PARTICLE DYNAMICS

1	Course Title:	PARTICLE DYNAMICS
2	Course Code:	MAK6209
3	Type of Course:	Optional
4	Level of Course:	Third Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	5.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	-
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. ATAKAN AVCI
15	Course Lecturers:	Prof.Dr.Atakan Avcı
16	Contact information of the Course Coordinator:	atakan@uludag.edu.tr / 2242941954/ U.Ü. Müh. Mim. Fak. Mak. Müh. Bölümü BURSA
17	Website:	
18	Objective of the Course:	in a fluid medium under the influence of various forces observe the behavior of the particles and these particles, due to these forces, the separation process to provide information about the theoretical approach, the design.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	knows that the liquid and solid particles, and related concepts
	2	defines the size of the particle, knows the distribution of particle
	3	knows the relative motion gives particle forces, and implements
	4	knows the processes of particle separation and design
	5	recognizes that the processes of separation systems, knows the problems and analyzes
	6	
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21	Course Content:

Course Content:

Week	Theoretical	Practice
1	introduction, particle definition and properties, the concepts	
2	particle distributions, and size definitions	
3	fluid properties, viscous motion	

4	particle motion under the influence of gravity and particle separation processes	
5	impaction and impactors	
6	isokinetic sampling, centrifugation and cyclones	
7	browian motion and simple diffusion	
8	particle diffusion, thermophoresis	
9	particles charging mechanisms	
10	electrostatic controled aerosol kinetics, electrostatic precipitator	
11	condensation and evaporation phonemena	
12	evaporation and growth, extinction	
13	coagulation of particles, viable particles	
14	explosive aerosols	

22	Textbooks, References and/or Other Materials:	1. aerosol science and technology, P.C. Reist, McGraw-Hill, New York, 1993 2. Air pollution control engineering, L.K. Wang, N.C.Pereira, Y-T. Hung, Humana Press, New Jersey, 2004

23 Assesment

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	0	0.00
Final Exam	1	100.00
Total	1	100.00
Contribution of Term (Year) Learning Activities to Success Grade		0.00
Contribution of Final Exam to Success Grade		100.00
Total		100.00

Measurement and Evaluation Techniques Used in the Course

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	12	6.00	72.00
Homeworks	8	10.00	80.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	3.00	3.00
Total Work Load			197.00
Total work load/ 30 hr			6.57
ECTS Credit of the Course			5.00

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	5	4	5	5	4	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0
ÖK3	4	4	4	5	4	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	4	4	3	4	0	0	0	0	0	0	0	0	0	0	0

ÖK5	5	4	4	3	4	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**