

Üsküdar University
Faculty of Engineering and Natural Sciences
Department of Chemical Engineering
2023-2024 Academic Year
(100% English)

YEAR ONE															
1st Term							2nd Term								
Code	Course Name	T	P	L	C	ECTS	Prerequisite	Code	Course Name	T	P	L	C	ECTS	Prerequisite
PHYS101	Physics I*	3	0	2	4	6		PHYS102	Physics II*	3	0	2	4	6	
MATH101	Calculus I*	3	2	0	4	6		MATH102	Calculus II*	3	2	0	4	6	
CHEM101	General Chemistry I*	3	0	2	4	6		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	3	0	0	3	5		MBG154	General Biology*	2	0	2	3	4	
RCUL101	University Culture I*	0	2	0	1	1		RCUL102	University Culture II*	0	2	0	1	1	
TURK101	Turkish Language I	2	0	0	2	3		TURK102	Turkish Language II	2	0	0	2	3	
Total Credits		16	4	6	21	31		Total Credits		16	4	6	21	30	
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	2	0	2	3	4		CHE206	Fluid Mechanics and Applications	3	0	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	
ATA101	Principles of Atatürk and History of Turkish	2	0	0	2	3		ATA102	Principles of Atatürk and History of Turkish	2	0	0	2	3	
ENG101	English I	3	0	0	3	3		ENG102	English II	3	0	0	3	3	
XXXXXX	Social Elective I	3	0	0	3	5									
Total Credits		20	4	2	23	32		Total Credits		16	2	2	18	32	
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	Departmental Elective I (Project Based)	3	0	0	3	5		CHE392	Summer Practice II**	0	0	0	0	5	
XXXXXX	Social Elective II	3	0	0	3	5		CHEXXX	Departmental Elective II (Project Based)	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
CHE491	Graduation Project*	2	2	0	3	5		CHE492	Graduation Thesis*	1	8	0	5	5	CHE491
CHE403	Chemical Process Control	3	0	0	3	5		CHEXXX	Departmental Elective V	3	0	0	3	5	
CHE421	Mathematical Modeling for Chemical	3	0	0	3	5		CHEXXX	Departmental Elective VI	3	0	0	3	5	
CHE431	Chemical Engineering Laboratory II*	1	0	4	3	4		XXXXXX	Field Elective II	3	0	0	3	5	
CHEXXX	Departmental Elective III	3	0	0	3	5		XXXXXX	Field Elective III	3	0	0	3	5	
CHEXXX	Departmental Elective IV	3	0	0	3	5		OHS402	Occupational Health and Safety II	2	0	0	2	2	
OHS401	Occupational Health and Safety I	2	0	0	2	2									
Total Credits		17	2	4	20	31		Total Credits		15	8	0	19	27	

2023-2024	Total Course Credits for Graduation	155
	Total Theoretical Hours	129
	Total Applied Course hours	28
	Total Laboratory Hours	24
	Total Course ECTS for Graduation	241
	Total Elective Courses ECTS	60
	Elective Course Ratio	25%

* These courses are under the Applied Course status.

** These courses are under the Internship Course status.

Elective Course Pool															
Departmental Elective Courses							Elective Foreign Languages								
Code	Course Name	T	P	L	C	ECTS	Prerequisite	Code	Course Name	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	3	0	0	3	5	CHEM104	ARB124	Arabic II	3	0	0	3	5	ARB123
CHE303	Introduction to Nanotechnology	3	0	0	3	5		CHN123	Chinese I	3	0	0	3	5	
CHE305	Sustainable and Renewable Energy	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	3	0	0	3	5		ESP124	Spanish II	3	0	0	3	5	ESP123
CHE311	Transport Phenomena in Chemical	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 -	3	0	0	3	5		RSN123	Russian I	3	0	0	3	5	
CHE325	Nanostructured Materials	3	0	0	3	5		RSN124	Russian II	3	0	0	3	5	RSN123
CHE405	Biotechnology and Special	3	0	0	3	5									
CHE406	Bioinformatics for Engineers	3	0	0	3	5									
CHE408	Special Topics in Chemical	3	0	0	3	5									
CHE409	Principles and Practice of Drug	3	0	0	3	5									
CHE414	Drug Design	3	0	0	3	5									
CHE416	Protein Engineering for Chemical	3	0	0	3	5									
CHE433	Chemical Engineering Design - I	3	0	0	3	5									
CHE434	Chemical Engineering Design - II	3	0	0	3	5	CHE433								
CHE446	Material Science and Engineering	3	0	0	3	5									
CHE447	Catalysis and Catalytic Processes	3	0	0	3	5									
CHE448	Instrumental Analysis	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	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	3	0	0	3	5									
CHE463	Petrochemical Technology	3	0	0	3	5									
CHE465	Photocatalysis	3	0	0	3	5									
CHE471	Polymer Technology	3	0	0	3	5									
CHE480	Chemistry and Manufacture of	3	0	0	3	5									
CHE481	Paint Technology	3	0	0	3	5									
CHE482	Membrane Processes	3	0	0	3	5									
CHE483	Microreaction Engineering	3	0	0	3	5									
CHE484	Chemical Engineering Mathematics	3	0	0	3	5									

Important notes to be taken into consideration before registrations

- Both chemical and chemical & biological engineering students will follow the same program, starting from Fall 2020-2021.
- Major and minor applications will only be accepted towards chemical engineering, starting from Fall 2020-2021.