

Department Department of Mathematics			Academic Year 2022-2023	Date 01/12/2022	
Course Unit Code MATH4114	Course Unit Title Computer Applications in Mathematics		Semester/Year Spring / 4	Number of ECTS Credits 3	
Language of Instruction	Turkish				
Type of Course Unit	Optional				
Prerequisites and co-requisites	-				
Address of course	-				
Local Credit	Theoretical	Practical	Laboratory	Presentation	Project
2	2	0	-	-	-
Name of Lecturers	Ass. Prof. Ebru CAVLAK ASLAN				
Assistants	-				

Course content	Overview of the Mathematica program. Basic use of the program and writing mathematical expressions in the language of the program and obtaining solutions. Overview of the Maple program. The use of the program, its purpose and the basic language of writing. General usage of Latex program. Giving the basic academic writing language in the program. Adding tables, pictures, figures. Relationship between Latex and Scientific Workplace programs. Transferring a transaction made in Maple to Latex
-----------------------	---

Weekly Detailed Course Contents	
Week	Topic
1	Introduction of Mathematica program and use of the program
2	Mathematical notation language and use of tabs
3	Limit, Derivative and Integration in Mathematics
4	Writing algebraic, differential and partial equations and obtaining their solutions
5	Giving shape drawing in different dimensions in the program.
6	Introduction and use of the Maple program
7	Spelling language and use of tabs in Maple
8	Limit, Derivative and Integration in Maple
9	General application
10	Writing algebraic, differential and partial equations in Maple and obtaining their solutions
11	Giving shape drawing in different dimensions in the program.
12	Writing mathematical expressions in Latex program. Also, adding tables, pictures and figures
13	The relationship between Latex and Scientific workplace and their conversion to each other
14	A brief evaluation of the course content and topics

Course Resources	1. Fizik ve Mühendislikte Wolfram Mathematica: Gökhan TÜRECİ 2. Maple ve Maple ile Matematik: Doç Dr. Basri ÇELİK
-------------------------	--

Assessment Methods and Criteria	In-Term studies	Quantity	Percentage (%)
	Mid-Term Exams	1	40
	Quizzes	-	-
	Assignments	-	-
	Projects	-	-
	Term assignment	-	-
	Laboratory	-	-
	Other	-	-
	Final exam	1	60
On Assessment Methods and	A grade of success; is determined by using the relative evaluation system or the discretion of the instructor. In order to be able to evaluate the courses in which the relative evaluation system and the teaching staff member's discretion are applied, the final exam score of the student must be at least		

Criteria	YSAS. Students who fall below this score are considered to fail directly. For the courses that can not be evaluated with the relative evaluation system, the distribution of the final grade of the final grade and the letter grades which are the equivalents of the success grades are determined by the consent of the instructor who gives the lesson using the table prepared by the Senate with 100 points. A student who has received a grade AA, BA, BB, CB or CC grade is deemed to have completed that course. A student who has received one of the grade DC or DD grades is deemed to have fulfilled that course condition. In order for a student who takes DD and DC letters to be counted as successful, the GNO must be at least 2.00. A student who receives a graded FF grade is considered to have failed that course.
-----------------	--

Percentage of Course Category (%)	Mathematics and Basic Sciences	60
	Computer Sciences	40
	Programming Design	0
	Social sciences	0

Course Outcome	Students will have basic knowledge and usage information about the programs used in Mathematics.
Aims of the course	Writing mathematical expressions and solving problems with Mathematica and Maple. Obtaining basic academic writing knowledge with Latex
The way of processing course	Face to face

Relation of the course with program outcomes				
Learning outcomes		1	2	3
1	To have advanced theoretical and applied knowledge in a way to prioritize the scientific approach supported by textbooks containing up-to-date information in the field, application tools and other resources			X
2	Adapting and transferring the knowledge gained in the field to secondary education		X	
3	Ability to independently carry out an advanced study in the field			
4	Be aware of the necessity of lifelong learning and continuously improve their professional knowledge and skills.			
5	Using a foreign language at least at the European Language Portfolio B1 General Level, following the information in the field and being able to communicate with colleagues			
6	To be able to use information and communication technologies together with computer software at minimum advanced level of European computer license required by the field.			
7	Have the ability to make oral and written presentation in native language			
8	Having the ability to understand spoken English and use English at reading level			
9	To have the ability to assimilate mathematical concepts and understand the relationships between them, to recognize different aspects of the same concepts and relationships			
10	To have the ability to define and formulate the relationships between items in non-mathematical disciplines in the language of mathematics.			
11	To have the ability to use mathematical knowledge in different problems			
12	Having the ability to develop computer programs using mathematical knowledge		X	
Contribution of the course: 1:No 2:Partially 3:Completely				

Preparer: Ass. Prof. Ebru CAVLAK ASLAN
Preparation date: 01/12/2022