

1. Course Description

COURSE DESCRIPTION FORM	
Course Code and Title	KM463 BASIC PROCESSES
Course Semester	7
Catalog Description (Content) of the Course	Basic principles of industrial process such as nitration, halogenation, sulphation, and techniques used in this process. Examples for typical industrial process.
Main Textbook	Çataltaş, İ., Kimya Endüstrisinde Organik Prosesler, Cilt 1 ve 2, İnkılap ve Aka, 1980, İstanbul
Supporting Textbooks	<ul style="list-style-type: none"> Groggins, P.H., Unit Processes in Organic Synthesis, McGraw-Hill, 1958, Tokyo Faith, W.L. et al., Industrial Chemicals, John Wiley-Sons, 1966, USA Venkataraman, K., The Chemistry of Synthetic Dyes, Vol.1, Academic Press, 1952, New York Tüzün, C., Organik Kimya, Ankara Üniv.Fen Fak.Yayınları, 1975, Ankara Tüzün, C., Aromatik Bileşikler, Ankara Üniv.Fen Fak. Yayınları, 1975, Ankara Kirk Othmer, Encyclopedia of Chem.Tech., John Wiley-Sons, USA, 198
Course Credit (ECTS)	4
Prerequisites of the Course (Compulsory attendance should be indicated here.)	There is no prerequisite or co-requisite for this course
Type of the Course	Elective
Instruction Language of the Course	Turkish
Object and Target of the Course	To study some basic processes widely used in industry. To investigate effective parameters on the yield. To teach the last techniques.
Learning Outcomes of the Course	<p>-To gain knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems.</p> <p>-To identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.</p> <p>-To devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.</p> <p>-To work efficiently in intra-disciplinary teams.</p>
Mode of Delivery	The mode of delivery of this course is Face to face
Weekly Schedule of the Course	<p>1st Week: Introduction</p> <p>2nd Week: Nitration, its kinetics and thermodynamics, recent systems, typical processes</p> <p>3rd Week: Nitration, its kinetics and thermodynamics, recent systems, typical processes</p> <p>4th Week: Amination by reduction, reaction conditions, recent techniques and systems, typical processes</p> <p>5th Week: Amination by reduction, reaction conditions, recent techniques and systems, typical processes</p> <p>6th Week: Amination by ammonolysis, effective parameters, its</p>

	kinetics and thermodynamics, typical processes 7th Week: Amination by ammonolysis, effective parameters, its kinetics and thermodynamics, typical processes 8th Week: Amination by ammonolysis, effective parameters, its kinetics and thermodynamics, typical processes 9th Week: Halogenation, its thermodynamics, used systems, typical processes 10th Week: Halogenation, its thermodynamics, used systems, typical processes 11th Week: Sulfonation and sulfation, effective parameters, used systems, typical processes 12th Week: Sulfonation and sulfation, effective parameters, used systems, typical processes 13th Week: General information about alkylation and the other processes 14th Week: General information about alkylation and the other processes			
Educative Activities <i>(Credit will be determined based on the time given for these activities. Should be filled carefully.)</i>	Theoretical Study Hours of Course Per Week Mid-Term and Studying for Mid-Term Final and Studying for Final			
Assessment Criteria		Quantity	Total Contribution (%)	
	Midterm	2	60	
	Homework			
	Assignment			
	Projects			
	Practice			
	Quiz			
	Contribution of In-term Studies to Overall Grade			
	Contribution of Final Examination to Overall Grade	1	40	
	Attendance			
Workload of the Course	Activity	Total Week Count	Weekly Duration (in hour)	Total Workload in Semester
	Theoretical Study Hours of Course Per Week	14	3	42
	Mid-Term and Studying for Mid-Term	2	20	40
	Final and Studying for Final	1	15	15
	Total work load			97
	Total work load/25			3.88
	ECTS of the course			4

Course's Contribution To Program		Number	Program Outcomes	1	2	3	4	5	
		1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems.			X			
		2	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.			X			
		3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose. (Realistic constraints and conditions may include factors such as economic and environmental issues, sustainability, manufacturability, ethics, health, safety issues, and social and political issues, according to the nature of the design.)			X			

	4	Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.			X			
	5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating engineering problems.				X		
	6	Ability to work efficiently in intra-disciplinary teams.		X				
	7	Ability to work efficiently in multi-disciplinary teams;			X			
	8	Ability to work individually.			X			
	9	Ability to communicate effectively in Turkish, both orally and in writing; Ability to write effective reports and comprehend written reports, make effective presentations,			X			
	10	prepare design and production reports, give and receive clear and intelligible instructions.		X				
	11	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.				X		

	12	Awareness of professional and ethical responsibility.			X			
	13	Information about business life practices such as project management, risk management, and change management.			X			
	14	Information about awareness of entrepreneurship, innovation, and sustainable development.		X				
	15	Knowledge about contemporary issues and the global and societal effects of engineering practices on health, environment, and safety.	X					
	16	Knowledge about awareness of the legal consequences of engineering solutions.	X					
	17	Knowledge on standards used in engineering practice.						
	Name of Lecturer(s) and Contact Information		1. Prof. Dr. AtillaMurathan 2. Dr. Öğr. ÜyesiHüseyinArbağ					