



T.C.

ESKİŞEHİR OSMANGAZİ ÜNİVERSİTESİ

FACULTY OF SCIENCES

MATHEMATICS AND COMPUTER SCIENCES DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Applied Mathematics	821616005

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
6	3	0	-	5

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

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	
Objectives of the Course	To give some basic concepts of special functions which we can face with, in applied mathematics.
Short Course Content	Laplace Transformations and their applications, Special functions, Special Polynomials and their applications, Inverse Laplace Transformations and their applications,

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Have sufficient knowledge in Applied Mathematics	1,2,10	1,2,5	A,C
2 Discovering areas of use by getting to know Special Functions	1,2,10	1,2,5	A,C
3 Develops ability to analyze and solve problems encountered	2,4,5	2,4,5,7	A,D
4 Analytical thinking skills develop and the ability to make individual and independent decisions develops.	12,13	5,7,10	A,D
5 Develops the ability to analyze and interpret data, apply interpretation to other data, and apply this information in a computer environment.	12,13	5,7,10	A,D
6			
7			
8			

*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	Uygulamalı Matematik (İ.Baki Yaşar)
Supporting References	<i>Special Functions for Engineers and Applied Mathematician (L. C. Andrews)</i>
Necessary Course Material	

Course Schedule	
1	Laplace Transformations of some functions.
2	Existence of Laplace Transformations and their properties
3	Methods to find Laplace Transformations
4	Inverse Laplace Transformations
5	Properties of Inverse Laplace Transformations
6	Applications of Inverse Laplace Transformations to ODEs
7	Applications of Inverse Laplace Transformations to PDEs
8	Mid-Term Exam
9	Special functions , Gamma function
10	Beta function
11	Laguerre polynomials and generating function
12	Chebyshev polynomials and generating function
13	Legendre polynomials and generating function
14	Hermite polynomials and generating function
15	Sturm–Liouville problems
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	3	42
Homework	5	3	15
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	2	2
Studying for Mid-Term Exam	1	20	20
Final Exam	1	2	2
Studying for Final Exam	1	30	30
	Total workload		
	Total workload / 30		
	Course ECTS Credit		5

Evaluation	
Activity Type	%
Mid-term	30
Quiz	
Homework	20
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	The ability to apply knowledges of Mathematics and Computer Sciences,	4
2	To have sufficient theoretical and practical knowledge of Mathematics at international level,	5
3	The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,	5
4	The skill to solve and design a problem process in accordance with a defined target,	5
5	Skills to analyze data, interpret and apply to other datum and using these data on computer,	4
6	The skill to use the modern techniques and computational tools needed for mathematical applications,	4
7	The skill to make team work within the discipline and interdisciplinary,	3
8	The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics and Computer Sciences,	3
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking,	4
10	The skill to have professional and ethical responsibility,	3
11	The skill to have consciousness for quality issues and scientific research,	3
12	The credence of necessity of life-long learning and ability to apply the formation long-life learning	3

LECTUTER(S)				
Prepared by	Prof. Dr. Filiz Taşcan			
Signature(s)				

Date:06.06.2024