



Course program and reading list

Semester 0 Year 2024

School: Baruch Ivcher School of Psychology

Guided Research Group project course in the Advanced Reality Lab

Lecturer:

Prof. Doron Friedman doronf@runi.ac.il

Course No.:	Course Type :	Weekly Hours :	Credit:
8933	Elective	2	2

Course Requirements :	Group Code :	Language:
Final Paper	240893301	English

Prerequisites

Prerequisite:

8000 - Introduction To Psychology

Students who took one of the courses listed below will not be allowed to register to the course Guided Research Group project course in the Advanced Reality Lab (8933):

- 3451 - Guided Research- Brain Reseachr
- 8157 - Guided Research -Infant Development - Development of the caregiver, the infant and the relationship between the two.
- 8928 - Close relationships and sexuality: The new era; 2015-2016
- 8929 - Guided Research on social defense theory and its implication to interpersonal relationships
- 8930 - Guided Research cognition and aging
- 8931 - Guided Research research conducted by the members of DICE@IDC research center
- 8932 - Guided research on the psychology of intergroup conflict

8965 – Interpersonal synchrony and neuroscience
8966 – Attachment processes
8967 – Guided Research – Intervention for suicide prevention and strength development among students in middle and high schools in Israel
8968 – Hormones, Behavior and Chemo-Signaling
8969 – Guided Research – Yes we can communication aging and neuro
8970 – Guided Research – Mindfulness, psychological flexibility and the brain



Course Description

The Advanced Reality Lab (<http://arl.idc.ac.il>) is engaged in research and development of advanced social applications based on novel technologies, mostly virtual reality and artificial intelligence. The research is conducted in collaboration with researchers and industry partners as part of local and international projects. The laboratory is multidisciplinary and employs researchers and students from Computer Science, Psychology and Communication.

The Psychology students will be integrated in the laboratory as part of the projects operating at that time and will be integrated in all stages of the research: literature review, planning, running experiments and analyzing results. Students will receive instruction and guidance from the head of the lab or from the researchers in the lab. During the work, students will acquire basic knowledge in virtual reality and use virtual reality for research in the social sciences.

At the beginning of the year, students will receive instruction in the laboratory to experience and activate virtual reality experiences that we use for research. The laboratory maintains a record of protocols for running software for testing and analyzing results.

Students will be able to work alone or in pairs. At an early stage each student or couple will choose a project to integrate into, subject to logistical constraints (e.g., the availability of the researchers leading the project to certain days and hours). Students will be integrated throughout the study. In the second semester, a sub-study or sub-question from the general study will be defined for each student (or staff), and the student will have to submit a written report on the subject, similar to a seminar paper of 2 credits. The submission date is September 1. Empirical no later than the second semester and it is possible to leave the writing of the report for the summer.

Unlike traditional courses, in this course students will work as part of real research projects, which may have various constraints throughout the year.

No prior technical knowledge is required, but integration in the laboratory is not recommended for "technophobic") as virtual reality and artificial intelligence technologies developed in the laboratory are used, and patience and ability to resolve faults and know how to seek relevant support from the laboratory technical staff are required.

Expected projects 2023-2024 for psychology students (there will be a few more options):

- Innovative therapeutic intervention through a dialogue with yourself in virtual reality (in collaboration with researchers from Europe, see [link](#))
- Security and resilience program for depression and suicide (in collaboration with Prof. Anat Klomek Bronstein)
- Human responses to artificial intelligence agents (text based and VR)
- Reducing stereotypes (towards the elderly in the workplace, towards individuals with disability) using VR



Course Goals

The course will introduce Psychology students to using virtual reality as a 'human behavior lab', for both research and applications, such as training and therapy.



Grading

50% - participation in project work throughout the year

50% - final report

Students will be required to serve as participants in VR experiments carried out in the lab throughout the year - 6 credits (each credit is a 20 minute experiment slot, most studies are 2-3 credits).



Reading List

Reading material will be allocated per project.

General background:

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

Pan, X., & Hamilton, A. F. D. C. (2018). Why and how to use virtual reality to study human social interaction: The challenges of exploring a new research landscape. *British Journal of Psychology*, 109(3), 395-417.

Yee, N., & Bailenson, J. (2007). The Proteus effect: The effect of transformed self-representation on behavior. *Human communication research*, 33(3), 271-290.