Tarih: 23 Ağustos 2025 20:59

Department of Mathematics Education / Department of Mathematics and Science Education /

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
İMEAE 503	CULTURE AND MATHEMATICS	2.00	0.00	0.00	2.00	4.00

Course Detail

Course Language	:	Turkish
Qualification Degree	:	Bachelor
Course Type	:	Optional
Preconditions	:	Not
Objectives of the Course	:	The aim of this course is to understand how mathematics has developed both as a response to practical needs and as a product of intellectual curiosity; to explore mathematical practices across different cultures, examine cultural differences in mathematics and the concept of ethnomathematics, and to gain the ability to design original curriculum activities that reflect this rich cultural perspective.
Course Contents	:	This course covers the relationship between mathematics and culture; the definition of mathematical concepts within their own cultural contexts; the mathematical thinking structures of different cultures; the fundamental principles of research in the field of ethnomathematics; the relationship between mathematics, anthropology, and linguistics; the importance of integrating ethnomathematical studies into classroom practices; and the design of classroom mathematics activities tailored to different cultural contexts.
Recommended or Required Reading	:	Throughout the course, lecture notes and various supplementary materials will serve as the primary resources. Visual and digital tools such as interactive whiteboards and projectors will be utilized to support the learning process. In order to understand and analyze the current content of the curriculum, the Türkiye Yüzyılı Maarif Modeli Mathematics Curriculum (2024) will be taken as a foundational reference. To strengthen the theoretical framework, D'Ambrosio's (2001) Ethnomathematics: Link Between Traditions and Modernity is recommended as a key reference. However, considering the cultural context and educational framework of Türkiye, the book Mathematics and Culture: Culturally Contextualized Mathematics Activities, edited by Yığ (2023), will be adopted as the main course textbook. In addition to these, up-to-date academic publications, scholarly articles, and national/international education reports on mathematics education will be recommended as supporting materials. Recommended References: (1) Ministry of National Education (MoNE) (2024). Türkiye Yüzyılı Maarif Modeli Mathematics Curriculum. Ankara: Board of Education. (2) D'Ambrosio, U. (2001). Ethnomathematics: Link Between Traditions and Modernity. Rotterdam: Sense Publishing. (3) Fasheh, M. (1997). Mathematics, Culture and Authority. New York: State University of New York Press. (4) National Council of Teachers of Mathematics (NCTM) (2000). Principles and Standards for School Mathematics. Reston, VA: NCTM Publications. (5) Ministry of National Education (MoNE) (2018). Mathematics Curriculum (Grades 1–8). Ankara: Board of Education. (6) Yığ, K. G. (Ed.) (2023). Mathematics and Culture: Culturally Contextualized Mathematics Activities. Ankara: Anı Publishing. (7) Gay, J. & Cole, M. (1967). The New Mathematics and an Old Culture: A Study of Learning Among the Kpelle in Liberia. New York: Holt, Rinehart and Winston.
Planned Learning Activities and Teaching Methods	:	This course aims to provide students with an interdisciplinary perspective by exploring the multifaceted relationship between mathematics and culture. It examines how mathematics has developed throughout history both as a response to practical needs and as a product of intellectual inquiry, and how mathematical concepts take shape within different cultural contexts. The course includes comparative analyses of mathematical thought structures, number systems, measurement methods, pattern usage, and problem-solving approaches across diverse cultures. It introduces the fundamental principles of ethnomathematics research and explains the connections between mathematics, anthropology, and linguistics. Within this framework, the importance of incorporating ethnomathematical practices into classroom activities is emphasized, and the process of designing mathematics activities appropriate to different cultural contexts is supported through practical examples. Students are expected to develop culturally responsive and locally relevant mathematics activities that encourage multidimensional mathematical thinking. Throughout the course, a variety of instructional methods will be used, including lectures, discussions, structured group work, question-and-answer sessions, brainstorming, problem-solving, academic literature reviews, and collaborative learning strategies.
Recommended Optional Programme Components	:	Active student participation should be encouraged throughout the course; therefore, classroom discussions, group work, presentations, and project-based assignments should be included in the assessment process. Students are expected to come to class prepared by reviewing assigned readings in advance, exploring relevant academic sources, and researching mathematical examples from their own cultural contexts to share in class. Sharing local practices will help develop a multicultural perspective and promote deeper, more contextualized learning. Instructional materials used in the course should reflect cultural diversity, and the learning process should be supported with digital content, interactive tools, and concrete materials. The mathematics activity designs developed by students should be evaluated not only based on theoretical knowledge but also on their practical applicability. In addition, students should be encouraged to follow the current literature on ethnomathematics, and activities that foster interdisciplinary thinking should be incorporated into the course.
Course Instructors	:	Doç. Dr. Deniz Kaya
Instructor's Assistants	:	There is no teaching assistant assigned for this course.
Presentation Of Course	:	The course will be conducted using student-centered and interactive teaching methods. Designed to explore the multifaceted relationship between mathematics and culture, the content will be supported through various instructional techniques such as lectures, discussions, question-and-answer sessions, group work, problem-solving, and brainstorming activities. Students will have the opportunity to define mathematical concepts within different cultural contexts, examine the mathematical thinking structures of various societies, and evaluate how these structures can be reflected in classroom practices. The course will cover the fundamental principles of current research in the field of ethnomathematics and will explore the interdisciplinary connections between mathematics, anthropology, and linguistics. Students will be expected to design culturally responsive classroom mathematics activities, present their work, and refine their designs based on peer and instructor feedback. The learning process will be enriched through academic readings, analysis of cultural examples, hands-on activity development, and student presentations.
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Course Outcomes

Upon the completion of this course a student :

1 Understands the relationship between mathematics and culture.

2 Can explain how mathematical concepts have developed in different cultural contexts.

3 Can explain the mathematical thinking structures of different cultures.

4 Can design mathematics activities using perspectives from different cultures.

5 Explains the importance of language, anthropology, and logic in the development of mathematical thinking.

Preconditions

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS

Weekly Contents

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
1.Week	*Course introduction, syllabus review, and the relationship between mathematics and culture			*Before starting this week, students are expected to have a general understanding of basic mathematical concepts and the historical development of mathematics, as well as a basic awareness of social science concepts such as culture, society, language, and education. Reviewing the course syllabus in advance and reflecting on the question “Is mathematics universal, or does it also have culture-specific aspects?” is important for meaningful participation in class discussions. Additionally, students are encouraged to read and review the section of the course textbook related to "culture and activities" beforehand.	*In the first week, lecture, question-and-answer, and interactive discussion methods will be used to introduce the structure of the course and review the syllabus with students. To explore students’ expectations and prior knowledge regarding the topic of “the relationship between mathematics and culture,” brainstorming and open-ended group discussions will be conducted. Students will be encouraged to contribute examples from their own cultural backgrounds, and any questions about the structure of the course in the upcoming weeks will be addressed.	Ö.Ç.1 Ö.Ç.2 Ö.Ç.1 Ö.Ç.2 Ö.Ç.1 Ö.Ç.2
2.Week	*The development of mathematical concepts in different cultural contexts			*In order to participate effectively in this week’s session, students are expected to thoroughly review Chapter 2 of the course textbook, titled Effects on the Learning Area of Numbers, Operations, and Algebra. This chapter explores how various number systems (e.g., Roman, Mayan, Babylonian, Chinese, Hindu-Arabic), methods of performing operations (such as traditional addition or multiplication techniques), and early forms of algebraic thinking developed within specific cultural contexts. Students should aim to understand how these cultural differences influenced the evolution of fundamental mathematical concepts. Additionally, they are encouraged to research and bring examples related to number representations, computational practices, and symbolic meanings across different civilizations to enhance classroom discussions. Beyond reading the theoretical content, students are also expected to reflect on and share culturally specific mathematical examples they have encountered, either historically or in contemporary contexts.	*This week’s session will employ a variety of instructional methods such as lectures, visual presentations, group discussions, case analysis, and culturally comparative activities to explore how mathematical concepts have developed in different cultural environments. Students will examine examples of number systems, calculation methods, and algebraic reasoning from various civilizations and engage in group discussions to compare their similarities and differences. Bringing culturally rooted mathematical examples into the classroom will support students in developing a culturally responsive perspective. An interactive learning environment will be fostered, encouraging students to design and present their own activities based on cultural observations. The learning experience will be enriched through the use of digital tools, historical visuals, and interactive materials.	Ö.Ç.2 Ö.Ç.3 Ö.Ç.2 Ö.Ç.3
3.Week	*The importance of the concepts of theorem, proof, and problem solving in mathematics within a cultural context			*For this week, students are expected to review the fundamental roles of theorem, proof, and problem solving in mathematics and conduct a brief literature search on how these concepts have emerged historically. Additionally, researching examples of how different cultures approach mathematical proof and problem solving will enrich class discussions. Reading the relevant sections of the course textbook that address these themes is essential for understanding these concepts within a cultural context.	*This week, the concepts of theorem, proof, and problem solving will be explored through lectures, discussions, case studies, group work, and culturally comparative activities. Students will examine different civilizations’ approaches to proof and problem solving, working on both classical and culturally rooted problems to evaluate the cultural influences on these concepts. In this interactive learning environment, students will be encouraged to share problem-solving approaches from their own cultural backgrounds and to interpret the idea of proof through various cultural perspectives. The course will be enriched with digital content, historical documents, and visual materials that support the cultural and conceptual understanding of the topics.	Ö.Ç.1 Ö.Ç.2 Ö.Ç.1 Ö.Ç.2 Ö.Ç.1 Ö.Ç.2

