

## **SYLLABUS for FUNCTIONAL NEUROANATOMY, Spring 2020**

NROSCI 1011 – 1030 (25672), SPRING TERM, 2020

MWF 9:00-9:50 AM, 232 Cathedral of Learning

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### **Course materials and communications**

There is no required textbook for this course. However, I do recommend *Neuroscience*, by Purves et al. (5<sup>th</sup> or 6<sup>th</sup> edition) and *The Central Nervous System, Structure and Function*, 4<sup>th</sup> ed., by Brodal.

Books on reserve in Langley Library:

- *Neuroscience*, by Purves et al., 5<sup>th</sup> or 6<sup>th</sup> edition
- *The Central Nervous System, Structure and Function*, 4<sup>th</sup> ed., by Brodal
- *Concise Text of Neuroscience*, by Kingsley
- *The Human Brain and Spinal Cord*, by Heimer
- *Principles of Neural Science*, 4<sup>th</sup> ed., by Kandel, Schwartz, and Jessell
- *Netter's Atlas of Neuroscience*, by Netter

You are responsible for all material presented during class, in the handouts, on the slides, and on CourseWeb.

Note: No course materials may be posted online to outside sites or used by anyone other than students taking this course during this term. Students violating this policy (e.g. posting course materials online) will be reported.

CourseWeb will be used to post course announcements. Important announcements may also be sent to your University of Pittsburgh email address. Announcements, information, course changes, and documents posted to CourseWeb are **REQUIRED** content for the course (unless you are told otherwise) **so please check the CourseWeb page often and pay attention to posted announcements.**

**Email:** Any official email communications regarding this course will be delivered to students' University of Pittsburgh email address, in accordance with the University of Pittsburgh email communication policy. <http://www.bc.pitt.edu/policies/policy/09/09-10-01.html>. Students who wish to forward their Pitt email to another account do so at their own risk. Please see the University Email Communication Policy in the Academic Policies section near the end of the syllabus.

I endeavor to respond to all emails within 48 business hours. If I have not responded to an email you sent me by then, feel free to email me again. Keep in mind, however, that close to exam dates I may not be able to answer your questions about course material via email, due to the volume of such emails I receive right before exams.

## Course Grades

The course material is divided into four blocks (see schedule at end of syllabus). Your semester grade will be based on the following:

- 1) One exam per block (4 exams total; 100 points per exam)
- 2) One quiz per block (4 quizzes total; 10 points per quiz)
- 3) One set of case study questions per block (4 case studies total; 4 points per case study)

The total number of points you earn will be divided by the total points possible (456) to determine your course grade (as a percent). A schedule that includes dates of exams and the availability/due dates for quizzes and assignments is at the end of this syllabus.

Course grades will be determined based on the following ranges:

A+	97-100%	B+	87-89%	C+	77-79%	D+	67-69%	F	< 60%
A	93-96%	B	83-86%	C	73-76%	D	63-66%		
A-	90-92%	B-	80-82%	C-	70-72%	D-	60-62%		

**Please note: no exams, quizzes, or sets of case study questions may be dropped.**

## Exams and exam review sessions

There will be four exams during the course, one per block, all of which will be taken during the class periods on the dates indicated on the schedule at the end of the syllabus. Barring unforeseen circumstances (e.g. blizzards), these dates will not change. The format for these exams may include multiple choice, true/false, drawings, and short-answer written questions. The content of these questions will be based on the material in the block for that exam. The exams will not be cumulative, except for the fact that the material learned later in the course will naturally build on material covered earlier. There will be no final exam for this course; the exam given during finals week will be based on the material from Block 4. **You may NOT drop any exams.**

### Pre-exam review sessions:

Review sessions will be held prior to each exam. The dates and times for these pre-exam review sessions will be indicated on CourseWeb once the rooms for them have been reserved. The pre-exam review sessions will include answering students' questions about the material, so please bring any questions you have.

### Post-exam viewing sessions:

Exams will be available for students to view only until the subsequent exam is taken. Grades for exams will be posted on CourseWeb after all of the exams have been graded, and you may view your exam during the post-exam viewing sessions that will be scheduled after exam scores have been released. The dates and times for these post-exam viewing sessions will be indicated on CourseWeb once the rooms for them have been scheduled. If you are unable to make it to these sessions, contact the instructor or the graduate TA to schedule an appointment to view your exam, or you may view it during the weekly office hours. No exam questions may be copied or photographed in any way, and exams may not be removed from classrooms, offices, or review sessions.

## Quizzes

There will be a total of four online quizzes (one per block), each worth 10 points. **You may NOT drop any quizzes.** The purposes of the quizzes include encouraging you to keep up with the material, highlighting topics you might be struggling with, and becoming familiar with the formats of questions that will be on the exams (though please note that the quizzes do not include drawings or short-answer/written format questions; they are multiple-choice or true/false only). Answers to these questions will be **due by 11:59 PM** on the dates

indicated on the course schedule at the end of the syllabus. The quizzes are open-book/notes. You can take each quiz only once, and once you start it you will have 30 minutes to complete it. Answers to the quiz questions will be made available after the quiz is due. You may find the questions and answers by clicking on the number that indicates your quiz score on CourseWeb.

