MASS TRANSFER

1	Course Title:	MASS TRANSFER
2	Course Code:	CEV2100
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	4
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., Briggs, G.A., U.S. Department of Energy, 1982 ...

Activites	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
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Total Work Load			86.00
Total work load/ 30 hr			2.87
ECTS Credit of the Course			3.00

23	Assessment		R
Midterm Exam			1	30.00
Quiz			1	10.00
Home work project			0	0.00
Final Exam			1	60.00
Total			3	100.00

Contribution of Term (Year) Learning Activities to Success Grade	40.00
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**		