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
4.Week	*Mathematical thinking structures of different cultures (Babylonian, Ancient Egyptian, Ancient Chinese, etc.)			*To prepare for this week, students are expected to acquire background knowledge about the historical and cultural characteristics of civilizations such as Babylon, Ancient Egypt, and Ancient China, and to conduct preliminary readings on how mathematical thinking developed within these societies. Focus should be placed on number systems, measurement tools, computational methods, and the use of mathematics in everyday life. In this context, the course textbook's section titled "Culture and Activities in Mathematics Education" should be read carefully, with attention given to culturally specific mathematical practices that can be shared in class. Additionally, students are encouraged to review D'Ambrosio's (2001) Ethnomathematics: Link Between Traditions and Modernity to further explore how different cultural frameworks have shaped mathematical reasoning. These readings will help students enhance their ability to evaluate mathematics through a culturally diverse lens.	*In this week's course, a combination of lectures, comparative analysis, group work, use of visual materials, discussions, and student presentations will be used to explore the mathematical thinking structures of different cultures. Students will investigate number systems, measurement techniques, and problem-solving strategies from civilizations such as Babylon, Ancient Egypt, and Ancient China, and work in small groups to compare these systems with those of the modern era. Historical documents, visuals, digital presentations, and cultural examples will be integrated to concretize the content. Additionally, student-led presentations based on culturally grounded examples will support both individual engagement and awareness of cultural diversity in mathematics.	Ö.Ç.2 Ö.Ç.3 Ö.Ç.2 Ö.Ç.3 Ö.Ç.2 Ö.Ç.3
5.Week	*Mathematical thinking structures of different cultures (Ancient Greek, Islamic civilizations, etc.)			*To prepare for this week, students are expected to gain foundational knowledge about the scientific and philosophical traditions of Ancient Greek and Islamic civilizations, and to complete preliminary readings on how mathematical thinking developed within these cultures. Particular focus should be placed on the axiomatic systems, logical proof traditions, and emphasis on geometry in Ancient Greece; and on the contributions of Islamic civilizations to algebra, arithmetic, and trigonometry, as well as their integration of mathematics within a religious and intellectual framework. Reviewing the relevant sections of the course textbook, along with the related parts of D'Ambrosio's (2001) Ethnomathematics: Link Between Traditions and Modernity, is essential for evaluating these mathematical structures from a cultural perspective.	*This week's course will utilize a combination of lectures, comparative discussions, group work, text analysis, and student presentations to explore the mathematical thinking structures of Ancient Greek and Islamic civilizations. Students will examine mathematical approaches that emerged in these cultures—such as axiomatic systems, algebraic representations, and geometric proofs—both individually and collaboratively, making connections to modern mathematical thought. The course will incorporate historical documents, mathematical texts, visual materials, and short video content to support learning. Students will also be encouraged to interpret and critique these developments from their own cultural perspectives. Short presentations representing the contributions of different cultures to mathematics will be used to promote interdisciplinary understanding and cultural awareness.	Ö.Ç.2 Ö.Ç.3 Ö.Ç.2 Ö.Ç.3 Ö.Ç.2 Ö.Ç.3

