

Department Department of Mathematics			Academic Year 2022-2023	Date 01/12/2022	
Course Unit Code MATH2111	Course Unit Title Introduction to Summability Theory		Semester/Year Fall/ 2	Number of ECTS Credits 4	
Language of Instruction	Turkish				
Type of Course Unit	Elective				
Prerequisites and co-requisites	-				
Address of course	-				
Local Credit	Theoretical	Practice	Laboratory	Presentation	Project
2	2	0	-	-	-
Name of Lecturers	Professor Yavuz ALTIN				
Assistants	-				

Course content	Sequences, subsequences and Limsup, Liminf, Cauchy Series and their properties, Convergence and Divergence of Series, Inequalities, Some Sequence Spaces and Metrics of sequence spaces, Lower and Upper Semi Continuous Functions, Category and Uniform Boundary Principle, Normed Linear Spaces, Seminormed and Paranormed Spaces, Banach-Steinhaus Theorem, Matrix Transformations in Sequence Spaces, Matrix Transformations in Sequence spaces, Silverman-Toeplitz Theorem, Schur and Kojima-Schur theorems.
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Weekly Detailed Course Contents	
Week	Topic
1	Sequences, subsequences and limsup, liminf
2	Cauchy series and their properties
3	Convergence and divergence of series
4	Inequalities
5	Some sequence spaces and metrics of sequence spaces
6	Lower and upper semi continuous functions
7	Category and uniform boundary principle
8	Normed linear spaces
9	General application
10	Seminormed and paranormed spaces
11	Banach-Steinhaus theorem
12	Matrix transformations in sequence spaces
13	Matrix transformations in sequence spaces, Silverman-Toeplitz theorem, Schur and Kojima-Schur theorems
14	A brief evaluation of the course content and topics

Course Resources	J. Boos, Classical and Modern Methods in Summability 2- R.E. Powell and S.M. Shah, Summability Theory and Applications 3- Petterson, Regular Matrix transformation
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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 Criteria	A grade of success; the relative evaluation system or the discretion of the instructor. In order to be taken into consideration in the courses in which the relative evaluation system and teaching staff's discretion are applied, the final exam score of the student must be at least 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 letter grades of the success grades are determined by the consent of the instructor teaching the table by 100 points by the Senate, using the distribution of the raw success grades at the end of the semester. 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	100
	Computer Sciences	0
	Programming Design	0
	Social sciences	0

Course Outcome	Students have basic knowledge about the theory of summation.
Aims of the course	1. To give students basic concepts and theorems related to collecting theory. 2. To provide students with technical information that is relevant to summation theory and which can produce the most appropriate solution for the problems requiring solving.
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			
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			X
10	To have the ability to define and formulate the relationships between items in non-mathematical disciplines in the language of mathematics.			X
11	To have the ability to use mathematical knowledge in different problems			
12	Having the ability to develop computer programs using mathematical knowledge			
Contribution of the course: 1:No 2:Partially 3:Completely				

Preparer: Dr. Hatice ASLAN

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