2023-2024 Academic Year
List of Courses Offered in Foreign Language
2023-2024 Akademik Yılı
Yabancı Dilde Açılacak Dersler Listesi

Institute of Natural and Applied Sciences
Fen Bilimleri Enstitüsü

	Department *Bölüm*	**Course Code** *Ders Kodu*	**ECTS** *AKTS*	**Course Title** *Dersin Adı*	**Semester** *Dönem*	**Course Content** *Dersin İçeriği*	**Academic Staff** *Dersi Veren Öğretim Elemanı*	**Online Available** *Çevrimiçi*
1	Computer Engineering	CSE 5008	6	SCIENTIFIC PROGRAMMING	Bahar / Spring	The course will begin with an overview to programming techniques. Then, data analysis methods will be explained. The Matplotlib, a widely used library will be examined and data visualization methods will be explained. Programming examples and applications will be developed with Matlab and Phyton.	Dr.Öğr.Üyesi HÜSEYİN GÖKHAN AKÇAY	No
2	Computer Engineering	CSE 5010	6	DATA MINING	Bahar / Spring	The course is teaches basic concepts in data mining. Clustering/Classification and Association Analysis are main subjects. Data curation is the also included.	Prof.Dr. MELİH GÜNAY	No
3	Computer Engineering	CSE 5012	6	BIOINFORMATICS	Bahar / Spring	You'll master computer science and data science concepts applicable to the fields of genomics, microbiology, biotechnology, and biochemistry, including software and research methodologies.	Dr.Öğr. Üyesi ALPER ÖZCAN	No
4	Computer Engineering	CSE 5036	6	ADVANCED WEB PROGRAMMING	Bahar / Spring	Hands on learning of the most commonly used web development technologies for basic web applications including HTML, CSS, Javascript, PhP, CodeIgnator, JDBC, Client-Server Architecture.	Prof.Dr. ÜMİT DENİZ ULUŞAR	No
5	Computer Engineering	CSE 5040	6	DISTRIBUTED AND PARALLEL COMPUTING	Bahar / Spring	Analysis of parallel algorithms. Real and apparent parallelism. Parallel programming and parallel programming compilers. Message Passing Interface. Scheduling and performance analysis. Parallel computer topologies and applications with the hypercube architecture.	Dr.Öğr.Üyesi TANER DANIŞMAN	No
6	Computer Engineering	CSE 5048	6	IMAGE PROCESSING	Bahar / Spring	This course provides an intermediate level background to image analysis and computer vision for graduates. We will start with low-level vision (early processing) techniques such as binary image analysis, filtering, edge detection and texture analysis. Then, we will cover mid-level vision topics such as image segmentation and feature extraction in detail. Finally, we will do case studies on several applications such as image classification, object recognition, and deep learning.	Dr.Öğr.Üyesi MUSTAFA BERKAY YILMAZ	No
7	Computer Engineering	CSE 5058	6	ARTIFICIAL INTELLIGENCE	Bahar / Spring	Intelligent Agents, Solving Problems by Uninformed and Informed Search Methods, Constraint Satisfaction Problems, Adverserial Search, Markov Decission Process, Reinforcement Learning	Doç.Dr. ALPER BİLGE	No
8	Computer Engineering	CSE 5074	6	SOCIAL NETWORK ANALYSIS	Bahar / Spring	This course teaches students basic techniques to mine the online social networks (including social networks and social media). Detailed topics include three aspects: (1) Introduction to social network analysis and algorithms; (2) Online social network mining, and (3)Link prediction and information diffusion in social network.	Dr. Öğr. Üyesi ALPER ÖZCAN	No
9	Computer Engineering	CSE 7014	8	RECOMMENDER SYSTEMS	Bahar / Spring	Recommendation systems is a very active field in terms of both research and implementation. This course covers the basic principles of recommendation systems, with a particular focus on collaborative filtering (suggestions based on human behavior) and practical experience (a project).	Doç.Dr. ALPER BİLGE	No

10	Computer Engineering	CSE 7024	8	BLOCKCHAIN AND ITS APPLICATIONS	Bahar / Spring	How blockchain is used in cryptocurrencies, supply-chain management, e-voting, healthcare systems.	Dr.Öğr.Üyesi MURAT AK	No
11	Computer Engineering	CSE 7030	8	DEEP LEARNING	Bahar / Spring	History and therotical advanteges of the deep learning, basic learning algorithms and architectures for deep learning, regularization of distributed models, optimization techniques for training deep networks, convolutional networks, bacpropogating and recurrent networks, autoencoders and linear factor models, learning by demonstration, deep generative networks - Boltzman machines	Dr.Öğr.Üyesi HÜSEYİN GÖKHAN AKÇAY	No
12	Computer Engineering	CSE 7052	8	GRAPH THEORY	Bahar / Spring	This course provides a complete introduction to Graph Theory algorithms in computer science. Topics covered include: how to store and represent graphs on a computer; common graph theory problems seen in the wild; famous graph traversal algorithms (DFS & BFS); Dijkstra's shortest path algorithm (both the lazy and eager version); what a topological sort is, how to find one, and places it's used; learning about detecting negative cycles and finding shortest paths with the Bellman-Ford and Floyd-Warshall algorithms; discovering bridges and articulation points in graphs; understanding and detecting strongly connected components with Tarjan's algorithm, and finally solving the traveling salesman problem with dynamic programming.	Prof.Dr. ÜMİT DENİZ ULUŞAR	No