

For instructions: http://registrar.gmu.edu/facultystaff/catalog-revisions/course/

Action Requester X Create NEW Modify (check al	Course Level:						
Title Credits		Repeat Status Schedule Type	Prereq/co Restrictio	ns Othe	de Mode er:		
College/School:	College of So	cience	Department	: IPN			
Submitted by:	Nadine Kabb	ani/Gwendolyn Lewis	Ext: 3-44	06	Email: glev	<u>bbani@gmu.edu;</u> vis13@gmu.edu	
Subject Code: NEUR Number: 101 Effective Term: X Fall (Do not list multiple codes or numbers. Each course proposal must have a separate form.) Effective Term: X Fall Subject Code: Spring Year 2018							
Title: Current Fulfills Mason Core Req? (undergrad only) Banner (30 characters max w/ spaces) Currently fulfills requirement New Introduction to Neuroscience X							
Credits:XFixed \rightarrow 3Repeat Status:XNot Repeatable (NR)(check one)Variable \rightarrow to(check one)Repeatable within degree (RD) \rightarrow Max credits allowed:Lec + Lab/Rct \rightarrow 0orRepeatable within term (RT) \rightarrow Max credits allowed:							
Grade Mode: (check one) X Regular (A, B, C, etc.) Schedule Type: (check one) X Lecture (LEC) Independent Study (IND) Research (RSC) Special (A, B C, etc. +IP) Special (A, B C, etc. +IP) Schedule Type: (check one) X Lecture (LEC) Seminar (SEM) Student Teaching (STC) Internship (INT) Internship (INT) Internship (INT) Studio (STU) Internship (INT) Studio (STU) Studio (DIS- 998/999)							
Prerequisite(s) Corequisite(s): None							
Restrictions Enforced by System: Major, College, Degree, Program, etc. Include Code(s). Equivalencies (check only as applicable): N/A YES, course is 100% equivalent to YES, course renumbered to or YES, course re							
Catalog Copy (Co	nsult University	Catalog for models)					
Description (No more than 60 words, use verb phrases and present tense) Notes (List additional information for the course) This course is for students interested in the science of the brain from its evolutionary origins to its role in health and behavior. We examine systems that make up the brain from neurons to circuits. We explore trends in neuroscience experimentation including neuroimaging, computational neuroscience, and neuropharmacology. Notes (List additional information for the course)							
Indicate number of contact hours: Hours of Lecture or Seminar per week: 3 Hours of Lab or Studio: When Offered: (check all that apply) X Fall Summer X Spring							
		Data		hool Approval		Date	
bepartment Approval Date College/School Approval Date Date							
those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.							
Unit Name		Unit Approval Name	Unit Approv	/er's Signatu	re	Date	

Undergraduate or Graduate Council Approval

Course Proposal Submitted to the College of Science Curriculum Committee (COSCC)

The form above is processed by the Office of the University Registrar. This second page is for the COSCC's reference. Please complete the applicable portions of this page to clearly communicate what the form above is requesting.

FOR ALL COURSES (required)

Course Number and Title: NEUR101, Introduction to Neuroscience

Date of Departmental Approval: August 16, 2017

FOR INACTIVATED/REINSTATED COURSES (required if inactivating/reinstating a course)

• Reason for Inactivating/Reinstating:

FOR MODIFIED COURSES (required if modifying a course)

- Summary of the Modification:
- Text before Modification (title, repeat status, catalog description, etc.):
- Text after Modification (title, repeat status, catalog description, etc.):
- Reason for the Modification:

FOR NEW COURSES (required if creating a new course)

• Reason for the New Course:

In order to enhance Mason's Core course offerings and expand the growth of the neuroscience program, we will be offering an introductory course in neuroscience to non-majors. This course is intended to serve as an Exploration Core Course in the Natural Sciences enriching both science and non-science majors with an understanding of the growing field of neuroscience and its social applications. In particular, the course provides a basic level overview of the organization of the nervous system and enables students important knowledge on how the brain works. The course should serve in helping students in science and non-science programs gain a better understanding of dynamic systems and evolution as they relate to the field of neuroscience.

