

	ÇANKIRI KARATEKİN UNIVERSITY FACULTY OF ENGINEERING FOOD ENGINEERING DEPARTMENT COURSE INFORMATION PACKAGE
---	---

Course Title /Code	GMÜ409 / FOOD ANALYSIS LABORATORY				
Semester	4 / FALL				
Language	TURKISH				
Course Level	Associate Degree <input type="checkbox"/>	BSc. <input checked="" type="checkbox"/>	MSc. <input type="checkbox"/>	PhD <input type="checkbox"/>	
Type	Compulsory <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>			
Laboratory+Practic e hour	Therotical	Practice	Laboratory	Course hours	ECTS
		0	2	2	2

TABLE FOR ECTS / WORK LOAD

Activity	Number	Time (Hours)	Total Workload
Course Duration (week x course hour)	14	2	28
Studies out of classroom (prestudy, practice)	14	1	14
Assignments			
Short-term exams (exam duration +preparation)	14	1	14
Midterms (exam + preparation)	1	2	2
Final exams (exam + preparation)	1	3	3
Project/Term paper			
Laboratory			
Other (Practice exam etc.)	1	2	2
Total Workload			63
Total Workload / 30			2.1
ECTS			2

Evaluation criteria	Activity	Number	Percentage (%)
	Midterms	1	30
	Short-term exams	14	10
	Assignments		
	Project/Term paper		
	Laboratory		
	Other (Practice Exam)	1	20
	Final exams	1	40

Course Contents		
Weeks	Topics	Study Materials
1	Presentation of the laboratory, the separation of the	K1-EXPERIMENT-1

	experimental group students	or R1-EXPERIMENT-1
2	Fruit juices Soluble solids (Bx) measurement; Number of formalin test and peroxidase, pectin determination	K1- EXPERIMENT -8 or R1- EXPERIMENT -8
3	Nitrosomyoglobin, color, salt determination	K1-EXPERIMENT-2 or R1- EXPERIMENT-2
4	TBA-putrefaction-protein	K1- EXPERIMENT -3 or R1- EXPERIMENT-3
5	Milk considered analysis (platform test)	K1- EXPERIMENT -4 or R1- EXPERIMENT-4
6	Heat treatment of the control milk (alkaline phosphatase, peroxidase and turbidity tests)	K1- EXPERIMENT-5 or R1- EXPERIMENT-5
7	Sedimentation tests and gelatinization, gluten testing (wet, dry, gluten index) Pasta in cooking test, increase in volume, determination of the amount of the substance in water	K1- EXPERIMENT -6 and 7 or R1- EXPERIMENT-6 and 7
8	UV-Visible spectrophotometer presentation and receipt of spectrum, Determination of polyphenols fruit juices with Visible Spectrophotometer	K1- INSTRUMENTAL-EXPERIMENT-1 or R1- INSTRUMENTAL-EXPERIMENT -1
9	Demonstration of the summability of absorbance by UV-Visible Spectrophotometer	K1- INSTRUMENTAL-EXPERIMENT-2 or R1- INSTRUMENTAL-EXPERIMENT -2
10	Introduction of atomic absorption spectrophotometer and determination of iron in water	K1- INSTRUMENTAL EXPERIMENT-3 or R1- INSTRUMENTAL-EXPERIMENT -3
11	Chemical structure determination by FTIR-ATR	K1- INSTRUMENTAL-EXPERIMENT -4 or R1- INSTRUMENTAL-EXPERIMENT -4
12	Identification of synthetic dyes in foods Thin Layer Chromatography	K1- INSTRUMENTAL-EXPERIMENT -5 or R1- INSTRUMENTAL-

		EXPERIMENT -5
13	High Pressure Liquid Chromatography (HPLC) presentation and analysis of caffeine in cola drinks	K1- INSTRUMENTAL-EXPERIMENT -6 or R1- INSTRUMENTAL-EXPERIMENT -6
14	Introduction to Gas Chromatography Device and Analysis of Fatty Acids Methyl Esters	K1- INSTRUMENTAL -EXPERIMENT -7 or R1- INSTRUMENTAL-EXPERIMENT -7

Learning outcomes	<p>1. Practices on some chemical analysis techniques within the scope of food technology</p> <p>2.Practices on some chemical analysis techniques within the scope of food technology</p> <p>3.Practices on some spectroscopic analysis techniques</p> <p>4.Practices with devices that they will encounter in their professional lives</p>
--------------------------	--

Prerequisites courses	Being registered to GMU 308 Food Chemistry Laboratory course is required.
Language of instruction	Turkish
Course Coordinator	Associate Prof.Dr.Baran Önal Ulusoy
Assistants	Research assistant Elif GÖKŞEN SAKAR
Goals	The aims of this course are to introduce students to some of the instrumental analysis devices that they will always encounter in their professional lives, to give basic principles of instrumental and chemical analysis methods and to make the applications related to them.
Course Content	Kimyasal gıda analiz yöntemleri (Manual Testler) ve Enstrümantal analiz cihazları kullanılarak yapılan gıda analizleri
Resources	K1.GMÜ 409 Gıda Analiz Lab. Ders notları or R1.GMÜ 409 Gıda Analiz Lab. Ders notları
Supplementary book	YK1.Skoog, D.A., Holler, F.J. & Crouch, S.R. (2017) Principles of instrumental analysis. (7.Baskı). Cengage Learning, Inc, Mason, OH. YK2. Cemeroğlu, B. (2010). Gıda Analizleri (2. Baskı). Nobel Yayınevi, Ankara. or SR1.Skoog, D.A., Holler, F.J. & Crouch, S.R. (2017) Principles of instrumental analysis. (7.Baskı). Cengage Learning, Inc, Mason, OH. SR2. Cemeroğlu, B. (2010). Gıda Analizleri (2. Baskı). Nobel Yayınevi, Ankara.
Documents	D1.TÜRK GIDA KODEKSİ BULAŞANLAR YÖNETMELİĞİ, Resmi gazete Sayı: 28157, 28 Aralık 2011.

No	Program Learning Outcomes	Level of contribution
1	To be able to apply mathematics, science and engineering theories and principles into Food Engineering problems.	3
2	To be able to plan and perform product development applications in Food Engineering	-
3	To be able to design and conduct experiments, as well as to analyze and interpret data	5
4	To be able to design and analyze a process for a specific purpose within technical and economical limitations	-
5	To be able to recognize advanced technologies in engineering applications and solve the problems encountered during the implementation of these technologies	4
6	To be able to obtain information on contemporary issues by following technological developments and select and use appropriate tools in engineering applications	-
7	To have the ability to define, model, and solve problems related to Food Engineering.	-
8	Extensive education to understand the effects of engineering calculations in universal and social size.	-
9	To be able to use modern techniques and calculation tools required for engineering applications.	-
10	To be able to have an information about current national and international legislations.	3
11	To be able to evaluate engineering solutions for the health, safety, and environmental problems.	4
12	To be able to get involved in interdisciplinary and multidisciplinary team work.	2
13	To have the awareness of professional liabilities and ethics.	-
14	To have the awareness of lifelong learning.	4
15	To be able to perceive, adopt and implementation of social and cultural responsibilities.	-
^a Contribution level (1: Low 2:Low ~ Moderate 3: Moderate 4: High 5: Excellent)		