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
6.Week	*Examination of research conducted in the field of ethnomathematics			*To prepare for this week, students are expected to study the theoretical foundations and historical evolution of the concept of ethnomathematics—particularly through Ubiratan D'Ambrosio's Ethnomathematics: Link Between Traditions and Modernity (2001), which outlines the field's definitions, aims, and key principles. In addition, Fasheh's Mathematics, Culture and Authority (1997) provides a critical perspective on the cultural, authoritative, and societal dimensions of mathematics, which students should consider when approaching the topic. Careful review of the relevant sections of the course textbook, along with examples of ethnomathematical research conducted in different cultural contexts, will support more meaningful engagement in class discussions. Furthermore, students are encouraged to select and summarize a specific ethnomathematics research study from an academic article or case report and be prepared to present it in class.	*This week's session will employ instructional methods such as lectures, academic article analysis, group discussions, case study reviews, and student presentations to foster a critical understanding of research in the field of ethnomathematics. Students will present their selected ethnomathematics studies in class and collaboratively analyze research conducted in various cultural contexts. Discussions based on foundational works such as D'Ambrosio (2001) and Fasheh (1997) will deepen conceptual understanding and highlight both local and global dimensions of ethnomathematical thinking. The course will emphasize interactive and participatory learning, aiming to enhance students' abilities to research, analyze, and evaluate culturally grounded mathematical practices both individually and collaboratively.	Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.1 Ö.Ç.2 Ö.Ç.3 Ö.Ç.1 Ö.Ç.2 Ö.Ç.3
7.Week	*The relationship between mathematics, anthropology, linguistics, and logic			*For this week, students are expected to recognize that mathematics is not only a technical field but also a culturally embedded domain, closely tied to human thinking, communication, and meaning-making processes. Readings should focus on the role of language in the formation and transmission of mathematical ideas, the cultural foundations of logic, and how anthropology interprets mathematical structures in different societies. Emphasis should be placed on number expressions in natural languages, the historical development of symbolic systems, and culturally shaped logical patterns. D'Ambrosio's (2001) Ethnomathematics: Link Between Traditions and Modernity serves as a core theoretical reference on the relationship between mathematics and culture. In addition, Gay and Cole's (1967) The New Mathematics and an Old Culture: A Study of Learning Among the Kpelle in Liberia provides a powerful case study on how culture, language, and learning intersect with mathematical understanding. Students should also review the relevant sections of the course textbook and bring examples of culturally specific counting systems or mathematical expression styles to enhance classroom discussions.	*This week's session will employ a blend of lectures, conceptual discussions, text analysis, group work, and example-based exploration to examine the intersections between mathematics, anthropology, linguistics, and logic. Students will engage with foundational texts such as D'Ambrosio's Ethnomathematics: Link Between Traditions and Modernity (2001) and Gay & Cole's The New Mathematics and an Old Culture (1967) to analyze how mathematical thinking is shaped by language and culture in different societies. Special focus will be given to how numbers are expressed in natural languages, culturally specific logical structures, and traditional modes of mathematical learning. These themes will be explored through collaborative group activities, and students will be asked to collect and present relevant cultural examples. The learning process will be supported with visual materials, short videos, concept maps, and interactive digital resources, fostering interdisciplinary engagement and the development of critical perspectives.	Ö.Ç.3 Ö.Ç.5 Ö.Ç.3 Ö.Ç.5 Ö.Ç.3 Ö.Ç.5
8.Week	*Midterm week			*Midterm week	*Midterm week	

