ADVANCED CERAMIC MATERIALS

1	Course Title:	ADVANCED CERAMIC MATERIALS
2	Course Code:	MAK5212
3	Type of Course:	Optional
4	Level of Course:	Second Cycle
5	Year of Study:	1
6	Semester:	2
7	ECTS Credits Allocated:	6.00
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. AGAH UĞUZ
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	uguz@uludag.edu.tr 0224-2941966 Uludağ Üniv. Mühendislik Fak. Görükle Bursa
17	Website:	
18	Objective of the Course:	Production of Ceramic Powders. Forming Ceramic Products: Slip Casting, Injection, Extrusion, Strip Casting, Dry Pressing, Isostatic Pressing, Hot Press, Drying of Ceramic Products, Firing of Ceramic Products. Types of Ceramics: Oxide Ceramics, Non-Oxide Ceramics, Advanced Technology Ceramics, Bioceramics, Superconducting Ceramics, Fiber Optics, Ceramic Coating.
19	Contribution of the Course to Professional Development:	Have knowledge about Ceramic Powders, Ceramic Products and Advanced Technology Ceramics.
20	Learning Outcomes:	
	1	Learning the production of ceramic powders.
	2	Learning the types of forming ceramic products.
	3	Learning of ceramic types.
	4	Learning advanced technology ceramic types.
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Introduction to Ceramics	
2	Traditional Ceramics-1	
3	Traditional Ceramics-2	
4	Ceramic Crystal Structures-1	

5	Ceramic Crystal Structures-2	
6	Ceramic Production Methods	
7	Advanced Ceramics Production Methods	
8	Drying and sintering of Advanced Ceramics. Sintering Mechanisms	
9	Applications of addvanced ceramics.	
10	Oxide Ceramics. Alumina, zirconia, magnesia, etc.	
11	Non oxide Advanced ceramics. BN, SiC, B4C, etc.	
12	Graphite and Diamond.	
13	Electrical and Electronic Ceramics	
14	Superconductors	

22	Textbooks, References and/or Other Materials:	
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	0	0.00
Total	0	0.00
Contribution of Term (Year) Learning Activities to Success Grade		0.00
Contribution of Final Exam to Success Grade		0.00
Total		0.00
Measurement and Evaluation Techniques Used in the Course		Relative Evaluation

24 ECTS / WORK LOAD TABLE

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	14	2.00	28.00
Homeworks	14	5.00	70.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	5	8.00	40.00
Final Exams	0	1.00	0.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

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	4	2	2	3	4	3	3	3	3	2	4	5	3	3	3	3
ÖK2	3	4	3	3	4	4	2	3	4	4	5	4	4	3	3	2
ÖK3	3	3	4	4	3	4	4	3	3	3	4	4	5	5	3	3
ÖK4	4	4	3	5	3	5	5	4	3	4	3	3	2	4	4	2
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	**1 very low**		**2 low**			**3 Medium**			**4 High**			**5 Very High**				