



Detailed Course Syllabus

Academic Year	2023/2024	Semester	Summer
Study Program	Undergraduate university study	Specialization/Major in	For Student Incoming Mobility
		Year of Study	1-3

I. BASIC COURSE INFORMATION

Name	Mind, Brain and Education		
Abbreviation	IZBEPSIH7	Code	251855
Status	Elective	ECTS	3
Prerequisites	None		
Total Course Workload			
Teaching Mode	Total Hours	Teaching Mode	Total Hours
Lectures	15	Seminars	15
Class Time and Place			

II. TEACHING STAFF

Course Holder

Name and Surname	Martina Knežević		
Academic Degree	PhD	Professional Title	Assistant Professor
Contact E-mail	martina.knezevic@unicath.hr	Telephone	+385 (1) 3760 605
Office Hours	According to the schedule		

III. DETAILED COURSE INFORMATION

Teaching Language	English
Course Description	The main aim of this course is to familiarise students with the latest advancements in neuroscience, with the emphasis on the role of the environment, education and experience in shaping brain and behaviour. Students will have the opportunity to explore the relationship between developmental psychology, cognitive neuroscience (brain and behavioral sciences) and educational psychology, through an interdisciplinary perspective and learn about the difficulties and challenges faced by experts in different fields when trying to apply advances in one scientific discipline to another. The course places a strong emphasis on interdisciplinary dialogue and focuses on bridging barriers between research and practice.
Expected Educational Outcomes	Explain the role of basic human structures of the brain. Describe modern methods of brain imaging. Distinguish scientific facts from myths about the brain. Interpret the latest findings about the interaction of mind, brain and education. Argue the importance of learning and teaching from an early age and the importance of lifelong learning for brain development and function. Explain the effects of the environment on brain development and function.

Textbooks and Materials

Required

- Notes from the lectures
- Blakemore, S. J. & Firth, U. (2005). *The learning brain. Lessons for education*. Blackwell Publishing.
- Johnson, M. H., & de Haan, M. (2015). *Developmental cognitive neuroscience: An Introduction. (4th Ed.)*. West Sussex, Wiley Blackwell.
- Keating, D. P. (Ed.). (2011). *Nature and nurture in early child development*. Cambridge University Press.

Books

- Blakemore, S. J. (2018) *Inventing Ourselves: The Secret Life of the Teenage Brain*. Hachette Book Group.
- Dekker, S., Lee, N. C., Howard-Jones, P. & Jolles, J. (2012). Neuromyths in education: Prevalence and predictors of misconceptions among teachers. *Frontiers in Psychology*, 3, 429.
- Torous, J., Firth, J. A. & Stubbs, B. (2019). The "online brain": how the Internet may be changing our cognition. *World psychiatry* 18; 119-129.
- Sousa, DA (2011) *How the Brain Learns*. SAGE.
- Wolfe, P (2010) *Brain Matters: Translating Research into Classroom Practice*. ASCD books.

