



T.C.

ESKİŞEHİR OSMANGAZİ ÜNİVERSİTESİ

FACULTY OF SCIENCES

MATHEMATICS AND COMPUTER SCIENCES DEPARTMENT

COURSE INFORMATION FORM

Course Name	Course Code
Mathematics, Nature and Art I	

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
7	2	2	-	6

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
x				

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	In this course, the theory of curves will be examined, and simultaneously, the applications of mathematics to various disciplines will be investigated.
Short Course Content	The theory of curves helps us understand how mathematics is applied across different fields

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Questions related to the concept of curves will be addressed.	1,2,3,4,5	1,2,5,10,13	A, D
2 Covariant derivatives will be studied.	1,2,3,4,5	1,2,5,10,13	A, D
3 Helices will be studied. The concept of involutes will be exploredApplications of curves in Maple will be taught.	1,2,3,4,5	1,2,5,10,13	A, D
4 Evolutes will be learned. Bertand curves will be examined.	1,2,3,4,5	1,2,5,10,13	A, D
5 Applications of mathematics to other disciplines will be researched.	1,2,3,4,5	1,2,5,10,13	A, D
6 A new project topic will be developed using the learned concepts.	1,2,3,4,5	1,2,5,10,13	A, D

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Diferential Geometry, Barret O'Neill
Supporting References	Anne Burns, Gemetry and Nature . Maria Mannone , Mathematics, Nature and art.
Necessary Course Material	

Course Schedule	
1	Derivative of a vector field
2	Covariant derivative
3	Frenet Formulas
4	Helices
5	Involute
6	Project work
7	Examples
8	Mid-Term Exam
9	Evolut
10	Bertrand curves
11	Applications of curves in Maple
12	Review of articles on mathematics related to nature and art
13	Review of articles on mathematics related to nature and art
14	Project work
15	Project work
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)	14	4	56
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1		
Studying for Mid-Term Exam			
Final Exam	1		
Studying for Final Exam			
		Total workload	
		Total workload / 30	
		Course ECTS Credit	6

Evaluation	
Activity Type	%
Mid-term	50
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	Matematik ve ilgili disiplinler ilişkisini anlama becerisi	4
2	Matematik alanında uluslararası düzeyde teori ve uygulamada yeterli bilgi birikimine sahip olmak	4
3	Matematik ve ilgili alanlarda matematiksel problemleri tanımlama ve çözme becerisi	4
4	Tanımlanmış bir hedef doğrultusunda var olan problem sürecini çözme ve tasarlama becerisi	5
5	Matematik ve bilgisayar bilimlerinin yanı sıra diğer bilimsel, teknolojik ve çağdaş konular	5
6	Matematik ve ilgili disiplinler ilişkisini anlama becerisi	5
7	Matematik alanında uluslararası düzeyde teori ve uygulamada yeterli bilgi birikimine sahip olmak	5

LECTUTER(S)				
Prepared by	Prof.Dr Nevin Gürbüz			
Signature(s)				

Date: 24.07..2024