INFORMATION TECHNOLOGY
2023-2024 FALL
LIST OF AREA ELECTIVE (AE) COURSES

#	C.Code	Course Name	Ins.	Course Description
1	ITEC295	**Investigation of Computer Forensics**	ZEINAB JABBAR	The course focuses on the theoretical aspects of computer forensics and investigations as a profession, the basics of computer investigations are taught with the requirements needed for the investigation offices and laboratory. Forensic computing demands understanding the data acquisition, the processing of the crime and incident scenes. Different operating systems will be analyzed such as Windows, DOS systems, Mac and Linux for boot processes and file systems. The course also includes the technics used in the investigations of electronic mails, cell phone and mobile devices. Further tools and applications used for information gathering will be examined in the lab
2	ITEC323	**Introduction to Machine Language**	NAZİFE DİMİLİLER	Machine Learning field covers a vast collection of automated methods that improve their own performance by learning patterns from the data. In this undergraduate level class, students will get an introduction to machine learning concepts as well as methodologies, technologies, and algorithms used in machine learning. The material covered in class will be reinforced through practical applications. Topics covered: supervised learning, unsupervised learning, reinforcement learning and combining multiple learners.
3	ITEC420	**Framework Based Internet Applications**	SEYDA TURKMEN	This course focuses on development of Internet applications. Designing web sites/pages and developing database Internet applications will be covered throughout the semester. In order to eliminate tedious coding and to develop all these applications, ASP.NET with C# as the programming language will be used. As relational database management server which will be introduced during the semester, is addressed as MS Sql Server. The ASP.NET Web Site Administration Tool will also be covered as part of web sites with authentication, access rights and web sites ready for e-commerce among the semester.

| 4 | ITEC442 | **IoT and Cybersecurity** | BERAN TANSELOĞLU | The aim of this course is to express why cybersecurity is a societal imperative; analyze the tradeoffs of balancing key security properties like confidentiality, integrity, and availability; contrast the roles of prevention, deterrence, and detection mechanisms; document the role of formal methods in creating high assurance software and systems; express the differences between vulnerabilities, threats, and risk; analyze a security policy and/or procedure to show where it considers, or fails to consider, human factors; contrast encryption, digital signatures, and hash functions; document standards that apply to an organization's information security posture; contrast the internet of things with the web of things, with industrial internet, with pervasive computing, and with smart systems; illustrate ways to interface an IoT component to sensors and actuators; demonstrate several security issues and challenges of collaborative data acquisition in IoT; express the design and implementation issues related to ad hoc networks and contrast the difference between proactive, reactive and hybrid routing; express intelligent information discovery, retrieval, and mining on IoT and express tools that are using in designing IoT. |
| 5 | ITEC460 | **Introduction to Neural Networks** | AHMET RİZANER | This course is an introduction to neural networks with both theoretical and practical issues being considered. Upon completion of this course, the student should understand the main neural network architectures and learning algorithms and be able to apply neural networks to real classification problems. Topics covered include single layer perceptions, multi-layer perceptions, associative memory networks, discrete Hopfield networks, radial basis function networks and self-organizing networks. |