

DST103 - BASIC MATHEMATICS AND LOGIC - Kozaklı Meslek Yüksekokulu - Veri Tabanı, Ağ Tasarımı ve Yönetimi Bölümü

General Info

Objectives of the Course

"To provide students with fundamental mathematical concepts and logical thinking skills, and to develop the ability to use these skills in health-related applications."

Course Contents

"Numbers and operations, algebraic expressions, equations, ratio and proportion, problems, sets, logical expressions, propositions, truth tables, comparisons, forms of reasoning, and the basic principles of logic."

Recommended or Required Reading

Bal, H. (2021). Temel Matematik ve Uygulamaları. Gazi Kitabevi.
Stewart, J. (2015). Calculus: Early Transcendentals. Cengage Learning.
Rosen, K. H. (2012). Discrete Mathematics and Its Applications. McGraw-Hill.
Altun, M. (2019). Mantık ve Matematiksel Düşünme. Alfa Yayınları.
Elçi, A. N. (Ed.), Bukova Güzel, E. (Ed.), Cantürk Günhan, B. (Ed.), & Ev Çimen, E. (Ed.) (Eds.). (2016). Temel Matematiksel Kavramlar ve Uygulamaları: Öğrenenler ve Öğretenler İçin (1. basım). Ankara: Pegem Akademi Yayıncılık
Yüksel, Y. (2017). Gelenekselden Moderne Mantıkta Önermeler ve Doğruluk Değerleri. İstanbul: Akademi Titez Yayınları.
Erdem, E. (Ed.). (2023). Mantıksal Akıl Yürütme (2. baskı). Ankara: Pegem Akademi Yayıncılık

Planned Learning Activities and Teaching Methods

"The course will be conducted through theoretical lectures, question-answer sessions, problem-solving activities, class discussions, group work, and practical exercises. Students will actively participate in the course through regular readings, problem-solving assignments, and short reports."

Recommended Optional Programme Components

Students are expected to attend classes regularly, complete the assigned readings before class, and review the weekly topics after class in order to ensure active participation.

Instructor's Assistants

There are no teaching assistants for this course.

Presentation Of Course

"The course will be delivered face-to-face, combining theoretical lectures with practical problem-solving activities."

Dersi Veren Öğretim Elemanları

Inst. Dr. Merve Nurlu

Program Outcomes

1. Defines and uses basic mathematical concepts.
2. Applies arithmetic and algebraic operations.
3. Develops logical thinking and problem-solving skills.
4. Uses mathematical knowledge in daily life and in the field of health.
5. Analyzes propositions and determines their truth values.

Weekly Contents

Order	PreparationInfo	Laboratory	TeachingMethods	Theoretical	Practise
1			lecture, brain storming, problem solving	Numbers and number sets"	
2			lecture, brainstorming and problem solving	Four operations and order of operations"	
3			lecture, brain storming, problem solving	Algebraic expressions and equations"	
4			lecture, brainstorming, problem solving	ratio, proportion and percentage calculations	
5			lecture, brain storming and problem solving	problems	
6			lecture, brain storming problem solving	sets, venn diagrams	
7			lecture, brain storming and problem solving	Logic and proposition	
9			lecture, brainstorming and problem solving	Truth tables	
10			lecture and brainstorming	Syllogism and types of inference	
11			lecture and brainstorming	reasoning	
12			lecture and brainstorming	Logic in everyday life	
13			lecture and group working	Sağlık alanında matematiksel uygulamalar	
14			lecture and group working	Sağlık alanında matematiksel uygulamalar	
15			beyin fırtınası and lecture	general review and assesment	

Workload

Activities	Number	PLEASE SELECT TWO DISTINCT LANGUAGES
Vize	1	1,00
Final	1	1,00
Derse Katılım	14	2,00
Ders Öncesi Bireysel Çalışma	14	1,00
Ders Sonrası Bireysel Çalışma	14	1,00
Küçük Grup Çalışması	1	5,00
Ara Sınav Hazırlık	1	5,00
Final Sınavı Hazırlık	1	6,00
Teorik Ders Anlatım	2	14,00

Assesments

Activities	Weight (%)
Ara Sınav	40,00
Final	60,00

Veri Tabanı, Ağ Tasarımı ve Yönetimi Bölümü / Dijital Sağlık Sistemleri Teknikerliği X Learning Outcome Relation

	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
L.O. 1	1									
L.O. 2										
L.O. 3										
L.O. 4										
L.O. 5										

Table :

- P.O. 1 :** Use and manage health informatics systems effectively.
- P.O. 2 :** Process medical data in accordance with confidentiality and ethical rules.
- P.O. 3 :** Install, maintain, and monitor digital systems used in healthcare institutions.
- P.O. 4 :** Apply information security protocols to ensure patient data protection.
- P.O. 5 :** Work effectively as part of a team in health technology environments.
- P.O. 6 :** Follow innovations and current technologies in the field and adopt lifelong learning.
- P.O. 7 :** Communicate effectively with healthcare staff and technical teams.
- P.O. 8 :** Possess basic medical knowledge and terminology and use medical terms correctly.
- P.O. 9 :** Recognize and effectively use software and hardware supporting healthcare services.
- P.O. 10 :** Act in accordance with professional ethics and quality standards.
- L.O. 1 :** Defines and uses basic mathematical concepts.
- L.O. 2 :** Applies arithmetic and algebraic operations.
- L.O. 3 :** Develops logical thinking and problem-solving skills.
- L.O. 4 :** Uses mathematical knowledge in daily life and in the field of health.
- L.O. 5 :** Analyzes propositions and determines their truth values.