COURSE OUTLINE

1. OVERVIEW

FACULTY	FACULTY OF HUMANITIES AND SOCIAL SCIENCES		
SECTION	DEPARTMENT OF PRIMARY EDUCATION		
LEVEL OF STUDY	UNDERGRADUATE		
COURSE TITLE			
Neuroscience and Education			
COURSE CODE	ΨΧ1203	**SEMESTER**	6, 8
HOURS per WEEK	3	**ECTS**	4
COURSE CATEGORY	Elective	**COURSE TYPE**	General background
LANGUAGE OF INSTRUCTION AND EXAMINATIONS	Modern Greek	**PREREQUISITES**	
OFFERED TO ERASMUS	NO	**ECLASS PAGE**	https://eclass.uth.gr/courses/PRE_U_218/

2. LEARNING OUTCOMES

Learning Outcomes
Upon successful completion of the course, students are expected to: Understand the impact of genetic and environmental factors on the ability to learn (and the complex interaction between genes and the environment). Comprehend how the field of neuroscience can enhance teaching and learning practices. Recognize specific characteristics of the developing brain (in childhood and adolescence). Examine fundamental learning functions and issues related to brain function in cases of disorders that affect learning, such as ADHD, dyslexia, dyscalculia, etc. Explore issues related to brain and creativity. Approach topics concerning the role of emotion and how it influences cognitive processes.
General Competencies
Data and information search, analysis and synthesis, using IT as needed Production of novel scientific ideas Demonstration of social, professional and moral responsibility and sensitivity to gender issues Critical and self-critical thinking

3. CONTENT

Introduction to the human brain
Brief historical overview of the study of the brain-behavior relationship
Issues concerning the field of neuroscience in education
Brain plasticity
Brain imaging techniques
Learning, memory, attention, and related disorders
Language and Literacy: A neurobiological approach
Creativity, arts and imagination
Numeracy and mathematics – Dyscalculia
Emotions and socialization
Education, individual differences, and sex differences
Challenges and future directions of neuroeducation

4. TEACHING AND LEARNING METHODS ASSESSMENT

TEACHING MODE	In person

USE OF ICT	Teaching and learning: Slide show, video presentation Communication: Webmail / eClass / MSteams /		
COMPULSORY ATTENDANCE	NO	**MAXIMUM NUMBER OF ABSENCES:**	

TEACHING ORGANIZATION

Activity	*Semester Workload (hours)*
Lectures	39
Literature study & analysis	30
Study	30
Examination	2
Course total	***101***

EVALUATION

Type	*Format*	*Weighting*
Final written exam	Multiple Choice Questions Short Answer Questions Open-Ended Questions	100%

5. RECOMMENDED BIBLIOGRAPHY

Core textbooks (available through the *Eudoxus* service)

Βλάχος, Φ. (επιμ.) (2018). *Εγκέφαλος, μάθηση και ειδική αγωγή*. Αθήνα, εκδ. Gutenberg

Kandel, E.R., Schwartz, J.H., Jessell, T.M. (2018). *Νευροεπιστήμη και συμπεριφορά*. Μτφρ. Χ. Καζλαρής, Α. Καραμανλίδης, Γ. Παπαδόπουλος. Ηράκλειο, Πανεπιστημιακές Εκδόσεις Κρήτης

Kolb, B., Whishaw, I.Q. (2018). *Βασικές αρχές νευροψυχολογίας του ανθρώπου*. Μτφρ. Ε. Κοππάση, Α. Μυλωνά, επιμ. Σ. Γιακουμάκη. Αθήνα, εκδ. Gutenberg

Lyman, L.L. (2019). *Η Νευροεπιστήμη στην Εκπαίδευση*. Μτφρ. Χ. Καλλέργη, επιμ. Α. Λαζαρίδου. Αθήνα, εκδ. Ίων

Pinel, J.P. (2011). *Βιοψυχολογία*. Μτφρ. Γ. Κρομμύδας, επιμ. Α. Καστελλάκης, Δ. Τατά, Σ. Γιακουμάκη. Αθήνα, εκδ. Έλλην

Other books / Notes

Brown, A., Colin, M. (2004). Νευροεπιστήμη της γλώσσας. Μτφρ. Φ. Λέκκας, επιμ. Ρ. Πήτα. Αθήνα, εκδ. University Studio Press

Kolb, B., Whishaw, I.Q. (2009). Εγκέφαλος και Συμπεριφορά. Γενική επιμ. Α. Καστελλάκης, Γ. Παναγής. Αθήνα, εκδ. Broken Hills

Κολιάδης, Ε. (2002). Γνωστική ψυχολογία, γνωστική νευροεπιστήμη και εκπαιδευτική πράξη: μοντέλο επεξεργασίας πληροφοριών. Αυτοέκδοση

Σίμος, Π., Κομίλη, Α. (2003). Μέθοδοι έρευνας στην ψυχολογία και τη γνωστική νευροεπιστήμη. Αθήνα, εκδ. Παπαζήση

Scientific journals

Trends in Neuroscience and Education

Educational Neuroscience

Scientific articles

Other