Course Syllabus

Code - Course Title	**BİL113U -**
Course Type	I. SEMESTER
Laboratory + Practice	0+0
ECTS	**5.0**
Language of Instruction	Türkçe
Course Type	Required Courses
Course Instructor(s)	LECTURER ÇİĞDEM ÖZBEK

Mode of Delivery	Distance Learning
Prerequisites	There is no prerequisite or co-requisite for this course.
Courses Recomended	YBS406UNEW TRENDS IN PROGRAMMING
Recommended Resources	BIL204UALGORITHMS; Internet resources such as books, live lessons, questions, etc. on eKampus (ecampus.anadolu.edu.tr)
Work Placement	No internship or practice.

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Algorithm Concept: Algorithm Definition, Algorithm Criteria, Criteria Determining Algorithm Efficiency; Algorithm Types: Purposes of Algorithm Types.	
Week - 2		Data Structure: The Concept of Data Structure, Classification of Data Structures; Simple Data Types: Properties of Simple Data Types; Complex Data Structures: Properties of Complex Data Structures.	
Week - 3		Computer Programs and Algorithms: The Relationship Between Program Design Process and Algorithm; Algorithm Design: Everyday Language, Pseudocode, Flow Chart, Converting Algorithm Expression to Other Formats.	
Week - 4		Decision Structures: Purpose of Decision Structures, If (if) Structure, If-else Structure, Switch Structure; Loops: Loop Usage Purpose, for Structure, while Structure, do-while Structure, Skipping Loop Step, Loop Termination.	
Week - 5		Midterm Exam Question Solution - 1	
Week - 6		Midterm Exam Question Solution - 2	
Week - 7		Midterm	
Week - 8		Algorithm Analysis: The Concept of Algorithm Analysis, Time Complexity, Area Complexity, Algorithm Best, Worst and Average Cases; Asymptotic Notation: The Concept of Asymptotic Notation, Determining the Asymptotic Representation of an Algorithm Given Time Complexity.	
Week - 9		Sorting Algorithms: Sorting Algorithms, Sorting Algorithms Runtimes; Search Algorithms: Sequential Search, Binary Search, Search Algorithms Runtimes.	

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 10		List Structures: Basic Functions of List Structures, Differences Between List Types, List Basic Operations; Tree Structures: Basic Functions and Components of Tree Structures, Differences Between Tree Types, Woodworking.	
Week - 11		Machine Learning Algorithms: Ability to Classify, Sample, Explain Machine Learning Evaluation Metrics; Genetic Algorithms: Basic Steps of a Genetic Algorithm, Areas where Genetic Algorithms are Used; Cryptographic Algorithms: Ability to Explain the Concept of a Cryptographic Algorithm, Types and Differences of Cryptographic Algorithms.	
Week - 12		Final Exam Question Solution - 1	
Week - 13		Final Exam Question Solution - 2	
Week - 14		Final Exam	

Learning Outcomes

#	Learning Outcome
1	Defines the concepts of algorithm and data structure.
2	Will be able to apply algorithm representation methods and iteration, decision structures.
3	Will be able to analyze algorithm, design sorting and search algorithms.
4	Will be able to implement list tree structures and current algorithm types.

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

AKTS Workload

Activity	Duration (Hour)	Count	Workload
		Calculated ECTS	**0**

Assessment Method and Passing Requirements

No content has been provided.

Assessment Method and Passing Requirements	Quamtity	Percentage (%)
1.Midterm Exam	1	30
Final Exam	1	70
	Sum (%)	**100**