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
9.Week	*Examining activities based on the perspectives of different cultures			*For this week, students are expected to examine examples of mathematics teaching activities developed in different cultures and assess the cultural values reflected in those practices. Special attention should be given to the chapter in the course textbook titled Activities Related to the Geometry and Measurement Learning Area, which offers insight into how visual patterns, symmetry, spatial perception, and measurement approaches vary across cultures. Students should analyze how these activities align with specific learning outcomes and prepare to share culturally rooted instructional examples from different countries or local communities. This preparation aims to raise awareness of how cultural diversity can be meaningfully integrated into classroom activities.	*This week, a combination of instructional strategies—including lectures, group work, activity analysis, cultural comparisons, and student presentations—will be used to evaluate how mathematics activities developed from different cultural perspectives relate to teaching and learning. Based on the Activities Related to the Geometry and Measurement Learning Area chapter of the course textbook, students will select a culture-specific activity and analyze its alignment with learning objectives and embedded cultural elements. Through collaborative comparisons, students will explore how similar learning outcomes can be addressed using diverse cultural approaches. Additionally, students will present their selected activities to the class, enhancing both their content knowledge and cultural awareness. The session will be enriched with visual materials, digital presentations, and hands-on activity examples.	Ö.Ç.4 Ö.Ç.5 Ö.Ç.4 Ö.Ç.5 Ö.Ç.4 Ö.Ç.5
10.Week	*Designing mathematics activities using perspectives from different cultures (numbers and operations learning area)			*For this week, students are expected to research number systems, calculation strategies, and the everyday use of numbers in various cultures. Special attention should be given to the chapter in the course textbook titled Activities Related to the Numbers and Operations Learning Area. This section should be reviewed carefully, focusing on culturally specific activity examples that illustrate number representations, operation strategies, and traditional calculation methods. Students are also expected to begin forming ideas for designing an original mathematics activity based on a selected cultural context and be prepared to share their initial concept in class. This preparation is important for understanding how cultural differences can be creatively integrated into mathematics instruction.	*This week, the course will focus on guiding students to design original mathematics activities that incorporate cultural understandings of numbers and operations. The lesson will include lectures, analysis of sample activities, group work, creative thinking workshops, and student presentations. Using the chapter Activities Related to the Numbers and Operations Learning Area from the course textbook, students will select a culturally rooted number representation or calculation method and develop an activity idea based on it. These ideas will be presented in small groups during class. The process will include discussions on how to integrate cultural elements into instructional design, aiming for activities that support both mathematical learning outcomes and cultural awareness. The session will be supported with interactive exercises, digital presentations, and feedback-based evaluation methods.	Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
11.Week	*Designing mathematics activities using perspectives from different cultures (Algebra learning area)			*For this week, students are expected to research the historical development of algebraic thinking and how it has taken shape in different cultures. Readings should focus particularly on contributions to algebra from Islamic civilizations and Ancient China, including methods, concepts, and approaches to problem solving. The chapter in the course textbook titled Activities Related to the Algebra Learning Area should be reviewed carefully, paying close attention to culturally based activity examples. Students should reflect on how cultural contexts influence concepts such as algebraic patterns, variables, equations, equality, and symbolization. Additionally, students are encouraged to prepare an idea for a culturally inspired algebra activity and be ready to discuss and refine their ideas in class.	*This week's session aims to guide students in designing original mathematics activities for the algebra learning area, using perspectives from different cultures. The course will include lectures, analysis of sample activities, group-based design workshops, cultural comparison discussions, and student presentations. Drawing inspiration from the Activities Related to the Algebra Learning Area chapter of the course textbook, students will create instructional activities that focus on algebraic concepts such as patterns, variables, equations, and equality within a chosen cultural context. These activities will be developed collaboratively and presented in class, followed by discussions on the integration of cultural content with mathematical learning objectives. The use of digital presentation tools, interactive materials, and peer feedback will support students' creative and critical thinking skills.	Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4
12.Week	*Designing mathematics activities using perspectives from different cultures (geometry learning area)			*For this week, students are expected to explore how geometric thinking has developed in different cultures and how geometric concepts appear in traditional arts, architecture, and everyday practices. Examples such as Islamic art, Chinese mosaics, African patterns, and spatial arrangements in indigenous communities should be examined with a focus on symmetry, reflection, rotation, similarity, area, and volume. The Activities Related to the Geometry and Measurement Learning Area chapter of the course textbook should be reviewed carefully. Students should prepare by selecting a culturally specific example and developing a geometry-based activity idea. It is also important that they consider how the activity aligns with specific mathematical learning objectives prior to class discussions.	*This week, students will focus on designing mathematics activities for the geometry learning area using perspectives from different cultures. The lesson will incorporate various instructional methods including lectures, case studies, analysis of cultural artifacts, group-based design tasks, and student presentations. Drawing inspiration from the Activities Related to the Geometry and Measurement Learning Area chapter of the course textbook, students will develop instructional activities based on geometric elements found in a chosen culture's art, architecture, or daily life. The emphasis will be on how cultural representations can be used to teach concepts such as shape recognition, symmetry, reflection, transformation, and spatial reasoning. Through presentations and peer feedback, students will engage in idea exchange and gain firsthand experience of how cultural diversity enriches instructional design. The class will be supported by digital tools, visual materials, and hands-on activity demonstrations.	Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
