# **Course Change Request**

Date Submitted: 08/23/23 3:30 pm

# Viewing: NEUR 328 : Cellular Neuroscience Lab

Last approved: 01/05/22 5:27 am

Last edit: 08/23/23 3:30 pm

Changes proposed by: gscott21

#### course

Interdisciplinary Program in Neuroscience (IPN)

Neuroscience (NEUR)

Programs referencing this

#### Select modification type:

### In Workflow

#### 1. NEUR Chair

- 2. SC Curriculum Committee
- 3. SC Assistant Dean
- 4. Assoc Provost-Undergraduate
- 5. Registrar-Courses
- 6. Banner

▼

## **Approval Path**

1. 08/26/23 11:51 am Saleet Jafri (sjafri): Approved for NEUR Chair

#### History

1. Jan 5, 2022 by Ginny Scott (gscott21)

#### <u>Substantial</u>

#### Are you completing this form on someone else's behalf?

Yes

#### **Requestor:**

Name		Extension	Email	
Greta Ann Herin		<del>3-9720</del>	<del>gherin@gmu.edu</del>	
<u>Greta Ann Herin</u>		<u>3-9720</u>	gherin@gmu.edu	
Effective Term:	Spring 2024			
Subject Code: NEUR - Neuro		science	Course Number:	328

#### **Bundled Courses:**

Is this course replacing another course? No				
Equivalent Courses:				
Catalog Title:	Cellular Neuroscience Lab			
Banner Title:	Cellular Neuroscience Lab			
Will section titles vary by semester?	No			
Credits:	<u>2</u> <del>1</del>			
Schedule Type:	Laboratory			
Hours of Lab or Studio	o per week: 3			
Repeatable:	May be only taken once for credit, limited to 3 Mattempts (N3) 3	1ax Allowable redits:		
Default Grade Mode:	Undergraduate Regular			
Recommended Prerequisite(s):				
Recommended Corequisite(s):				
Required Prerequisite(s) / Corequisite(s) (Updates only): NEUR 327 (may be ta	aken concurrently)			

#### **Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):**

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	NEUR 327	С	UG		Yes
Or		NEUR 327	XS	UG	)	

Registration Restrictions (Updates only):

**Registrar's Office Use Only - Registration Restrictions:** 

Field(s) of Study: Class(es): Level(s): Degree(s):

School(s):

### Catalog

#### **Description:**

Introduction to basic neurophysiology to optionally accompany NEUR 327 Cellular, Molecular and Pharmacological Neuroscience. This highly integrative course will allow students to learn and apply principles from across cellular neuroscience. Students will learn practical laboratory skills required for neurophysiological experiments. Students will non-invasively record and analyze biopotentials created by their own bodies. Students will learn computational analysis of central pattern generators through a gamified program. Students will use anesthetized animals to record and analyze biopotentials through intracellular and extracellular recordings.

#### Justification:

After running the new course over two semesters, the assignments and course work are more than originally anticipated. Instructor believes NEUR 328 meets time/effort requirement for a 2 cr lab.

Does this course cover material which No crosses into another department?

#### Learning Outcomes:

1. Understand the technology behind common lab equipment in order to best use it.

2. List and describe the purpose of the components of a bioamplification system

3. Explain the molecular biological underpinnings of myogenic potentials.

4. Describe central pattern generators and how ion channel composition effects their function.

5. Understand at a simple level the neuroanatomy of our model systems.

6. Explain the mechanism of the action potential (AP) and what determines the AP velocity.

7. Students will learn to troubleshoot by proposing logical hypotheses and testing them.

8. Synthesize and apply knowledge from multiple foundational courses in the neuroscience curriculum.

9. Write and follow protocols for laboratory procedures and record their activities in a laboratory notebook.

10. Competently utilize equipment in a neurobiological lab such as pipettors, pH meters, etc.

11. Make physiological saline solutions understanding the purpose for each component, making and using stock solutions and assuring the correct pH of solutions.

12. Record and analyze biopotentials non-invasively from humans.

13. Design a functional central pattern generator in a computer model of a fantastical creature.

14. Stimulate, record, and analyze biopotentials from anesthetized animals.

Will this course be scheduled as a crosslevel cross listed section?

#### **Attach Syllabus**

<u>NEUR 328 Syllabus for Curr Comm.pdf</u> <u>NEUR 328 Fall 2023 Syllabus.pdf</u>

Additional Attachments

Specialized Course Categories:

Additional
<b>Comments:</b>

Reviewer Comments

Key: 17408