ALGEBRAIC TOPOLOGY I

1	Course Title:	ALGEBRAIC TOPOLOGY I	
2	Course Code:	MAT4077	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	7	
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:	none	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. OSMAN BİZİM	
15	Course Lecturers:	Prof. Dr. Osman Bizim	
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi, Fen-Edebiyat Fakültesi Matematik Bölümü, Görükle Bursa-TÜRKİYE 0 224 294 17 50 / obizim@uludag.edu.tr	
17	Website:		
18	Objective of the Course:	The aim of this course to give the basic principals of algebraic topology.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Learns topological groups and their properties.
		2	Learns group action on a space.
		3	Learns Brower-fixed point theorem and its applications.
		4	Learns categories and functors.
		5	Learns the path, the path-connected topological spaces and local path connected topological spaces.
		6	Learns the basic concepts of algebraic toplogy.
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Topological Groups and their properties	
2	The acts of a group on a topological group and its properties	
3	The Brower-fixed point theorem and its applications	
4	Categories	

5	Functors	
6	The path in the topological spaces and their properties	
7	The connected and path-connected topological spaces and the relations between them	
8	The local path connected topological spaces and its applications	
9	Two dimensional manifolds and their properties	
10	Orientable and nonorientable surfaces and their properties	
11	Connected two dimensional manifolds and their properties	
12	The classification theorem of compact surfaces and their properties	
13	Triangulation of compact surfaces	
14	The Euler caracteristic of surfaces	

22	Textbooks, References and/or Other Materials:	1. W. S. Massey, A Basic Course in Algebraic Toplogy, Springer-Verlag, 1991. 2. M.J. Greenberg, J.R. Harper, Algebraic Topolgy, A First Course, Addison-Wesley, 1981. 3. J. Munkres, Topology, Prentice-Hill, 2.Ed. 2000.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	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**

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	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	20.00	20.00
Others	14	2.00	28.00
Final Exams	1	32.00	32.00
Total Work Load			150.00
Total work load/ 30 hr			5.00
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	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK2	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK3	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK4	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK5	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK6	5	5	5	5	5	5	5	5	5	5	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**