



Syllabus Advanced topics in neuroscience

Academic year: 2023/2024

Study program: Graduate programs: Biotechnology in medicine, Biotechnology and drug research, and Medicinal chemistry

Course code: EBIL183

ECTS points: 3

Language: English

Teaching load (in hours): 20 Lecture + 10 Seminar + 0 Lab = 30 hours

Prerequisite: passing grade in Basic Physiology and Pathophysiology course

Course instructor:

Titula i ime: doc. dr. sc. Željka Minić

Adresa: Sveučilište u Rijeci, Odjel za biotehnologiju, R. Matejčić 2, Rijeka

e-mail: zeljka.minic@uniri.hr

Consultation hours: electronically and per appointment

Instructors:

doc. dr. sc. Željka Minić (ŽM): 20 (Lecture) + 10 (Seminar)

Required literature:

1. Lecture notes

Recommended literature:

1. Selected scientific papers

Course objectives:

The aim of the course is to understand the interplay between cognition and visceral physiological processes both in health and disease states. The course will focus on understanding cognition from the neuroscience perspective by exploring literature published in scientific journals. The students will explore the distinction between the brain and the mind to understand how cognitive processing drives human behavior and motivation. The materials will be explored both intellectually and experientially to gain comprehensive insight into neurocircuits influencing cognitive function.



Learning outcomes:

By the end of the course, the students will be able to:

- Understand higher brain functions and specifically, the role of the frontal cortex
- Understand neurobiological responses to stress
- Describe the difference between the brain and the mind
- Understand how the brain controls cognitive processes
- Critically discuss the role of mindfulness practice in cognition
- Explore their own cognition
- Integrate preexisting knowledge of physiology and neuroscience with the knowledge gained during the course to develop new therapeutic approaches for mental disease

Competences gained during the course:

A1, A2, A3, A5, A7, B1, B3, B4; C1, C2, C3, C4.

Detailed course content:

Lectures: As listed below.

Seminars: As listed below.

Requirements, methods of assessment and evaluation:

Students are required to attend all classes.

Grading (according to Pravilnik o studijima Sveučilišta u Rijeci):

Class participation (10 %): – active participation in class--class discussions, asking questions etc.

Reports of reflections (20%): -- summarize experiential findings from cognitive exercises

Student presentations (40%) – presentations on the topic of student's choice

Final exam - 30 % -- the final exam will be written and/or oral

Eligibility for final exam:

- Students scoring between 0 and 24.9% will not be allowed to approach the final exam
 - Students scoring between 25% and 50% will be allowed to approach the final exam
- If no points are earned, the exam will be graded FX.

* A1-Osnovno znanje profesije; A2-Komunikacijske vještine (oralna, pisana, poznavanje drugog jezika); A3-Učenje novih vještina i procedura; A5-Rješavanje problema; A8-Korištenje informatičkih tehnologija; B1-Rad u grupi – timski rad; B3-Shvaćanje etičkih i socijalno-kulturoloških implikacija donesenih odluka; B4-Propitivanje vlastitog znanja; B5- Organizacija planiranje i upravljanje vlastitim vremenom i mogućnostima; C1-Rješavanje problema; C2-Logično mišljenje i zaključivanje; C3-Kreativno razmišljanje; C4-Sposobnost analize



Exam deadlines:

1. The final exam will be on 05/07/2024 at 9:00 am in O-339.
2. Make-up exam time and day will be determined later.
3. Additional make-up exam possibilities will be discussed on a case by case basis.

Final grades

The following grades will be awarded based on the final score:

Percentage score	ECTS grade	Numerical grade
90% do 100%	A	Excellent (5)
75% do 89,9%	B	Very good (4)
60% do 74,9%	C	Good (3)
50% do 59,9%	D	Satisfactory (2)
0% do 49,9%	F	Unsatisfactory (1)

The final grade is based on the sum of percentage points accumulated during the course and on the final exam. Passing grades are excellent (5), very good (4), good (3) and satisfactory (2).

To complete the course students must attain a passing mark for the entire course (50% or higher) as well as achieving at least 50% at the final exam.

Additional information:

Academic integrity

Students are required to respect the principles of academic integrity, and refer to the following documents: Ethical rules of the University of Rijeka and Ethical rules for students.



Schedule of classes:

Date	Time	Duration (hours)	Location	Topic	Instructor
1. WEEK					
24.06. MON	13:00- 16:00	4	O-269	P1 Course overview Frontal lobe functions Neuroplasticity of the brain What is mindfulness	doc. ZM
25.06. TUE	12:00- 14:30	3	O-269	P2 Neurobiology of stress The role of higher brain structures in controlling visceral functions	doc. ZM
26.06. WED	12:00- 14:30	3	O-269	P3 Neurocircuits involved in attention Brain vs. Mind Illusion of choice	doc. ZM
27.06. THU	TBD	3	ONLINE	P4 Criminal insanity	dr.sc. CS doc. ZM
28.06. FRI	12:00- 14:30	3	O-269	P5 Emotion regulation	doc. ZM
2. WEEK					
01.07. MON	12:00- 14:30	3	O-269	P6 TBD	doc. ZM and quest
02.07. TUE	12:00- 15:00	4	O-269	S1 Student presentations	doc. ZM
03.07. WED	13:00- 15:30	3	O-269	S2 Student presentations	doc. ZM
04.07. THU	12:00- 15:00	3	O-269	S3 Student presentations	doc. ZM
		1		P4 Final overview, questions and answers	
05.07. FRI	9:00-11:00		O-339	Final exam	doc. ZM