## Case studies

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During each block, a case study will be posted on CourseWeb that complements and expands on some of the material covered in that block. The purpose of these case studies is to augment your understanding of some of the material we cover during that block. Several questions about the case study will be posted on CourseWeb, and answers to these questions will be **due by 11:59 PM** on the dates indicated on the course schedule (though note that the dates case studies are presented and the questions are due are subject to change, according to the pacing of the material during each block). The case study questions can be answered using any resources, including, but not limited to, the course materials. Once you begin the case study, you will have two hours during which to complete it. Students must finish answering the case study questions on CourseWeb **BEFORE 11:59 PM** on the indicated due dates to get points for correct answers. A given case study will be closed (*i.e.* no more questions can be answered) at 11:59 PM on the day it is due and will not be available thereafter. Answers to the case study questions will be made available after the case study is due. You may find the questions and answers by clicking on the number that indicates your score on CourseWeb.

## Scientific literature readings

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For blocks 2-4, a paper from the scientific literature will be posted on CourseWeb. These papers will introduce you to some of the research topics we will touch on in class and will expose you to recent research in the field of neuroscience. You are responsible for reading these papers, and there will be basic questions from each paper on the exam for the relevant block. These papers will not be discussed directly in class.

## Exams, quizzes, and case study questions must be taken/completed on schedule

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**You are expected to take each exam on its scheduled date, at its scheduled time, as indicated on the schedule at the end of the syllabus.** If unanticipated circumstances (*e.g.*, illness, death in the family) make it impossible for you to take an exam on its scheduled date and time, **you must** contact Dr. Fanselow **BEFORE** the scheduled date and time to make other arrangements. It is preferable that you speak with me directly but, at a minimum, you must send me an email ([fanselow@pitt.edu](mailto:fanselow@pitt.edu)) and/or leave a message on my office phone (412-383-6051) before the exam. Also, the circumstances that prevent you from being present for an exam must be documented (*e.g.*, a letter from physician, obituary). I understand that some students may need to miss an exam due to interviews for graduate, medical, or other professional schools. If this is the case, you should make arrangements with me at least two weeks prior to the exam so we can find a time for you to take it, either before you leave or after you return. You will receive a zero for the exam if you do not follow these policies. **There will be no exceptions.**

Quizzes and case study questions will be available on CourseWeb by approximately 7:00 PM on the dates indicated on the course schedule at the end of the syllabus, and they are **due by 11:59 PM** several days later, as indicated on the course schedule. Students must submit their answers on CourseWeb **BEFORE 11:59 PM** on the indicated due dates in order to get points for correct answers. Each quiz and set of case study questions will be closed (*i.e.* unavailable) at 11:59 PM on the day it is due and will not be available thereafter. If you experience technical problems with accessing a quiz or set of case study questions, or while taking/answering it, email me ([fanselow@pitt.edu](mailto:fanselow@pitt.edu)) immediately; this must be done **BEFORE** the quiz or set of case study questions is due. Please also take a screenshot of the error message, including the time when you experienced it. I encourage you not to leave quizzes and case study questions until the last minute, in case you do have technical issues.

**Exam accommodations that involve taking exams in the testing center:**

If you have exam accommodations through Disability Resources and Services that allow you to take exams in the University of Pittsburgh Testing Center, please schedule all of these with the Testing Center at the beginning of the term. This prevents missed exam scheduling deadlines during the term. Barring unforeseen, highly unusual circumstances, (e.g. blizzards) the exam dates and times will not change.

**Office hours and appointments**

Office hours for this course will be held weekly in my office, on the days and times indicated on the first page of the syllabus (subject to occasional changes during the term, when necessary). Additionally, I am available to meet with you outside of these times to address any questions you may have regarding the material covered in lectures or assignments. If you would like to set up an appointment, please send me an email that contains several times that are best for you to meet during the upcoming week, and I will get back to you regarding which of those times would fit into my schedule or suggest other times, if necessary. You are also welcome to contact any of the TAs for this course and schedule a time to meet with them on campus at a time and location that is convenient for them. I cannot guarantee I will have time to meet if contacted with less than 48 business hours' notice, especially in the week or so prior to an exam. Also, be aware that if I or the TAs set a time to meet with you, we do reserve that time for you. Please be considerate and be on time, or give at least 24 business hours' notice if you need to cancel.

**Academic policies**

**Academic Integrity:** Cheating/plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, noted below, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the quiz, exam or paper will be imposed. (For the full Academic Integrity policy, go to [www.provost.pitt.edu/info/ai1.html](http://www.provost.pitt.edu/info/ai1.html).) Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries, phones, "smart" watches, programmable calculators, and other devices that could be used to retrieve, send, or store information such as course material.

The integrity of the academic process requires fair and impartial evaluation on the part of faculty and honest academic conduct on the part of students. To this end, students are expected to conduct themselves at a high level of responsibility in the fulfillment of the course of their study. It is the corresponding responsibility of faculty to make clear to students those standards by which students will be evaluated, and the resources permissible for use by students during the course of their study and evaluation. The educational process is perceived as a joint faculty-student enterprise which will perforce involve professional judgment by faculty and may involve – without penalty- reasoned exception by students to the data or views offered by faculty.

