Course program and reading list

Semester 0 Year 2023

School: Baruch Ivcher School of Psychology

Psychology, Brain and Life Science

Lecturer:

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Course No.:	Course Type :	Weekly Hours :	Credit:
8170	Lecture	8	8

Course Requirements :	Group Code :	Language:
Final Paper	230817001	English

Prerequisites

Prerequisite:

8984 - The Biological Basis of Behavior: Avanced Topics
9067 - Psychology and Neuroscience: An Interdisciplinary Approach A
OR 8891 - Biological Basis of Behavior A
9068 - Psychology and Neuroscience: An Interdisciplinary Approach B
OR 8892 - Biological Basis of Behavior B

Course Description

During the course, the students will get acquainted with contemporary research topics in biology and neuroscience, with relevant research methods in animals and humans and with the work of leading Israeli neuroscientists. They will also visit research laboratories and centers. Most of the lessons will be in English (some will be in Hebrew for the Israeli school and in English for the international school). The assignments will be submitted in English or Hebrew (as per each student's personal preference).

The course is divided according to the following units:

- Introduction
- Life science - an in-depth look at molecular biology and genetics.
- Current topics in neuroscience - meeting the "hot topics" being researched in neuroscience today.
- Critical thinking in science - how to tell science from pseudo-science, how to communicate science in a responsible and accurate manner and why it is important to do so.
- Evolution - getting to know the most important theory in biology.
- Neuroscience in Israel - meet some of the researchers and clinicians doing research in Israel today, both in human and animal subjects and visit active neuroscience research centers in Israel.

Course Goals

The program is aimed at students interested in advanced degrees in neuroscience which are considering a cereer in academia and/or in research. Its purpose is to expose students to the theoretical and practical aspects of the life of a researcher with an emphasis on biology and neuroscience.

Grading

Please note: due to the special characteristics of some of our lessons and the need for very active participation, ***physical*** attendance is mandatory (i.e. joining the lessons via zoom is not possible).

Grade components for semester A:

- 4 quizzes - 20% (5% per quiz)
- One class debate – 5%

- Research Proposal - 65%
- Attendance (mandatory) & lecturer evaluation - 10%

Grade components for semester B:

- Science communication assignment - 20%
- Three class debates – 15% (5% per debate)
- Poster assignment - 55%
- Attendance (mandatory) & lecturer evaluation - 10%

Learning Outcomes

The students will learn to understand academic scientific material in depth, to read scientific papers critically and to write and present scientific content.

Lecturer Office Hours

By appointment through e-mail: Limorw@gmail.com; anoa@idc.ac.il

Reading List

Reading list for semester A:

Date	Unit	Reading
31/10/22	**Intro**	Akil H et al. (2016). Neuroscience Training for the 21st Century. Neuron Perspecti
07/11/22	**Life science**	**Chapter 1** of Alberts, B. et al., (2014). Essential cell biology. New York, NY: Garland
14/11/22		**Chapter 7** of Alberts, B. et al., (2014). Essential cell biology. New York, NY: Garland
21/11/22		**Chapter 18** of Alberts, B. et al., (2014). Essential cell biology. New York, NY: Garlan
28/11/22		Roth T. & Sweatt D. (2011). Annual Research Review: Epigenetic mechanisms and brain during sensitive periods of development. Journal of Child Psychology and
05/12/22	**Current topics in neuroscience**	Sidor, M.M. (2012). Psychiatry's age of enlightenment: optogenetics and the disco treatment of psychiatric disorders. J Psychiatry Neurosci. 37(1): 4 - 6.
12/12/22		**Section A** of "Atlas of functional neuroanatomy" (PDF file).
19/12/22	**Critical thinking**	Fischhoff, B. (2013). The sciences of science communication. Proceedings of the

	in science	Sciences, 110(supplement_3), 14033-14039.
26/12/22		Collin, G., & Keshavan, M. S. (2022). Connectome development and a novel exten neurodevelopmental model of schizophrenia. Dialogues in Clinical Neuroscience
02/01/23	**Current topics in neuroscience**	**1.** "Introduction to Immunology – The Normal Immune Response" (PDF file). **2.** Sherwin E., Sandhu K.V., Dinan T.G. & Cryan, J.F. (2016). May the Force Be With of the Microbiota-Gut-Brain Axis in Neuropsychiatry. CNS Drugs, 30(11):1019-1041
09/01/23	**Critical thinking in science**	**1.** "Principles of Vaccination" (PDF file).
16/01/23	**Current topics in neuroscience**	**1.** Stem Cell Basics. PDF file, **read pages 1-17**. **2.** Gross, C. (2000). Neurogenesis in the adult brain: death of a dogma. Nature n
23/01/23		-------

Reading list for semester B:

Will be published later via the course website.