**Introduction to Data Science and Engineering (094700) Spring 2021**

Faculty of Industrial Engineering and Management, Technion

## Goals

The objective of the course is twofold. First, to introduce the students to basic concepts, tasks and algorithms in Data Science. Second, to teach Python programming, specifically, for working with data in data science tasks.

## Staff

Instructor: Prof. Oren Kurland; email: kurland@technion.ac.il; office: Bloomfield 411; Office hours: TBD

TA: Liron Tyomkin, email: lirontyomkin@campus.technion.ac.il;

## Time

**Lectures:** Tuesday 10:30-11:30

**Recitations/Tutorial:** Monday/Wednesday 14:30-16:30

Note: The Recitations/tutorials will cover material which is not covered in the lectures.

**Labs:** TBD; There should be a two hours lab every two weeks depending on the COVID-19 situation.

## Announcements

Announcements are posted on the course website on Moodle. Students are required to access the course site on Moodle so as to be up to date with course related notifications.

## Topics (tentative)

1. Data science algorithms and methods
    a. Introduction to descriptive statistics.
    b. Clustering
    c. Classification
    d. Ad hoc retrieval (search)
    e. Recommendation systems
2. Python
    a. Introduction to Python (Basics, Variables, Imports, Statements and Indentations).
    b. Functions, containers and String.
    c. Design: Modules, I\O, Classes, Polymorphism, Iterators, Generators and Exceptions.
    d. Scientific Libraries: Numpy, MatplotLIB, Scipy, Scikit-Learn.

## Grading Policy

Final exam (takef): 65-85 points
HWs (takef) : 3-4 HW assignments; together 15-25 points
Labs assignments (takef) : together 5 points; you must submit 5 out of the 6 lab assignments

Notes:
1. If labs will not be conducted due to the COVID-19 situation, the final grade will be based only on the final exam grade and the HWs grades.
2. You must pass the final exam (with a grade at least 55) to pass the course. If you fail the final exam, the HW grades and lab grades won't count and your final grade will be your exam grade.
3. If both the "Moed A" and "Moed B" of the final exam are taken, only "Moed B" will count for the final grade.
4. Taking the moed mehuhad exam requires the permit of a Faculty Committee.

## Academic Integrity

Using another person's material without proper reference/acknowledgment is strictly forbidden. This applies to excerpts from books, papers, articles, programming code, lecture slides and any other material publicly available. Violation of this code of conduct will result in disciplinary moves.