1. **Course Description**

COURSE DESCRIPTION FORM	
Course Code and Title	CHE483 INTRODUCTION TO TRANSPORT PHENOMENA
Course Semester	7
Catalog Description (Content) of the Course	Transport laws and similarities. Transport phenomena at the molecular level, transport properties. Momentum, energy and mass shell balances and solving.
Main Textbook	Bird, R.B., Stewart, W.E., Lightfoot, E.N., Transport Phenomena, 2nd ed. John Wiley & Sons Inc., Newyork, 2002
Supporting Textbooks	•Thomson, W.J., Introduction to Transport Phenomena, Prentice Hall, 2000 •Beek, W.J., Muttzall, K.M.K., van Heuven, J.W, Transport Phenomena, John Wiley & Sons Inc., Newyork, 1999
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	English
Object and Target of the Course	1. Definition and classification of transport quantities 2. Definition and formulation of transport phenomena 3. Analysis of molecular transport in chemical engineering
Learning Outcomes of the Course	1.Mathematics, science and engineering knowledge 2.Ability to identify, formulate, and solve engineering problems 3.To meet the requirements of a system, component, or process skills
Mode of Delivery	The mode of delivery of this course is face to face
Weekly Schedule of the Course	1. Week: Introduction 2. Week : Molecular and convective transport 3. Week : Transport and transfer coefficients at the phase Momentum transfer Energy transfer Mass transfer 4. Week: Viscosity and the mechanism of momentum transport 5. Week:V iscosity and the mechanism of momentum transport 6. Week : Thermal conductivity and the mechanism of energy transport 7. Week : Steady state microscopic balances 8. Week : Steady state microscopic balances 9. Week : Momentum balances and boundary conditions 10. Week: Momentum balances and boundary conditions 11. Week: Energy balances,temperature distributions in solids and laminar flow 12. Week: Energy balances,temperature distributions in solids and laminar flow 13. Week: Laminar flow equation and the distribution of the mass concentration of the shell 14. Week: Laminar flow equation and the distribution of the mass concentration of the shell

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
Designing and Applying Materials
Mid-Term and Studying for Mid-Term
Final and Studying for Final

Assessment Criteria

	Quantity	Total Contribution (%)
Midterm	2	45
Homework	2	10
Assignment		
Projects		
Practice		
Quiz	2	5
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	3	42
Practicing Hours of Course Per Week			
Reading			
Searching in Internet and Library			
Designing and Applying Materials	2	3	6
Preparing Reports			
Preparing Presentation			
Presentation			
Mid-Term and Studying for Mid-Term	2	11	22
Final and Studying for Final	2	10	20
Other			
Total work load			90
Total work load/25			3.6
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				X	

		modeling methods for this purpose.					
	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.					
	6	Ability to work efficiently in intra-disciplinary teams.		X			
	7	Ability to work efficiently in multi-disciplinary teams					
	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 intelligiable instructions.					
	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.					
	14	Information about awareness of entrepreneurship, innovation, and sustainable development.					
	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 Iınformation	1. Prof.Dr.Göksel Özkan, gozkan@gazi.edu.tr						