13.Week	*Designing mathematics activities using perspectives from different cultures (Measurement learning area)			*For this week, students are expected to explore historical measurement systems, units, and tools used by various cultures such as Ancient Egypt, Mesopotamia, China, Islamic civilizations, and indigenous peoples. They should analyze how cultural differences have shaped the concept of measurement—especially in terms of length, weight, time, and area—and how measurement practices evolved to meet societal needs. The Activities Related to the Geometry and Measurement Learning Area section of the course textbook will serve as the primary source for this topic. Students should review this section carefully and begin developing their own culturally inspired measurement activity ideas, considering how they align with specific learning outcomes.	*This week, students will be guided to design original mathematics activities based on measurement systems developed within the historical and social contexts of different cultures. The course will include lectures, analysis of historical documents and visual materials, group work, culture-based activity design workshops, and student presentations. Using the Activities Related to the Geometry and Measurement Learning Area section of the course textbook as a reference, students will examine a selected culture's approach to measurement and develop instructional activities rooted in that cultural context. Discussions will focus on how fundamental measurement concepts—such as length, weight, time, area, and volume—can be meaningfully connected to cultural practices. The learning process will be supported through digital presentations, group collaboration, and mutual feedback strategies to enhance both mathematical understanding and cultural awareness.	Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4
14.Week	*Designing mathematics activities using perspectives from different cultures (Data handling learning area)			*For this week, students are expected to examine how different cultures classify, organize, and interpret information. Examples from traditional societies—such as seasonal calendars, harvest tracking, hunting records, and agricultural data—should be explored to understand how data collection, categorization, and visualization processes were practiced. Students should also consider how data was used in culturally influenced decision-making and communication. The Activities Related to the Data Handling Learning Area section of the course textbook will be the main reference, and students are expected to review this part and begin preparing culturally grounded data-handling activities based on the examples provided.	*This week, students will aim to design original mathematics activities for the data handling learning area by drawing inspiration from data collection and interpretation practices across different cultures. The session will include lectures, analysis of cultural examples, data-based group work, chart and table creation workshops, activity design, and student presentations. Students will explore the Activities Related to the Data Handling Learning Area section of the course textbook and develop activities that incorporate processes such as data collection, frequency identification, graph construction, and interpretation within a selected cultural context. Emphasis will be placed on how cultural elements can be integrated into mathematical processes, the role of cultural diversity in data interpretation, and how these activities can foster analytical thinking. Interactive presentations, digital tools, and group feedback strategies will be employed to ensure active student participation.	Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
15.Week	*Designing mathematics activities using perspectives from different cultures (Probability learning area)			*For this week, students are expected to explore how the concept of probability is understood and used across different cultures. Special attention should be given to traditional societies' practices involving divination, games of chance, risk-taking behaviors, intuitive decision-making processes, and culturally rooted responses to uncertainty. These examples will help students analyze how cultural interpretations influence probabilistic thinking. Additionally, students are expected to review the Activities Related to the Probability Learning Area section of the course textbook in advance and use the examples provided to generate ideas for culturally grounded probability-based activities. Preparatory work should focus on understanding how uncertainty is evaluated in selected cultural contexts and how such situations can be modeled mathematically.	*In this week's session, students will aim to analyze concepts of uncertainty, chance, and probability within various cultural contexts and design culturally grounded mathematics activities related to the probability learning area. Teaching methods will include lectures, cultural case analysis, group discussions, activity design workshops, game-based learning, and student presentations. The Activities Related to the Probability Learning Area section of the course textbook will serve as the main resource. Drawing inspiration from this section, students will develop instructional activities based on traditional practices from selected cultures—such as divination methods, games of chance, or approaches to risk assessment—translating them into mathematical contexts. The focus will also be on how fundamental probability concepts like possible outcomes, frequency, and experimental probability can be linked to cultural elements. The learning process will be enriched through the use of digital tools, interactive group work, and student-centered practices.	Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4 Ö.Ç.3 Ö.Ç.4

