

# תוכנית הקורס ורשימת קריאה לקורס

סמסטר 0 שנה 2024



**בית ספר:** בית ספר סמי עופר לתקשורת B.A.

פרויקט גמר: VR

## מרצים/ות:

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<b>מספר הקורס:</b>	7621	<b>סוג הקורס:</b>	סדנה	<b>שעות שבועיות:</b>	4	<b>נקודות זכות:</b>	4
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<b>דרישות הקורס:</b>	עבודה מסכמת	<b>קוד קבוצה:</b>	240762101	<b>שפת לימוד:</b>	עברית
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נושאי הקורס 

### Course outline:

Course Subjects: 1st semester

1 Introduction

Course logistics; syllabus; examples of various digital products, Virtual Reality, and interactions in Virtual Environments.

**2-4** Research domain, social VR, UX VR

Product review: select one VR experience and review it

Each group of students will be given a paper relating the material of virtual environments and interaction in VR to present.

**5 -6** Individual group meetings

Each group will present three ideas of the project they will be running throughout the semester. The group will design and create mockups of their ideas to test out with end-users.

**7** Group concept presentation – **low fidelity**

**8-12** Teamwork with team meetings, guidance and guest lectures on design and Unity programming

**13** Concept presentation

After finalizing the low fidelity evaluations each group will decide on one Idea that the group will work on for the rest of the year. Each group will present the methods of operation, state of the development of the project and conclusions based on the experience acquired.

Goals for the 1st semester:

Define user and experience

- **First stage:** create immersive exploration, Generate a 3d scene (Environment in low fidelity prototype)
- **Second stage:** create an interaction in the virtual environment: 2-3 month (mid-fidelity prototype)

## Submissions 1<sup>st</sup> Semester

1. **Experience design document**
2. **Technical design document**

## Course Subjects: 2nd semester

- 1 Presentations and status reports
- 2-3 High interaction design – design the high-fidelity prototype development sprint using the finalized game design document and technical design document.
- 4 Student presentations- explaining the development gant and important decision before continuing with the final development sprint
- 6-12 Development sprint - continues work on design and interaction development (by weekly meeting with mentors and weekly updates.
- 8 Submit video storyboard and script
- 10-11 Production of project video
- 12 Video submission
- 13 Final presentations/ Demo's event, will be announced in class

## Submission 2<sup>nd</sup> Semester

1. **Working Prototype**
2. **Deck pitch presentation**
3. **Project Video**

**End Product:** New media experience, Demo of the prototype in VR.

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מטרות הקורס 

### **Course description: Adaptive virtual reality storytelling**

2016 was a turning point in the history of virtual reality (VR) – after many years of academic research and niche commercial deployment, VR is being adopted by the masses, backed by leading companies such as Facebook, Samsung, Google, Sony, and more. Given that the technologies have matured and are becoming widely available, experts in the field is now looking to solve the challenges involved in VR content production. How to tell a compelling story using this new medium? What are the guidelines for interaction design? What are the opportunities and pitfalls in achieving a great user experience?

Currently, more than ever, in light of the global Covid-19 epidemic, virtual reality is getting immense attention. Using immersive worlds, individuals can experience interactions that are currently unavailable due to health regulations. Furthermore, virtual reality opens up opportunities for social interaction and telecommunication that will prove to be significant in the post epidemic era.

We believe that VR displays (such as Oculus quest, Rift, or Google cardboard) are only the beginning. Interactive VR requires supporting technologies, specifically input devices allowing the participant to interact with the VR – navigate, operate objects, embodiment technologies, and more. Such interaction paradigms require a wide range of sensors and interfaces, full-body tracking, eye gaze or head gaze control, and more. Of particular interest is implicit interaction - our research interest is in VR systems that have capabilities to monitor, in real-time, the cognitive and emotional state of the participant, and adapt accordingly.

Students involved in the program will have the opportunity to explore these questions using real-world VR devices, tracking sensors, and more. The projects will include designing 3D world environments, constructing significant interactions within these environments, and measuring the effects of these interactions in the real world. The project will be hands-on, where the students will get familiar with several VR devices such as the Oculus Rift and HTC VIVE. Programming skills and content production are an advantage though the basics are covered throughout the program.

A successful project will be a group effort towards the production of new innovative interactive user experiences on a VR device.

Theme:

**Social Virtual Reality** – Social VR experience is believed to be the true potential of VR. As pictured in movies like "Ready Player One," the idea of another universe ("Metaverse") that we can experience as a social experience is turning to reality as we speak, as more and more opportunities appear and the VR headsets are getting more widely distributed.

In light of the COVID-19 pandemic, the field of Social VR is even more ready to be accepted as a medium. We would want you to explore the ways we can create interesting and exciting experiences in VR, together.

Leading project domains:

**Project Management:** The group will have to manage its own time and provide prototypes and presentations each week. Since we are both creating a technological product and its presentation, you will have to balance the time between all the domains.

**UX Design and Evaluation:** Designing user experience for VR is a unique challenge that is still being researched.

Unlike UX for mobile and PC, the user range of input is much bigger. In order to navigate the user to interact with the world without harming the presence and even enhancing it, you will have to be creative and innovative.

**Tech Production:** Using the Unity Engine, One of the most popular 3D engines in the market, You will learn how to create an immersive VR experience. You will learn how to define a 3D experience and what are the possibilities and limits of the engine.

**Content Design:** The design of 3D environment is going to take much bigger place in our lives in the near future. You will learn where to find content, how to design a 3D environment, and how to create and design 3D avatars.

### **Learning Tools to be used alongside frontal teaching:**

Zoom lectures and personal meeting

Figma for UI design

Miro : <https://miro.com/login/>

Google drive

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מבנה ציון הקורס 

Assignments and Requirements:

- Mandatory attendance at all sessions of the Course
- Maximum two absences per semester, as per IDC's policy

- Students must read the assigned material and work on different elements of their Project during the week.
- Students will hand in a low fidelity prototype and two required documents (game design document and a technical design document) at the end of the first semester
- At the end of the year, students will submit a final project/ Demo, a pitch deck of the project, and a project video.

Prerequisite: Unity Development class

### Composition of Course Grade:

15% - Attendance and participation

20% - Presentations

65% - Final submission

40% Demo

25% Project Video

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שעות קבלת מרצה 

Tuesday 16:00-17:00

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פרטי עוזר הוראה 

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הערות נוספות 

### נוהלי הפקה:

בית הספר מאפשר שימוש בתשתיות הטכנולוגיות עפ"י נוהלי הפקה שמפורסמים באתר אוניברסיטת רייכמן (תחת תקנונים).

### תכנים:

התכנים המופקים במסגרת הסדנאות נעשים תוך הקפדה על כללי האתיקה ואין בהם תוכן פוגעני או

בלתי ראוי. ביה"ס שומר לעצמו את הזכות הבלעדית לבחור, להציג ולפרסם עבודות סטודנטים בכנסים ואירועים ובאמצעי התקשורת השונים.

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רשימת קריאה 

Abtahi, P., Hough, S. Q., Landay, J. A., & Follmer, S. (2022, April). Beyond Being Real: A Sensorimotor Control Perspective on Interactions in Virtual Reality. In CHI Conference on Human Factors in Computing Systems (pp. 1-17).

Slater, M., & Sanchez-Vives, M. V. (2016). Enhancing our lives with immersive virtual reality. *Frontiers in Robotics and AI*, 3, 74.