• Relationship to Existing Programs:

NEUR101 will be offered through the IPN program and is intended for non-neuroscience majors. Because of the interdisciplinary nature of the topic of neuroscience, the proposed course (NEUR101) will encompass the basic concepts of the sciences shared in other program course offerings including topics such as cell biology, electrical properties, and chemical reactions.

• Relationship to Existing Courses:

This proposed course is unique and first ever Core neuroscience course. Because this course is intended for nonneuroscience majors the contents of the course will briefly examine key neuroscience topics that are covered in greater detail by neuroscience courses within the major. This includes courses such as NEUR327 (Cellular, Molecular, Neurophysiological, and Pharmacological Neuroscience) and NEUR335 (Developmental and Systems Neuroscience).

- Semester of Initial Offering: Fall 2018
- Proposed Instructors: Gwendolyn Lewis and Nadine Kabbani
- Insert Tentative Syllabus Below

(Sample Syllabus) NEUR 101: INTRODUCTION TO NEUROSCIENCE

Fall 2018

Instructor: Gwendolyn Lewis/Nadine Kabbani Instructor e-mail: <u>glewis13@gmu.edu</u>; nkabbani@gmu.edu Course Time: TBD Course Location: TBD Office: Krasnow Office Hours: TBD

Course Overview:

The nervous system controls everything we think, do, and feel. But how does it do this? And what happens when things go wrong? In this course, we will answer these questions by providing an introduction to the study of brain (neuroscience). We will cover basic concepts in neuroscience such as neurons, action potentials, and synapses and examine their involvement in everyday life. We will explore what neuroscience has already uncovered about human development, aging, and disease. The course is meant serves an introduction to neuroscience for students of all majors.

As a Mason Core Course this course aims to enhance your understanding of scientific inquiry by an introducing you to the tools and methods of neuroscience as well as the application of emerging neurotechnologies for personal, medical, and social purposes.

Textbook and Materials

Larimore, Jennifer L. *Neuroscience Basics: A guide to the brain's involvement in everyday activities.* Elsevier. 2017. ISBN: 0128110163

Learning Goals:

- Describe how the human nervous system is organized from development into adulthood.
- Understand the key mechanisms of brain activity such as action potentials and brain waves.
- Describe how the brain mediates our daily activities from sleep to eating to remembering.
- Appreciate how the nervous system controls complex activities such as movement.
- Understand the basis of key human brain diseases such as Alzheimer's and Parkinson's Disease.

Grading:

*Project Regular Exams (3x20% each) Final Exam (semi-cumulative)		10%			
		60%			
		30%			
Total Grade		100%			
Grading Scale:					
A+97-100%	B+ 87-89%	C+ 77-79%	D 60-69%	F	0-59%
A 90-96%	B 80-86%	C 70-76%			

***Project:** You will complete a <u>Neuroscience & Society</u> project during the semester. The goal of this assignment is for you apply your new knowledge to address a problem relating to heath and society. A list of possible problems is below. You may also choose a topic of interest to you.

-The criteria for diagnosis of a mental illness

-Drug and behavioral treatment for brain disease in children

- -Animal models of human brain disease- are they reliable?
- -Human-machine interface technologies
- -Pharmaceutical treatment for mood and personality disorders
- -Genetic testing for brain disease and assessment of human intelligence

For this project, you will research a topic through primary scientific literature and write a 2-page (single spaced) paper that defines and examines the problem through the lens of neuroscientific evidence. Further details and a discussion of the project will be provided in class early in the semester. The **project is due TBD** and is worth 10% of your final grade. There will be no extension on this deadline and it is advisable that you begin the assignment well before the due date.

Exams: There will be 3 regular exams and 1 cumulative final exam. These exams will consist of multiple choice and are aimed at testing your basic knowledge of the subject. Each exam will count for 20% and the final exam will account for 30% of your final grade.

Attendance and Make-up Policy

You are expected to attend class and participate in all discussions and activities, but attendance will not be recorded. Attendance is an integral part of this course, and absences will result in significant missed information. *NOTE:* You are responsible for all announcements and syllabus modifications made in class each week whether you are present or not.