Assesment Methods %

1 Ara Sınav : 40.000

2 Final : 0.000

3 Ödev : 60.000

ECTS Workload

Activities	Count	Time(Hour)	Sum of Workload
Vize	1	1.00	1.00
Ara Sınav Hazırlık	7	2.00	14.00
Ödev	7	2.00	14.00
Ders Öncesi Bireysel Çalışma	14	4.00	56.00
Derse Katılım	14	2.00	28.00
Rapor	7	2.00	14.00
		Total :	127.00
		Sum of Workload / 30 (Hour) :	4
		ECTS :	4.00

Program And OutcomeRelation

	P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O.
L.O. 1	4	4	4	0	0	0	0	0	0	4	4	0	0	0	0	4	0	4	0	0	0	0	0	4
L.O. 2	0	4	4	0	0	0	0	0	0	4	0	0	0	0	0	4	4	4	4	0	0	0	0	0
L.O. 3	0	4	0	0	0	4	0	0	0	4	0	4	0	0	0	0	4	0	4	0	4	0	0	0
L.O. 4	4	4	4	0	4	0	4	4	4	4	0	0	0	4	4	4	4	4	0	0	0	0	0	4
L.O. 5	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	5	5	4	0	0	4	0	0	4
Avarage	1.60	3.20	2.40	0	0.80	0.80	1.60	0.80	1.60	3.20	0.80	0.80	0	0.80	0.80	3.40	3.40	3.20	1.60	0	1.60	0	0	2.4

BEWARE OF PLAGIARISM! Please pay attention to proper academic citation rules and avoid plagiarism, an unethical and academically fraudulent behavior, when completing reports, assignments, or other academic works, and it is treated with the same disciplinary action as cheating in a classroom setting. It is imperative to refrain from presenting another person s ideas, language, expressions, or any other form of intellectual property as your own. Regardless of quality, your assignments/projects/research should reflect your original work. Perfection is not a requirement, and in case of any uncertainties regarding academic writing guidelines, you may seek clarification from your course instructor.

Engel Durumu/Uyarlama Talebi : Engel durumuna ilişkin herhangi bir uyarlama talebinde bulunmak isteyen öğrenciler, dersin öğretim elemanı ya da Nevsehir Engelli Öğrenci Birimi ile en kısa sürede iletişime geçmelidir.