



# מסלול בינה מלאכותית AI



## 1. Introduction

- What is AI & ML?
- Trends & Industry review
- What is programming and why Python?
- Environment Setup
- Course review & materials
- Logical thinking

## 2. Python Basics

- Input & Output commands
- Variables & Casting
- Advanced data types
- Strings
- Flow control
- Loops
- Functions
- Scopes

## 3. Computer Networks Basics

- OSI model
- TCP/IP model
- Addresses (IP, MAC)
- TCP vs. UDP
- DNS protocol
- DHCP protocol
- HTTP protocol

## 4. Advanced Python

- Working with files
- Import libraries
- Magic Functions
- Arguments
- Exception handling
- Scraping & parsing
- Threading
- Generators
- Working with APIs
- Flask apps
- Debugging
- Version Control (Git)

## 5. OOP - Object Oriented Programming

- Concepts
- Classes & Objects
- Encapsulation
- Abstraction
- Interfaces
- Inheritance
- Polymorphism
- Operator Overloading
- Functions Overloading
- Dunders

## 6. Data concepts

- Data concepts
- Rational vs Irrational Data
- Data analysis methods
- Database structures
- Data preprocessing
- SQL
- Advanced SQL & analytical functions
- Indexing Data
- Excel
- Advanced Excel (Macros, pivots, etc.)

## 7. Data Analytics with Python

- 7.1. MySQL
- 7.2. SQLite
- 7.3. NoSQL
- 7.4. MongoDB & MariaDB
- 7.5. Integration with MS-SQL
- 7.6. JSON
- 7.7. XML
- 7.8. SQL
- 7.9. Excel
- 7.10. Firebase
- 7.11. Big Data concepts

## 8. Data Analysis & Visualizations

- Working with Jupyter & Conda
- Statistics
- Linear Algebra
- Vectors
- Data Generation
- Matrices
- pandas
- numpy
- scipy
- Visualization using matplotlib
- Visualization using seaborn

## 9. Machine Learning (ML)

- Introduction
- Regression vs Classification vs Clustering
- Linear Regression
- Logistic Regression
- K Nearest Neighbors (KNN)
- Naive Bayes
- Decision Trees
- Random Forests
- Support Vector Machine (SVM)
- XGBoost
- K Means & GMM
- Regression model evaluating
- Classification model evaluating

## 10. Deep Learning

- Introduction
- ANN
- CNN
- RNN
- LSTM
- GAN
- Autoencoder
- TensorFlow

## 11. Recommender Systems

- Matrix Factorization
- Collaborative Filtering
- Content-Based Filtering
- Bayesian ranking
- Hybrid Deep Learning algorithms

## 12. Artificial Intelligence (AI)

- Minimax
- Deep Reinforcement Learning  
Fundamentals
- Deep Q-Learning
- Deep Convolutional Q-Learning

**\*נא לשים לב!**  
**תכני הסילבוס עלולים**  
**להשתנות**

# מסלול קורסי העשרה

- פתיחת עסק עצמאי
- דיני חוזים
- מכירות
- דיני עבודה
- פיתוח עסקי
- שפת גוף
- מחקרי שוק והתנהגות צרכנים
- כתיבת תוכן שיווקי
- אסטרטגיה למנהל דיגיטל
- מבוא לשיווק דיגיטלי

