



Course program and reading list

Semester 1 Year 2023

School: Baruch Ivcher School of Psychology

The Biological Basis of Behavior: Advanced Topics

Lecturer:

Dr. Limor Shtoots slimor@runi.ac.il

Tutors:

Ms. Netali Mor mor.netali@post.runi.ac.il

Teaching Assistant:

Ms. Netali Mor mor.netali@post.runi.ac.il

Course No.:	Course Type :	Weekly Hours :	Credit:
8984	Lecture	2	4

Course Requirements :	Group Code :	Language:
Final Exam	231898405	English

Prerequisites

Prerequisite:

- 8000 - Introduction To Psychology
- 9067 - Psychology and Neuroscience: An Interdisciplinary Approach A
- 9068 - Psychology and Neuroscience: An Interdisciplinary Approach B

Students who took one of the courses listed below will not be allowed to register to the course The Biological Basis of Behavior: Avanced Topics (8984):

8021 – Brain, Cognition and Emotion

8938 – Brain, Cognition, and Emotion



Course Description

This course builds on the material we studied in the first year in "Psychology and Neuroscience – an Interdisciplinary Approach" A+B courses. We will begin with an overview of human **genetics** – the foundations of what we become in life. This leads us into an overview of the biology of **development**, from the moment of conception until old age. The second part of the course explores the biological foundations of **emotions**, and provides the biological background for understanding **psychopathology**. This will hopefully lead us to a better appreciation of the fine line between normalcy (if there is such a thing...) and insanity.



Course Goals

1. To convey appreciation of the importance of genetics for psychology
 2. To provide insights into the interaction between lifespan biological changes and psychological variables.
 3. To present the biological bases of emotion
 4. To explore the neural foundations of mental illness.
-



Grading

Grade components: 4 quizzes (5% each quiz), semester exam (80%).

Make up quizzes – only for students which could not attend the quiz on the original date and with approval from the lecturer.



Learning Outcomes

Students should be able to read scientific articles and answer questions regarding the topics of genetics and psychology, lifespan biological changes and psychology, the biological bases of emotion, and the neural foundations of mental illness.



Lecturer Office Hours

By appointment only, via e-mail: slimor@idc.ac.il



Tutor Office Hours

By appointment only, via e-mail: netalimor@gmail.com



Teaching Assistant

By appointment only, via e-mail: netalimor@gmail.com



Additional Notes

Our readings will be drawn from your "Psychology and Neuroscience: An Interdisciplinary Approach" textbook and several other sources as well, which will be available on the course website or other download locations to be announced. It is the responsibility of the student to check that website weekly (at least) for updates, changes and assignments.



Reading List

Textbook: Laura A. Freberg, *Discovering Behavioral Neuroscience*, 3rd Edition

[+ = additional reading material]

	Recitation (Sunday 8:00-9:30)	Lecture (Monday 15:45-17:15)
Date		
<u>Zoom</u>		<u>Campus</u>

Unit 1 - Genetics:

	Course overview;	Molecular Genetics – Transcription
		- - -
30,31 Oct	Basic Principles of Heredity	1. Freberg 140-145,149-150
	- - -	2. Alberts et al., <i>Essential Cell Biology</i> , Chapter 7, pages 231-238; 241-243
	File on Website: Heredity	
		Molecular Genetics – Translation
		- - -
6,7 Nov	Basic Principles of Heredity – part two	Alberts et al., <i>Essential Cell Biology</i> , Chapter 7, pages 246-247, 250-251
	- - -	
	File on Website: Heredity	
	Review Molecular Genetics – Transcription & Translation	Epigenetics
13,14 Nov	- - -	- - -
	1. Freberg 140-145,149-150	1. Freberg 146-149
	2. Alberts et al., <i>Essential Cell Biology</i> , Chapter 7, pages 231-238; 241-243; 246-247, 250-251	2. Champagne & Mashoodh, 2009
	Genetics Research Methods	Genetics of Thought and Emotion
20,21 Nov	- - -	- - -
	1. Freberg 17-19	Diamond, 2011 (pages 319-321, 325-328)
	2. File on Website: Genetics Research Methods	

QUIZ 1 – Genetics unit.

Unit 2 - Development:

	Developmental Disorders	Ontogeny
27,28 Nov	- - -	- - -
	1. Freberg 164-168, 545-553	Freberg 151-159
	2. File on Website: Fragile X syndrome	
	3. File on Website: Autism	
	Review Ontogeny;	Critical Periods and Plasticity
4,5 Dec	Brain and Cognition in Aging	- - -
	- - -	Freberg 160-164

1. Freberg 169-172
2. File on Website: Aging & Cognition

QUIZ 2 – Development unit.

	<u>Unit 3 - Emotion:</u>	Expressing Basic & Complex Emotions
11,12	Theories of Emotion	- - -
Dec	- - -	Freberg 478-485
	Freberg 485- 489	
	Biology of Emotional Regulation	Stress, Fear, & Anxiety
18,19	- - -	- - -
Dec	Etkin, Büchel & Gross, 2015	Freberg 502-510
		Pleasure & Reward; Empathy
		- - -
26		1. Freberg 495-497
Dec		2. Berridge & Kringelbach, 2013
		3. de Vignemont & Singer, 2006
	No recitation: Hanukkah vacation	
		<u>Unit 4 - Biology of Psychopathology:</u>
	Anger, Aggression & Courage; Review Emotion	Schizophrenia
1,2	- - -	- - -
Jan	Freberg 490-495, 497-502	1. Freberg 544, 553-561
		2. Cannon, 2015
		3. Insel, 2010
	QUIZ 3 – Emotion unit.	Schizophrenia – part two;
8,9	Anxiety Disorders (GAD, OCD, Panic, PTSD)	Mood disorders
Jan	- - -	- - -
	Freberg 569-574	Freberg 561-569
	APD; Endo-Phenotypes;	Mood disorders – part two
15,16	Review Biology of Psychopathology	- - -
Jan	- - -	Freberg 561-569

Freberg 574-577

QUIZ 4 - Biology of Psychopathology unit.

22,23

Jan

General Review

General Review – part two;

Make up Quizzes 1-4 (only for students with approval)