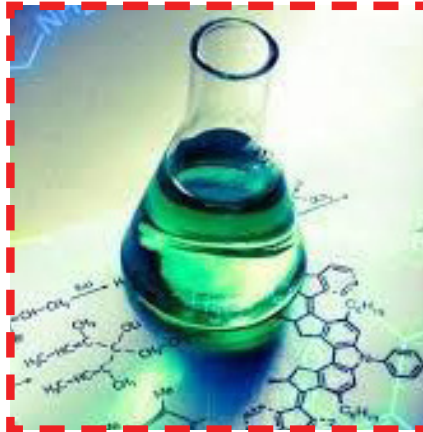
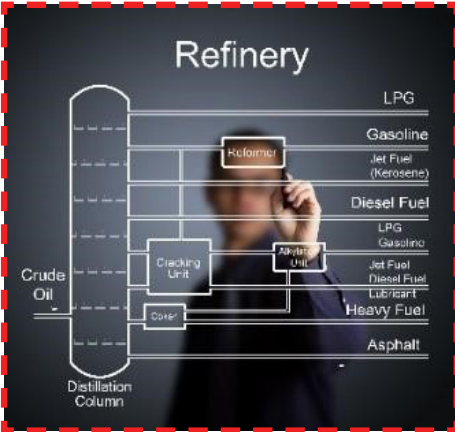


Türkiye'nin Beyin Üssü

### KİMYA MÜHENDİSLİĞİ

Öğrenim Dili: İngilizce (Zorunlu İngilizce Hazırlık) • Puan Türü: SAY



#### Kimya Mühendisliği Nedir?

Kimya mühendisliği hammadde ve kimyasalların yararlı ve değerli ürünlere dönüştürülmesini hedefleyen ve bu amaçla matematik, fizik, kimya gibi temel bilimlerin yanında yaşam ve mühendislik bilimlerinin temel ilke ve yaklaşımlarını da esas alan çok disiplinli bir mühendislik alanıdır.

#### Kimya Mühendisliği Bölümünde Alınan Dersler Nelerdir?

Kimya Mühendisliği Bölümü, mühendislik disiplini ile bütünleşik olan temel bilimlerin teorik ve uygulamalı derslerinden oluşmaktadır. Kimya Mühendisliği Bölümü öğrencileri için; petrokimya, kimya, ilaç, biyoteknoloji, kimyasal süreç modelleme, çevre ve enerji yönetimi, yenilenebilir enerji, atık yönetimi, biyomalzemeler, nanoteknoloji, katalizörler ve katalitik reaksiyonlar, polimer bilimi, süreç mühendisliği, biyoinformatik ve biyoistatistik gibi birçok alanda uzmanlaşma fırsatı oluşturacak bir eğitim sunulmaktadır.

#### Kimya Mühendislerinin Çalışma Alanları Nelerdir?

Kimya mühendislerinin iş imkânları çok çeşitlidir. Kimya mühendisleri kimyasal süreç ve tesis içeren her türlü sektörde üretim, planlama, pazarlama ve araştırma-geliştirme departmanlarında çalışabilirler.

Sektör olarak, kimya mühendisleri için petrokimya, kimya, ilaç, enerji, çimento, boya, plastik, biyoteknoloji, tarım, metal, kağıt, gıda ve tekstil gibi birçok sektörde çalışma fırsatı bulunmaktadır. Kimya mühendisleri devlet ve özel sektörde çalışabilmenin yanı sıra tercihe göre yurt içinde ya da yurt dışında çeşitli araştırma desteklerinin yardımıyla akademik kariyer yolunu da izleyebilmektedir.

