

Psychology 470*: Advanced Topics in Behavioral Neuroscience

Neuroplasticity and Behavior: Principles and Applications

Fall Term 2019

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Office hours: by appointment

Classes: Time: Monday, 16:00 - 17:30
Wednesday, 14:30 - 16:00
Room: Mac-Corry Hall C508

Course Overview:

For the full essay, you are expected to:

- provide a brief introduction/summary of the background and specific research field, and why you think is important and of interest to you and a larger audience;
- identify three primary research articles that focus on this topic; one of these papers should have a more applied, practical focus;
- provide a summary of these three research articles, together with a critical assessment of the strengths and weaknesses of each article;
- complete a summary/conclusion section, integrating the i

SCHEDULE OF TOPICS

Date	Topic	Readings
SECTION I: COURSE INTRODUCTION		
Mon., Sep. 9	Introduction: The course	Course syllabus
Wed. Sep. 11	The history of neuroplasticity research	Stahnisch & Nitsch 2002
SECTION II: DEVELOPMENTAL NEUROPLASTICITY: HOW TO GROW A BRAIN		
Mon., Sep. 16	Plasticity of the developing CNS I	Insel 1995
Wed., Sep. 18	Plasticity of the developing CNS II (Quiz #1)	(same)
Mon., Sep. 23	No class (World Sleep Congress, Vancouver)	
Wed., Sep. 25	No class (World Sleep Congress, Vancouver) <i>(...time to think about your paper and proposal...)</i>	
SECTION III: NATURE, NURTURE, & EXPERIENCE-INDUCED BRAIN PLASTICITY		
Mon., Sep. 30	Enrichment and brain functions I: Fundamentals	Rosenzweig & Bennett 1996
Wed., Oct. 2	Enrichment and brain functions II: The human brain	Herholz & Zatorre 2012
Mon., Oct. 7	Enrichment and brain functions III: Applications	(R & B 1996, as above)
Wed., Oct. 9	NeuroTopic #1: Enrichment (presentations) (Quiz #2)	
Mon., Oct. 14	No class (Thanksgiving)	
Wed., Oct. 16	NeuroTopic #1: Enrichment (presentations)...continued	

SECTION IV: PLASTICITY BREAKS: CRITICAL (SENSITIVE) PERIODS

Mon., Oct. 21 Critical periods and plasticity none

SECTION V: PLASTICITY, LEARNING, AND MEMORY FORMATION

Wed., Oct. 23 Learning and memory mechanisms I Bear 2001

Mon., Oct. 28 **Fall term break; no class**

Wed., Oct. 30 Learning and memory mechanisms II Morris 2013

Paper proposal is due Thursday, Oct. 31 at 11:59 pm

Mon., Nov. 4 NeuroTopic #2: Memory (presentations) none

Wed., Nov. 6 ... continued (Quiz #3)

SECTION VI: ADULT NEUROGENESIS

Mon., Nov. 11 Neurogenesis I: History, evidence, and functions Baptisa & Abdrade 2018

Wed., Nov. 13 Neurogenesis II: The "Depression Link" same

SECTION VII: PLASTICITY, HUMAN HEALTH, AND WELLNESS

Mon., Nov. 18 Plasticity and brain repair

Wed., Nov. 20 Plasticity: life-long (brain) health and wellness

Mon., Nov. 25 NeuroTopic #3: Plasticity, health and wellness (Quiz #4)

Wed., Nov. 27 ...continued (USAT)

Papers are due on Friday, Nov. 29, at 11:59 pm

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Students in other Faculties and Schools who are enrolled in this course should refer to the protocol for their home Faculty.

If you need to request academic consideration for this course, you will be required to provide the name and email address of the instructor/coordinator. Please use the following:

Instructor/Coordinator Name:

Instructor/Coordinator email address: