

Year:	2025-2026		
Course Name:	AING361	Artificial Intelligence in Medicine	
Lecturer Name:	Assoc. Prof. Dr. Adnan ACAN		
Date		Content of lesson	Detailed Content of lesson
29.09.25	Week1	Introduction	Problem definition, course objectives, assessment principles
06.10.25	Week2	Introduction to AI in Medicine	The need of AI in Medicine: Objectives and misconceptions
13.10.25	Week3	Introduction to AI	Definitions of intelligence, artificial intelligence, main research directions and subfields of interest in medicine.
20.10.25	Week4	Data Science and AI	Deficitions related to data science, data science and AI: common subfields and interests concerning medical data.
27.10.25	Week5	Healthcare Data and Databases	Data types, data types in medicine, healthcare data management and healthcare databases.
03.11.25	Week6	Macine and Deep Learning	Introduction to machine learning. Data mininf and knowledge discovery.
10.11.25	Week7	Macine and Deep Learning	Machine Learning versus Conventional programming. Machine learning workflow.Programming languages in biomedical data science.
17.11.25	Week8	First Assement	
24.11.25	Week9	Macine and Deep Learning	Supervised Learning, Unsupervised learning, Ensemble learning, Reinforcement learning.
01.12.25	Week10	Macine and Deep Learning	Neural networks and deep learning.
08.12.25	Week11	Macine and Deep Learning	Assesment of model performance
15.12.25	Week12	Clinical and Cognition and AI in Medicine	Adoption of Artificial Intelligence in Medicine: The challenges ahead. Clinical cognition and AI in medicine.
22.12.25	Week13	AI in Subspecialties	The subspecialties and artificial intelligence strategy and applications
29.12.25	Week14	AI in Subspecialties	Artificial Intelligence Applications for all subspecialties
05.01.26	Week15	AI in Subspecialties	Artificial Intelligence Applications for all subspecialties
12.01.26	Week16	Midterm Exam	
19.01.2026-23.01.2026	-	Committee Exam	
26.01.2026-06.02.2026	-	Midterm holiday	
9.02.2026-13.02.2026	-	Committee Exam	
16.02.26	Week17		
23.02.26	Week18	A closer look at a computer system: Basic software and hardware components	Basic computer concepts such as input/output devices, operating system, microprocessors, RAM, external storage devices and principles of program execution are covered.
02.03.26	Week19	Introduction to problem solving techniques, Algorithms and Pseudo Code	Basics of computational problems and solution procedures are introduced.
09.03.26	Week20	Introduction to Python programming language: basic data types, constants and variables, basic operators and expressions.	Pyhton programmin language, interactive developmen environments, and sturctural elements of Python are introduced.

16.03.26	Week21	Data and Expressions: Writing code to store and manipulate user-input data.	Input/Output and basic data storage and manipulation operations are explained.
23.03.26	Week22	Control and repetition structures	Control and Loop structures in Python are explained.
30.03.26	Week23	Lists and List comprehensions	Array data structures and their association with loop statements are covered.
06.04.26	Week24	Second Assessment	
13.04.26-17.04.26	-	Committee Exam	
20.04.26	Week25	Dictionaries and Sets	More advanced data structures dictionaries and sets are covered.
27.04.26	Week26	Functions	Functions and modular designs in programming are covered.
04.05.26	Week27	File Input/Output	File input output and their use for different file formats will be explained.
11.05.26	Week28	Objects and their uses	Definitions of objects and object oriented programming issues will be covered.
18.05.26	Week29	Objects and their uses	Definitions of objects and object oriented programming issues will be covered.
25.05.26	Week30	Python libraries for AI and their uses in practice	Use of popular Python libraries for AI will be introduced together with their use in practice.
01.06.26	Week31	Python libraries for AI and their uses in practice	Use of popular Python libraries for AI will be introduced together with their use in practice.
08.06.26	Week32	Final Exam	

Assessments

Type of evaluation	%
First Assessment	Quiz #1 : 15%
Midterm Exam	Midterm: 30%
Second Assessment	Quiz #2: 15%
Final Exam	Final: 40%

Attendance +5 iff >= 80%