## DERS PROGRAMI

YEAR ONE															
1st Term							2nd Term								
Code	Course Name	T	P	L	C	ECTS	Prerequisite	Code	Course Name	T	P	L	C	ECTS	Prerequisite
PHYS103	Physics I*	3	0	2	4	7		PHYS104	Physics II*	3	0	2	4	7	
MATH105	Calculus I*	3	2	0	4	7		MATH106	Calculus II*	3	2	0	4	7	
CHEM105	General Chemistry I *	3	0	2	4	7		CHEM102	General Chemistry II*	3	0	2	4	6	
CHE105	Computer Aided Engineering Graphics*	2	0	2	3	4		CHE102	Introduction to Chemical Engineering	3	0	0	3	4	
RPSC109	Positive Psychology and Communication Skills	3	0	0	3	5		MBG154	General Biology*	2	0	2	3	4	
TURK103	Turkish Language I	2	0	0	2	2		TURK104	Turkish Language II	2	0	0	2	2	
RCUL103	University Culture I****	0	2	0	1	4		RCUL104	University Culture II****	0	2	0	1	4	
Total Credits		16	4	6	21	36		Total Credits		16	4	6	21	34	
YEAR TWO															
3rd Term							4th Term								
Code	Course Name	T	P	L	C	ECTS	Prerequisite	Code	Course Name	T	P	L	C	ECTS	Prerequisite
CHE201	Mass and Energy Balances	3	2	0	4	5		CHE204	Chemical Engineering Thermodynamics *	2	2	0	3	5	
CHE221	Introduction to Programming for Chemical Engineering	2	0	2	3	4		CHE206	Fluid Mechanics and Applications	3	2	0	3	5	
CHEM203	Physical Chemistry	3	0	0	3	4		CHE292	Summer Practice I**	0	0	0	0	5	
MATH203	Differential Equations	2	2	0	3	5		CHEM104	Organic Chemistry*	3	0	2	4	6	
RPRE104	Entrepreneurship and Project Culture	2	0	0	2	3		MATH204	Statistics	3	0	0	3	5	
ATA103	Principles of Atatürk and History of Turkish Revolution I	2	0	0	2	2		ATA104	Principles of Atatürk and History of Turkish Revolution II	2	0	0	2	2	
ENG103	English I	2	0	0	2	2		ENG104	English II	2	0	0	2	2	
XXXXXX	Social Elective I	3	0	0	3	5									
Total Credits		19	4	2	22	30		Total Credits		15	2	2	17	30	
YEAR THREE															
5th Term							6th Term								
Code	Course Name	T	P	L	C	ECTS	Prerequisite	Code	Course Name	T	P	L	C	ECTS	Prerequisite
CHE301	Heat Transfer	3	0	0	3	5		CHE310	Mass Transfer	3	0	0	3	5	
CHE307	Chemical Reaction Engineering- I*	2	2	0	3	5		CHE312	Chemical Reaction Engineering- II*	2	2	0	3	5	
IE211	Engineering Economics	3	0	0	3	4		CHE332	Chemical Engineering Laboratory I*	1	0	4	3	4	
CHEXXX	Project I***	3	0	0	3	5		CHE392	Summer Practice II**	0	0	0	0	5	
XXXXXX	Social Elective II	3	0	0	3	5		CHEXXX	Project II***	3	0	0	3	5	
XXXXXX	Field Elective I	3	0	0	3	5		XXXXXX	Social Elective III	3	0	0	3	5	
Total Credits		17	2	0	18	29		Total Credits		12	2	4	15	29	
YEAR FOUR															
7th Term							8th Term								
Code	Course Name	T	P	L	C	ECTS	Prerequisite	Code	Course Name	T	P	L	C	ECTS	Prerequisite
CHE433	Chemical Engineering Design - I	3	0	0	3	5		CHE434	Chemical Engineering Design - II	3	0	0	3	5	CHE433
CHE403	Chemical Process Control	3	0	0	3	5		CHE492	Graduation Thesis*	1	8	0	5	5	
CHE431	Chemical Engineering Laboratory II*	1	0	4	3	4		CHEXXX	Departmental Elective III	3	0	0	3	5	
CHE421	Mathematical Modeling for Chemical Engineering	3	0	0	3	5		CHEXXX	Departmental Elective IV	3	0	0	3	5	
CHEXXX	Departmental Elective I	3	0	0	3	5		XXXXXX	Field Elective II	3	0	0	3	5	
CHEXXX	Departmental Elective II	3	0	0	3	5		OHS404	Occupational Health and Safety	4	0	0	4	4	
Total Credits		16	0	4	18	29		Total Credits		17	8	0	21	29	

2025-2026	Total Course Credits for Graduation	153
	Total Theoretical Hours	128
	Total Applied Course hours	26
	Total Laboratory Hours	24
	Total Course ECTS for Graduation	246
	Total Elective Courses ECTS	63
	Elective Course Ratio	26%

\* These courses are under the Applied Course status.

\*\*These courses are under the Internship Course status.

\*\*\*These courses are under the Project-Based Course status.

\*\*\*\*These courses are in the elective course status.

