1. Course Description

COURSE DESCRIPTION FORM	
Course Code and Title	CHE211 BASIC PRINCIPLES OF CHEMICAL ENGINEERING
Course Semester	3
Catalog Description (Content) of the Course	Basic concepts, dimensions and unit systems. Material and energy balances, applications to physical and chemical systems
Main Textbook	R.M. Felder, R.W. Rousseau " Elementary Principles of Chemical Processes", Third Edition John Wiley & Sons (2000).
Supporting Textbooks	Himmelblau, D. M., and Riggs, J. B. " Basic Principles and Calculations in Chemical Engineering,"6th Ed., Prentice Hall (1996).
Course Credit (ECTS)	6
Prerequisites of the Course (Compulsory attendance should be indicated here.)	There is no prerequisite or co-requisite for this course. 70% attendence is expected.
Type of the Course	Compulsory
Instruction Language of the Course	English
Object and Target of the Course	To comprehend the dimension and unit systems, to create the process flow diagram, to teach the laws of conservation of mass and energy, to calculate the relations between process inputs and outputs by applying mass and energy equations in processes with and without chemical reactions.
Learning Outcomes of the Course	1) Teaching basic concepts of chemical engineering and analysis methods. 2) To select and apply appropriate analysis and modeling methods to formulate and solve the problems encountered in chemical engineering processes. 3) Assimilation of mass and energy balance calculations used in the solution of chemical process industrial systems problems 4) To provide the ability to work effectively in disciplinary teams.
Mode of Delivery	This course will only be given by face-to-face .
Weekly Schedule of the Course	**1.Week** Introduction (Unit systems and unit translation, dimension analysis in equations) **2.Week** Introduction (Data analysis, process and process variables) **3.Week** Flow diagram drawing, basic selection, freedom degree analysis. **4.Week** Material balance in single unit systems **5.Week** Material balance in single unit systems **6.Week** Material balance in multi-unit systems **7.Week** Material balance in multi-unit systems **8.Week** Material Balamce in reaction containing systems

	9.Week Material Balamce in reaction containing systems **10.Week** Energy and energy balance **11.Week** Energy balance in non-reacting systems **12.Week** Energy balance in non-reacting systems **13.Week** Energy balance in reacting systems **14.Week** Energy balance in reacting systems
Educative Activities *(Credit will be determined based on the time given for these activities. Should be filled carefully.)*	Theoretical Study Hours of Course Per Week Homework Mid-Term and Studying for Mid-Term Final and Studying for Final

Assessment Criteria

	Quantity	Total Contribution (%)
Midterm	2	40
Homework	5	20
Assignment		
Projects		
Practice		
Quiz		
Contribution of In-term Studies to Overall Grade		60
Contribution of Final Examination to Overall Grade		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	4	56
Practicing Hours of Course Per Week	0	0	0
Reading	0	0	0
Homework	6	8	48
Designing and Applying Materials	0	0	0
Preparing Reports	0	0	0
Preparing Presentation	0	0	0
Presentation	0	0	0
Mid-Term and Studying for Mid-Term	2	15	30
Final and Studying for Final	1	15	15
Other	0	0	0
Total work load			149
Total work load/25			5.96

	ECTS of the course				6		
Course's Contribution To Program	Number	Program Outcomes	1	2	3	4	5
	1	Adequate knowledge in mathematic ertaining to the relevant discipline; nformation in these areas to model a					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.	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/English, 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	X				

		effects of engineering practices on health, environment, and safety.					
	16	Knowledge about awareness of the legal consequences of engineering solutions.	X				
	17	Knowledge on standards used in engineering practice.	X				
Name of Lecturer(s) and Contact Information	1. Prof. Dr. Nursel DİLSİZ ndilsiz@gazi.edu.tr 2. Prof.Dr. Çiğdem GÜLDÜR cguldur@gazi.edu.tr 3. Prof. Dr. Nurdan SARAÇOĞLU nsarac@gazi.edu.tr 4. Dr. Öğr. Üyesi Ceren HAKTANIR ceren.oktar@gazi.edu.tr						