Scientific papers

Supplementary

- Adolphs, R (2001) The neurobiology of social cognition. *Current Opinion in Neurobiology*, 11, 231-239.
- Best, JR, Miller, PH & Naglieri, JA (2011) Relations between executive function and academic achievement from ages 5 to 17 in a large, representative national sample. *Learning and Individual Differences*, 21, 327-336.
- Blakemore, SJ (2008). The social brain in adolescence. *Nature Reviews Neuroscience*, 9, 267-277.
- Brown, TT & Jernigan, LJ (2012) Brain Development during the Preschool Years. *Neuropsychology Review*, 22, 313-333.
- Crone, EA & Dahl, RE (2012) Understanding adolescence as a period of social-affective engagement and goal flexibility. *Nature Reviews Neuroscience*, 13(9), 636-650.
- Johnson, MH (2001) Functional brain development in humans. *Nature Reviews Neuroscience*, 2, 475-483.
- Fischer, KW (2008) Dynamic cycles of cognitive and brain development: Measuring growth in mind, brain and education. In A. M. Battro, K. W. Fischer & P. Lena (Eds.), *The Educated Brain* (pp. 127-150). Cambridge University Press.
- Fischer, KW (2009) Mind, Brain and Education: Building a Scientific Groundwork for Learning and Teaching. *Mind, Brain and Education*, 3(1), 3-16.
- Goswami, U (2006) Neuroscience and education: from research to practice? *Nature Reviews Neuroscience*, 2-7.
- McEwen, BS (2007) Physiology and Neurobiology of Stress and Adaptation: Central Role of the Brain. *Physiological Reviews*, 87, 873-904.
- Moran, JM (2013) Lifespan development: The effects of typical aging on theory of mind. *Behavioural Brain Research*, 237, 32-40.
- Stiles, J & Jernigan, TL (2010) The Basics of Brain Development. *Neuropsychology Review*, 20, 327-348.
- Tsujimoto, S (2008) The Prefrontal Cortex: Functional Neural Development During Early Childhood. *Neuroscientist*, 14(4), 345-358.

- Toga, WA, Thompson, PM & Sowell, ER (2006) Mapping brain maturation. *Trends in Neuroscience*, 29(3), 148-159.
- Rubia, K (2013) Functional brain imaging across development. *European Child and Adolescent Psychiatry*, 22, 719-731.
- Zaidi, ZF (2010) Gender Differences in Human Brain: A Review. *The Open Anatomy Journal*, 2, 37-55.
- Yurgelun-Todd, D (2007) Emotional and cognitive changes during adolescence. *Current Opinion in Neurobiology*, 17(2), 251-257.

Examination and Grading

To Be Passed	Yes	Exclusively Continuous Assessment	No	Included in Average Grade	Yes
Prerequisites to Obtain Signature and Take Final Exam		Regular class attendance (at least 70%)			
		Obtaining a minimum of 35% points (out of a total of 100% points) during classes (midterm exams, seminar papers)			
Examination Manner		Continuous evaluation of student work throughout the course (seminars, exams)			
		Final exam (minimum 50%)			

Grading Manner

Type of assessment	Points
<i>During the semester</i>	
1 st seminar	20%
2 nd seminar	20%
Midterm exam	30%
<i>End of semester</i>	
Final exam	30%
Total	100%

Points	Grade
90-100%	Excellent (5)
80-89.9%	Very good (4)
65-79.9%	Good (3)
50-64.9%	Sufficient (2)
0-49.9%	Insufficient (1)

Detailed Overview of Grading within ECTS	Activity	ECTS	% grade
	Class attendance	0.75	0
	Midterm	0.5	30
	1 st seminar	0.75	20
	2 nd seminar	0.5	20
	Final exam	0.5	30
	Total	3	100

Midterm Exam Dates According to the schedule

Final Exam Dates According to the schedule

IV. WEEKLY CLASS SCHEDULE

Lectures

Week	Topic
1.	Introduction
2.	Neuromyths
3.	Brain imaging
4.	"ABC" of the brain
5.	Brain and behavior in different species.
6.	Brain and cognitive development.
7.	Lifelong development, learning and the plasticity of the brain
8.	1 st midterm exam
9.	How does the brain process language and speech
10.	Emotional brain
11.	Executive functions
12.	Social brain
13.	How does the brain function in developmental disorders
14.	Education for children with special needs
15.	2 nd midterm exam

Seminars

Week	Topic
1.	Introduction
2.	Seminars and student presentations
3.	Seminars and student presentations
4.	Seminars and student presentations
5.	Seminars and student presentations
6.	Seminars and student presentations
7.	Seminars and student presentations
8.	1 st midterm exam
9.	Seminars and student presentations
10.	Seminars and student presentations
11.	Seminars and student presentations
12.	Seminars and student presentations
13.	Seminars and student presentations
14.	Seminars and student presentations
15.	2 nd midterm exam