Communication

If you need to contact me, please do so using e-mail **from your university account only**, and **include the course name in the subject line and include your name in the e-mail**. Check your e-mail and course Blackboard account daily and before each class meeting. I will use e-mail and Blackboard to communicate with you regarding changes related to the course, syllabus, and other essential information. You are responsible for all announcements posted and sent via Blackboard and e-mail, in addition to announcement make in class.

Student Conduct Policies

Be kind and respectful to your classmates, Disruptive, disrespectful, or rude behavior will lead to dismissal from class, a potential deduction of points from the course, and an unhappy me. You will also miss out on all the cool things we do in class!

Cell phones in the classroom: Please silence phones during class. Texting is not allowed. Cell phone use/ringing (other than for emergency) during class may result in deduction of points from the course participation grade.

Computers in the classroom: Each class will have the opportunity to set their own rules regarding the use of computers in the classroom, with anonymous (or not, up to you) student reporting being used as enforcement. Failure of students to observe their own rules will result deduction of points from the course.

Academic Integrity

Honesty and integrity are issues at the very core of this course and of science as a whole. George Mason has an honor code with clear guidelines for academic integrity. A few of the most important rules that pertain to this course are as follow: 1) All work submitted must be your own should be done individually unless explicitly stated otherwise. You will be encouraged to discuss ideas, collaborate, and brainstorm with your classmates, but actual assignments need to be completed individually. 2) When referencing the work of others (this includes published and non-published work or ideas), full credit must be given through appropriate citations. 3) If you are ever unsure about the rules for an assignment, ask for clarification. Cheating and plagiarism of any form is not tolerated. Plagiarism means using the exact words, opinions, or information from another person without giving the appropriate credit. Any offense will result in a grade of F for the course and will be dealt with in accordance with university regulations.

Disability Accommodations

If you have a documented learning disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Office of Disability Services (SUB I, Rm. 4205; 993-2474; http://ods.gmu.edu) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

Mason Diversity Statement*

George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty and staff. Through its curriculum, programs, policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth.

An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected.

* This is an abbreviated statement; full statement is available at http://ctfe.gmu.edu/professionaldevelopment/mason-diversity-statement/

Privacy and E-mail Use

Students must use their MasonLive email account to receive important University information, including communications related to this class. I will not respond to messages sent from or send messages to a non-Mason email address.

Add/Drop Deadlines

- Last day to add:
- Last day to drop (no tuition penalty):
- Last day to drop (33% tuition penalty):
- Last day to drop (67% tuition penalty):
- Selective withdrawal period:

Tentative Course Schedule

Fall 2018

Week	Date	Торіс	Readings			
1		Introduction/Building a Brain: Development	Chapter 1			
		Building a Brain: Development	Chapter 1			
2		Cells of the nervous system: Neurons	Chapter 2			
		Cells of the nervous system: Glia and others	Chapter 2			
3		Neurotransmitters and Synapses 1	Chapter 3			
		Neurotransmitters and Synapses 2	Chapter 3			
4		Exam 1	Ch. 1-3			
		Sensation 1: Vision/touch	Chapter 4			
5		Sensation 2: Hearing/smell	Chapter 4			
		Neural control of movement	Chapter 5			
6		Learning and Memory 1: Synaptic Plasticity	Chapter 6			
		Learning and Memory 2: Hippocampus	Chapter 6			
7		Exam 2	Ch. 4-6			
8		Columbus Day Holiday				
9		Blood: Feeding the Nervous System	Chapter 7			
		Emotion and Mood	Chapter 8			
10		Sleep and Circadian Rhythms	Chapter 9			
		Hormones and Reproduction	Chapter 10			
13		Thanksgiving Holiday				
		Exam 3	Ch. 7-10			
14		Foundations of Neuroscience Research 1:				
		History & Methods				
		Foundations of Neuroscience Research 2:	Neuroscience & Society			
		Emerging Technologies & Neuroethics	Project Due			
		Final Exam Review				
Final Exam:December TBD 2017						

NOTE: This schedule is subject to change at any time. You are responsible for all announcements and syllabus modifications made in class each week whether you are present or not.