

**MBA – Focusing on Entrepreneurship, Innovation & Technology Management**

## **Syllabus**

### **Introduction to Information Visualization, 0990101**

Mini Semester 4/8, 2024

Frontal lectures – Weeks 2 and 7 (6/6/2025, 11/7/25), Friday, 9:00-12:30, Room no. 424.  
Online lectures – Weeks 1, 3, 4, 5, 6 (30/5/25, 13/6/25, 20/6/25, 27/6/25, 4/7/25).

**Teaching Staff:**

Instructor: Dr. Yael Albo, [alboyael@gmail.com](mailto:alboyael@gmail.com), 050-7913134  
Office Hours: by appointment only  
TA's: Stav Cohn, [cohnstav@campus.technion.ac.il](mailto:cohnstav@campus.technion.ac.il), 052-8112848  
Office Hours: by appointment only

Prerequisites: None  
Co-requisites: None  
Courses Without Credit: None

Credits: 2

Study hours per week: 4

### **Course Goals and Description**

The course intends to teach visualization design and analysis and provide hands-on experience in creating interactive visualizations on real-world data. Students will be exposed a wide range of information visualization techniques in a systematic way based on a strong theoretical background and scientific approach.

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### **Learning Outcomes**

At the end of the course:

- Students will be familiar with the field of information visualizations (background, definitions, and why it is necessary).
- Students will understand how to abstractly analyze the data and relevant questions for information visualization.
- Students will be able to explain basic principles of visual perception.
- Students will be familiar with guidelines for designing visual solutions derived from data characteristics and questions.
- Students will be able to critically analyze information visualizations.
- Students will be capable of creating effective information visualizations themselves using Tableau.

### **Course Content/Topics**

- Introduction, historical background, and "the big picture" of the theoretical framework.
- Data characterization (What)
- Question characterization (Why)
- Characteristics of visual perception
- Charts, interactions, dashboards, stories (How)
- Implementation of information visualizations in Tableau

### **Assignments and Grading Procedures**

- Exercises: 20%  
Individual work, including classroom and homework exercises as well as quizzes.  
Quizzes must receive a grade of at least 80, students are allowed to resubmit quizzes until achieving the desired grade.

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- Project: 80%  
Teamwork (up to 4 members). Development of a visualization in Tableau, including theoretical justifications in an accompanying document (a framework for the accompanying document will be provided).  
Presentation video with the participation of all team members. Additional defense of the project may be required at the discretion of the instructor.
- A passing grade in each of the grade components is required in order to be eligible to receive a final grade.

### Course Schedule (Topics, assignments)

Week	Date	Topics	Assignments (credit points)	Reading, Chapters*
1	30/5/25	Introduction – Motivation and definition, "The Big Picture" of the theoretical framework. Issues in data preparation. Introduction to Tableau.	Ex. 1: My First Vis (2). Quiz: Introduction (1).	1
2	<b>6/6/25 (Frontal)</b>	Data abstraction (What), Question abstraction (Why**). Tableau – Data preparation, User Interface overview**.	Ex.2: Data Preparation – In Class (2), Quiz: What Abstraction (1), Drawing Activity – In Class (1)	2 and 3
3	13/6/25	How – Marks & Channels, Visual Perception**. Tableau – Control the Appearance of Marks in the View.	Ex. 3: Music Sales (2). Quiz: Marks & Channels (1).	5 and 10
4	20/6/25	How – Charts (Analysis and Application). Tableau – Charts.		6
5	27/6/25	How – Charts (Continued). Tableau – Charts. Maps**	Ex. 4: Charts (5)	

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6	4/7/25	How – Interactions and Facet (Split Screen), Dashboards. Tableau – Interactions.	Ex. 5: Chart Interactions (2). Quiz: Dashboards (1).	11
7	<b>11/7/25 (Frontal)</b>	How – Data Driven Stories. Course summary, Project guidelines. Tableau – Dashboards & Stories.	Ex. 6 (In Class): Dashboards (2)	

\*\* Optional

18/7/25: End of Project Approval

7/8/25: Final Project Submission

**Course Requirements & Course Policies**

**Attendance:**

Attendance is expected in the two frontal lectures (6/6/25 and 11/7/25).

**Participation:**

Active participation is crucial for your success in this course. Participation includes contributing to class discussions, engaging in group activities, and completing in-class assignments.

Respectful communication is expected at all times.

**Assignments:**

All assignments must be submitted by the due date. Late submissions will incur a penalty.

Assignments submitted more than five days after the deadline will not be accepted without prior approval.

**Text book(s) and/or other materials**

1. Mandatory:

\*Munzner, T. (2014). Visualization Analysis and Design. CRC Press.

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### 2. Recommended:

Wexler, S., Shaffer, J., & Cotgreave, A. (2017). *The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios*. John Wiley & Sons.

### 3. Recommended:

Riche, N. H., Hurter, C., Diakopoulos, N., & Carpendale, S. (Eds.). (2018). *Data-Driven Storytelling*. CRC Press.

### **Academic Integrity**

Academic integrity is fundamental to the learning process and maintaining a fair and equitable academic environment. Students are expected to uphold the highest standards of honesty in all academic work, including assignments and projects.

In this course, any form of cheating, plagiarism, fabrication, or unauthorized collaboration is strictly prohibited. You are required to complete your own work unless otherwise instructed.

Violation of these principles will result in academic penalties, which may include a failing grade on the assignment, a failing grade in the course, and possible further disciplinary action in accordance with the university's academic integrity policy.

### **Other useful information for students**

The responsibility for learning in a hybrid course is on you. We (the course team) will guide, advise, and assist to the best of our ability. Please feel free to use the course forums without hesitation.