Elective Course Pool															
Code	Departmental Elective Courses	T	P	L	C	ECTS	Prerequisite		Elective Foreign Languages	T	P	L	C	ECTS	Prerequisite
CHE213	Physical Chemistry Laboratory	0	0	4	3	5			ARB123 Arabic I	3	0	0	3	5	
CHE202	Organic Chemistry - II (Project II)	3	0	0	3	5	CHEM104		ARB124 Arabic II	3	0	0	3	5	ARB123
CHE303	Introduction to Nanotechnology (Project II)	3	0	0	3	5			CHN123 Chinese I	3	0	0	3	5	
CHE305	Sustainable and Renewable Energy (Project II)	3	0	0	3	5			CHN124 Chinese II	3	0	0	3	5	CHN123
CHE306	Fermentation Technology	3	0	0	3	5			ESP123 Spanish I	3	0	0	3	5	
CHE308	Data Mining in Chemical Engineering (Project II)	3	0	0	3	5			ESP124 Spanish II	3	0	0	3	5	ESP123
CHE311	Transport Phenomena in Chemical Engineering	3	0	0	3	5			FRN123 French I	3	0	0	3	5	
CHE313	Structural Biology	3	0	0	3	5			FRN124 French II	3	0	0	3	5	FRN123
CHE314	Separation Processes	3	0	0	3	5			GER123 German I	3	0	0	3	5	
CHE321	Fundamentals of Biochemistry	3	0	0	3	5			GER124 German II	3	0	0	3	5	GER123
CHE323	Introduction to Biological Science - II	3	0	0	3	5			RSN123 Russian I	3	0	0	3	5	
CHE325	Nanostructured Materials (Project I)	3	0	0	3	5			RSN124 Russian II	3	0	0	3	5	RSN123
CHE405	Biotechnology and Special Applications	3	0	0	3	5			JAP123 Japanese I	3	0	0	3	5	
CHE406	Bioinformatics for Engineers	3	0	0	3	5			JAP124 Japanese II	3	0	0	3	5	JAP123
CHE408	Special Topics in Chemical Engineering	3	0	0	3	5			ITA123 Italian I	3	0	0	3	5	
CHE409	Principles and Practice of Drug Development	3	0	0	3	5			ITA124 Italian II	3	0	0	3	5	ITA123
CHE414	Drug Design (Project I)	3	0	0	3	5									
CHE416	Protein Engineering for Chemical Engineers	3	0	0	3	5									
CHE446	Material Science and Engineering	3	0	0	3	5									
CHE447	Catalysis and Catalytic Processes (Project I)	3	0	0	3	5									
CHE448	Instrumental Analysis (Project II)	3	0	0	3	5									
CHE449	Engineering Thermodynamics	3	0	0	3	5	CHE204								
CHE450	Energy Management	3	0	0	3	5									
CHE451	Water Treatment Technology	3	0	0	3	5									
CHE453	Chemical Technology (Project I)	3	0	0	3	5									
CHE455	Gas Purification Technology	3	0	0	3	5									
CHE457	Recycling Technology	3	0	0	3	5									
CHE461	Petroleum Refinery Engineering	3	0	0	3	5									
CHE462	Natural Gas Engineering (Project II)	3	0	0	3	5									
CHE463	Petrochemical Technology	3	0	0	3	5									
CHE465	Photocatalysis	3	0	0	3	5									
CHE471	Polymer Technology (Project I)	3	0	0	3	5									
CHE 480	Chemistry and Manufacture of Cement (Project I)	3	0	0	3	5		Project I and II							
CHE 481	Paint Technology	3	0	0	3	5									
CHE 482	Membrane Processes	3	0	0	3	5									
CHE 483	Microreaction Engineering	3	0	0	3	5									
CHE 484	Chemical Engineering Mathematics	3	0	0	3	5									
CHE491	Graduation Project*	2	2	0	3	5									

For Field Elective courses, any departmental elective course having appropriate credits from other departments of Faculty of Engineering and Natural Sciences can be elected.

For Social Elective courses any course having appropriate credits from other faculties can be elected.

**Important notes to be taken into consideration before registrations**

1) Both chemical and chemical & biological engineering students will follow the same program, starting from Fall 2020-2021.

2) Major and minor applications will only be accepted towards chemical engineering, starting from Fall 2020-2021.

Courses in Project I and Project II elective pools will be conducted project based