**Email Communication Policy:** Each student is issued a University e-mail address ([username@pitt.edu](mailto:username@pitt.edu)) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to <http://accounts.pitt.edu>, log into your account, click on **Edit Forwarding Addresses**, and follow the instructions on the page. Be sure to log out of your account when you have finished. (For the full E-mail Communication Policy, go to [www.bc.pitt.edu/policies/policy/09/09-10-01.html](http://www.bc.pitt.edu/policies/policy/09/09-10-01.html).)

**Disability Services:** If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 140 William Pitt Union, 412-648-7890/412-383-3346 (Fax), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

**Accessibility:** Blackboard is ADA Compliant and has fully implemented the final accessibility standards for electronic and information technology covered by Section 508 of the Rehabilitation Act Amendments of 1998. Please note that, due to the flexibility provided in this product, it is possible for some material to inadvertently fall outside of these guidelines.

**Copyright Notice:** These materials may be protected by copyright. United States copyright law, 17 USC section 101, et seq., in addition to University policy and procedures, prohibit unauthorized duplication or retransmission of course materials. See [Library of Congress Copyright Office](#) and the [University Copyright Policy](#). None of the materials for this course may be posted on line in any form.

**Statement on Classroom Recording:** To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

**Prohibition Against Electronic Devices During Exams:** All electronic devices capable of sending, receiving, or storing information are expressly forbidden from use during exams in this course. This includes cell phones, text messaging devices, iPods, iPads, PDAs, cell watches, and similar devices that may not even have been invented yet.

**Natural Science General Education Requirement:** This course fulfills one Dietrich School of Arts and Sciences Natural Science General Education Requirement (GER) as described for the GERs starting Fall 2018 (term 2191). That GER reads as follows: *Three Courses in the Natural Sciences:* These will be courses that introduce students to scientific principles and concepts rather than offering a simple codification of facts in a discipline or a history of a discipline. The courses may be interdisciplinary, and no more than two courses may have the same primary departmental sponsor.

**COURSE SCHEDULE for FUNCTIONAL NEUROANATOMY, Spring 2020**

**PLEASE NOTE:** the material we cover in each block may vary slightly from this schedule, depending on the durations of lectures and discussions in class. Exams, quizzes, and case studies will only include material we have covered prior to the exam or due date, and these dates will not change (barring unforeseen circumstances).

**BLOCK 1: Introduction and gross neuroanatomy**

- UNIT 1: Introduction to neuroanatomy
- UNIT 2: Development of the nervous system
- UNIT 3: Spinal cord and brainstem anatomy
- UNIT 4: CNS vasculature, ventricles meninges, and sinuses
- UNIT 5: Higher centers

**QUIZ 1:** posted Thursday, 1/16; due by 11:59 PM on Wednesday, 1/22

**BLOCK 1 CASE STUDY:** posted Friday, 1/24; due by 11:59 PM on Tuesday, 1/28

**EXAM 1:** Friday, 1/31 (in class)

**BLOCK 2: Sensory systems**

- UNIT 6: Visual system
- UNIT 7: Somatosensory system
- UNIT 8: Auditory system
- UNIT 9: Chemical senses

**QUIZ 2:** posted on Thursday, 2/13; due by 11:59 PM on Monday, 2/17

**BLOCK 2 CASE STUDY:** posted Tuesday, 2/11; due by 11:59 PM on Monday, 2/17

**BLOCK 2 PAPER:** posted on Friday, 2/14

**EXAM 2:** Monday, 2/24 (in class)

**BLOCK 3: Motor system**

- UNIT 10: Peripheral motor system and descending motor pathways
- UNIT 11: Proprioception and reflexes
- UNIT 12: Basal ganglia
- UNIT 13: Cerebellum

**QUIZ 3:** posted on Monday, 3/16; due by 11:59 PM on Thursday, 3/19

**BLOCK 3 CASE STUDY:** posted Monday, 3/2; due by 11:59 PM on Thursday, 3/5

**BLOCK 3 PAPER:** posted on Wednesday, 3/4

**EXAM 3:** Monday, 3/23 (in class)

**BLOCK 4: Higher-order functions**

- UNIT 14: Vestibular system
- UNIT 15: Eye movements
- UNIT 16: Autonomic nervous system
- UNIT 17: Hypothalamus
- UNIT 18: Brainstem modulation
- UNIT 19: Limbic system and hippocampus
- UNIT 20: Brain imaging and brain pathology

**QUIZ 4:** posted on Thursday, 4/9; due by 11:59 PM on Monday, 4/13

**BLOCK 4 CASE STUDY:** posted Thursday, 4/2; due by 11:59 PM on Monday, 4/6

**BLOCK 4 PAPER:** posted Wednesday, 4/15

**EXAM 4:** Thursday, 4/23, 10:00-11:50 AM (Note: while this exam is given during finals week, it is not cumulative)