Course Syllabus

Code - Course Title	**VBA106 - Discrete Mathematics**
Course Type	II. SEMESTER
Laboratory + Practice	2+0
ECTS	**5.0**
Language of Instruction	İngilizce
Course Type	Required Courses
Course Instructor(s)	DR. ÖĞR. ÜYESİ ÖNDER DORAK

Mode of Delivery	Face-to-face

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Logic and Proofs: Propositional logic	
Week - 2		Predicate logic and logical equivalence	
Week - 3		Mathematical proof techniques (induction, contradiction)	
Week - 4		Sets and Functions: Advanced set operations	
Week - 5		Cardinality and Relations	
Week - 6		Properties of injective and surjective functions	
Week - 7		Graph Theory: Graph representations and Trees	
Week - 8		Network flow models	
Week - 9		Shortest path algorithms	
Week - 10		Eulerian and Hamiltonian circuits	
Week - 11		Combinatorial Mathematics: Recurrence relations	
Week - 12		Generating functions	
Week - 13		Pigeonhole principle	
Week - 14		Application to algorithm analysis	

Learning Outcomes

#	Learning Outcome
1	Apply propositional logic and mathematical proofs
2	Perform advanced set operations and function analysis

Learning Outcomes

#	Learning Outcome
3	Analyze network flow models and shortest paths
4	Solve combinatorial math and recurrence relations

Sustainable Development Goals

No content has been provided.

Course Theme

No content has been provided.

AKTS Workload

Activity	Duration (Hour)	Count	Workload
Teorik Derse Katılım	0	0	0
Sınıf Dışı Çalışma (Ön Hazırlık & Pekiştirme Amaçlı)	0	0	0
Ödevler	0	0	0
Proje - Rapor - Sunum Hazırlama	0	0	0
Ara Sınav Hazırlığı (sınav süresi dahil)	0	0	0
Final Sınavı Hazırlığı (sınav süresi dahil)	0	0	0
Uygulama (Laboratuvar, Müzik/Enstrüman Uygulaması, Atölye/Saha Çalışması vb.)	0	0	0
Staj Uygulaması	0	0	0
		Calculated ECTS	**0**

Assessment Method and Passing Requirements

No content has been provided.