MASS TRANSFER

1	Course Title:	MASS TRANSFER	
2	Course Code:	CEV2031	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	2	
6	Semester:	3	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. S.SIDDIK CİNDORUK	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi Mühendislik Fakültesi Çevre Mühendisliği Bölümü Tel: 0224 2942114	
17	Website:		
18	Objective of the Course:	The main objective is recognition of contaminants in air, water, and soil environments between different phases or within the same phase.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To have knowledge on establishment of mass balances
		2	To be able to know the theories about the transition of pollutants between different phases and to make calculations
		3	To have knowledge about the theories about the movements of pollutants in the same phase and to be able to make calculations
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21	Course Content:		
	Course Content:		
Week	Theoretical	Practice	
1	Mass Balance, Basic Definitions: Solubility, Steam Pressure, Partition Coefficients		

2	Equilibrium State in Closed Systems, Equilibrium State for Stable and Unstable Conditions in Open Systems	
3	Henry Coefficient's Determination in the Medium, Octanol-Water Coefficient	
4	Isotherm, Freundlich, Langmuir	
5	Applications Related to Langmuir Isotherms, Applications Related to Freundlich Isotherms	
6	Diffusion, Gas Diffusion, Liquid Diffusion	
7	Calculation of Flux with Mass Transfer Coefficient (KTK), Calculation of Flux with Diffusion Coefficient (DC)	
8	Flux Calculation with MTC, Flux Calculation with DC	
9	I. Fick's Law, II. Fick's Law Practices	
10	Midterm Exam	
11	Application of II. Fick's Law, Mass Transfer	
12	Mass Transfer in the Interface, Two Film Theory	
13	Universal Speed Profile, Gaussian Plume Model	
14	Application on Gaussian Plume Model, Application on Universal Velocity Profile	

22	Textbooks, References and/or Other	1.Environmental Chemodynamics, Movement of 3.Handbook on Atmospheric Diffusion, Hanna S.R.,
23	Assesment	

Activites	R	Number	Duration (hour)	Total Work Load (hour)
Theoretical		14	2.00	28.00
Practicals/Labs		0	0.00	0.00
Self-study and preperation		14	2.00	28.00
Homeworks		0	0.00	0.00
Projects		0	0.00	0.00
Midterm Exam	1	30.00		
Field Studies		0	0.00	0.00
Quiz	1	10.00		
Midterm exams	1	1	10.00	10.00
Home work project	0	0.00		
Others		0	0.00	0.00
Final Exam	1	60.00		
Final Exams	1	1	20.00	20.00
Total	6	100.00		
Total Work Load				86.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00		
Total work load/ 30 hr				2.87
ECTS Credit of the Course				3.00
Contribution of Final Exam to Success Grade		60.00		
Total		100.00		

Measurement and Evaluation Techniques Used in the Course	
24	**ECTS / WORK LOAD TABLE**

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	4	0	0	0	0	0	0	0	0	0	0	0	3	0	0

ÖK3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications					
Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**