DIFFERANTIAL GEOMETRY II

1	Course Title:	DIFFERANTIAL GEOMETRY II	
2	Course Code:	MAT3016	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	3	
6	Semester:	6	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	2.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	MAT 2013 Analytic Geometry I , MAT2014 Analytic Geometry II and MAT3015 Differential Geometry I	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. Kadri Arslan	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	arslan@uludag.edu.tr (0 224) 294 17 75 Uludağ Üniversitesi, Fen-Edebiyat Fakültesi, Matematik Bölümü	
17	Website:		
18	Objective of the Course:	The purpose of this course, graduate level students to teach the basic concepts of differential geometry. The student was identified with the Euclidean space and after that it is introduced the surface theory and the concept of surface types in this space. In addition, the concept of the surface has been handled and the tangent and normal vector on the surfaces, forms, topological properties of surfaces and surface ransformations are introduced. Curvatures of surfaces with the help of the calculation aim to understanding the geometric meaning of the surfaces.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	He/She defines the basic concepts of the patchs in Rn.
		2	He/She defines the concepts of the surface in R3.
		3	He/She makes a contact with regular patches and surfaces.
		4	He/She defines a mappings on the surface.
		5	He/She characterizes the topological properties of surfaces.
		6	He/She classifies the surfaces with the help of Gaussian curvature of surfaces.
		7	He/She formulated with the help of the mean curvature vector of the mean curvature of the surfaces.
		8	He/She classifies curves on surfaces.
		9	He/She characterizse the normal curvature of the surface with the help of the shape operator.
		10	He/She defines and characterizes the types of surface
21	Course Content:		

	Course Content:	
Week	Theoretical	Practice
1	Patchs in the Rn, regular patch and the surface are defined.	Some examples of a patch are given
2	Calculations of the patch and examples of patches are handled.	Some examples of a surface are given
3	Tangent and normal vectors and differentiable functions are analyzed.	Some examples of a tangent and normal vectors are given
4	Differential forms on surfaces are exprressed.	Some examples of a differentiable forms are given
5	Mapping on the surfaces is given. Derivative transformation, transformations of the lower star and top stars are examined.	Some examples of a derivative transformation are given
6	Focuses on issues of integration of forms and topological properties of surfaces.	Some examples of a transformations of the lower star and top stars are given
7	Repeating courses and midterm exam	Some examples of surfaces are considered
8	Shape operator and the normal curvature of the surfaces are considered.	Some examples of shape operator are given
9	Gaussian and mean curvatures of the surfaces are treated with the definition and basic theorems about them.	Some examples of normal curvature are given
10	computation techniques of Gaussian and mean curvature are given.	Some examples of Gaussian and mean curvature are given
11	Some special curves on surfaces are	Some examples of curves on surfaces are given
13	Levi-Civita derivative and geodesic lines on	Some examples of Levi-Civita derivative are given
14	On the intrinsic geometry of surfaces examined	Some examples of geometry on surfaces are given
22	Textbooks, References and/or Other Materials:	O'Neill, B., Elementary Differential Geometry, Academic Press, New York, 1966 Surfaces". CRC Press, Boca Raton Ann Abor London Tokyo, 1993 Springer-Verlag London Limited, Great Britain, 2001.

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	10	4.00	40.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	2.00	2.00
Others	2	40.00	80.00
Final Exams	1	2.00	2.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

TERM LEARNING ACTIVITIES	NUMBE	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**

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			