture Slides 59-77	*Lecture, Question–Answer	Ö.Ç.1 Ö.Ç.4 Ö.Ç.5 Ö.Ç.1 Ö.Ç.4 Ö.Ç.5
10.Week	*Cleaning of laboratory equipment and its importance.		*Cleaning of laboratory equipment and its importance.	*Lecture Slides 77-85	*Lecture, Question–Answer	Ö.Ç.3 Ö.Ç.5 Ö.Ç.3 Ö.Ç.5
11.Week	*Sampling and preparation for analysis		*Sampling and preparation for analysis	*Lecture Slides 86-101	*Lecture, Question–Answer	Ö.Ç.2 Ö.Ç.5 Ö.Ç.3 Ö.Ç.5
12.Week	*Importance of water in foods, water activity, and moisture determination.		*Water activity and moisture determination analysis.	*Lecture Notes on Moisture and Total Solids Determination in Foods	*Lecture, Question–Answer	Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6
13.Week	*Presence of minerals in foods and ash determination.		*Ash determination analysis.	*Lecture Notes on Ash Determination in Foods.	*Lecture, Question–Answer	Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6
14.Week	*Determination of specific gravity and density in foods		*Determination of specific gravity and density in foods	*Relevant lecture notes	*Lecture, Question–Answer	Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6
15.Week	*Titration acidity and pH determination in foods		*Titration acidity and pH determination in foods	*Relevant lecture notes.	*Lecture, Question–Answer	Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6

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
Final	1	2.00	2.00
Derse Katılım	14	2.00	28.00
Laboratuvar	14	2.00	28.00
Ara Sınav Hazırlık	7	3.00	21.00
Final Sınavı Hazırlık	7	4.00	28.00
Ders Öncesi Bireysel Çalışma	14	1.00	14.00
Uygulama / Pratik Sonrası Bireysel Çalışma	14	1.00	14.00
		Total :	136.00
		Sum of Workload / 30 (Hour) :	5
		ECTS :	5.00

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	0	5	0	0	3	0	4	3
L.O. 2	5	0	0	0	0	0	0	0	0	0	4	0	0	3
L.O. 3	5	0	0	2	0	0	0	0	0	0	3	0	4	3
L.O. 4	5	0	0	3	0	0	0	0	0	0	0	0	5	3
L.O. 5	5	0	0	0	0	5	0	0	5	0	3	0	5	3
L.O. 6	5	0	0	3	0	0	0	0	0	0	0	0	5	3
Avarage	5.00	0	0	1.33	0	0.83	0	0.83	0.83	0	2.17	0	3.83	3.00

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