

Neuroanatomy BIPN 160 & BGGN254, Winter 2022

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Office Hours: Fri 3-4pm

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Class Meeting Days: T & Th

Class Meeting Hours: 3:30-4:50pm

Class Location: Ledden Auditorium

Study sections:	A01 Mon:	1-1:50am, WLH 2204	Daisy
	A02	2-2:50am, WLH 2204	Emma
	A03 Wed:	3-3:50pm, SOLIS 111	Hyeoseok
	A04	4-4:50pm, SOLIS 111	Hyeoseok
	A05 Fri:	11-11:50am, SOLIS 110	Sobyn
	A06	3-3:50pm, WLH 2206	Nathan

No sections the first week, or the week of an exam.

Electronic communication:

If you email Dr. Root, please put BIPN160 as the subject. Logistical emails can be sent to Dr. Root, but please do not email questions about course content – those emails may be ignored. Instead, please ask questions during office hours, study sessions, after class. Lecture slides will be available on Canvas before lectures and the lecture will be podcasted.

Course goals:

The goal of the course is to give students a fundamental understanding of the anatomy of the human brain and peripheral nervous system as it relates to neural circuits, behavior, perception and cognition. There will be an emphasis on how discovery happens, and thus, we will also examine research from animals. The course will include historical approaches and findings as well as modern techniques and questions. Students will be able to anatomically identify key areas in the human brain involved in specific functions, and the course will explore the evidence that implies the function of key brain areas.

Learning objectives:

1. Identify anatomy and recall function of key brain areas and peripheral nerves.
2. Identify key experiments that allow us to assign functions to brain areas.
3. Implement techniques and tools to dissect neuroanatomy and function.
4. Construct knowledge from evidence

iClickers

Clicker will be used in the lecture to provide engagement and assess learning. Participation is encouraged but not required. No credit will be given for participation. **Please set frequency to CA.**

Learning Materials

This class is not designed from a textbook and one is not required. Course material is mostly taken from a few sources, including:

- 1) The Human Brain: An introduction to its functional anatomy, by Nolte.
- 2) The Brain: An introduction to functional Neuroanatomy, by Watson, Kirkcaldie and Paxinos.
- 3) Principles of Neurobiology, by Liqun Luo

Course scope and outline:

- 1/10 L1: Introduction, Neurons and Glia, basic anatomy
1/12 L2: Techniques to study neuroanatomy and function
- 1/17 L3: Development of the spinal cord and brain
1/19 L4: Spinal cord and periphery
- 1/24 L5: Cranial nerves
1/26 **Exam 1**
- 1/28 *Review session for first exam at 4pm. This is optional*
- 1/31 L6: Brainstem, Thalamus
2/2 L7: Sensory cortex, somatosensory and auditory systems
- 2/3 *Deadline to drop class without a W*
- 2/7 L8: Visual system
2/9 L9: Chemosensory systems
- 2/11 *Review session for second exam at 4pm. This is optional*
- 2/14 **Exam 2**
2/16 L10: Hedonics: Ventral striatum, amygdala, and others:
Deadline to drop class with a W
- 2/21 L11: Hypothalamus: Homeostasis and drives
2/23 L12: Brain areas for sleep and arousal
- 2/25 *Review session for third exam at 4pm. This is optional*
- 2/28 **Exam 3**
3/2 L13: Movement control: basal ganglion, and motor cortex

3/7 L14: Cerebellum
3/9 L15: Hippocampus: Learning and memory

3/14 L16: Frontal cortices and higher order functions
3/16 L17: Ventricles and Blood supply

3/18 *Review session for final exam at 4pm. This is optional*

3/21 Final Exam, 3-6pm, location TBD.

Problem sets. Problem sets are part of your grade. There will be 7 problem sets, worth 10 points each. They will be graded for effort/completion and not accuracy. If you earnestly attempted to answer all questions you will get full credit. Points will be deducted for unanswered questions or answers that are not sincere attempts. Problem sets will be accepted late with the penalty of 2 points per day.

Exams. There will be three midterm exams worth 100 points and a comprehensive final worth 150 points. Your lowest exam grade will be dropped, not including the final. You may skip one midterm if you want to drop that exam. All students must take the final. Exams will be based off of lecture material and will contain a combination of multiple choice and short answer questions.

One note sheet will be allowed during each exam. Note sheet must be standard 8.5 x 10.5 paper or smaller and **single sided**.

Study sections: Sections are voluntary and begin the second week. You are free to attend any section and go between them as needed. Lecture material will be reviewed, questions answered, and problem sets discussed. Attendance will be taken and extra credit will be given for attendance such that each week is worth 2 points.

Basis for Final Grade. There will be three exams during normal class time worth 100 points each and one comprehensive final exam worth 150 points. Therefore, the grade will be based on 420 points: 200 (exams) + 150(final) + 70(P.S.) = 420.

The grading scale below will be used, however, grades will likely be curved to raise the average grade if necessary. The average grade target is a B or B+.

Tentative Grading Scale:

90 – 100%	A+, A, A-
80 – 89%	B+, B, B-
65 – 79%	C+, C, C-
50 – 64%	D+, D, D-
0 – 49%	F

Plus and minus signs will be added for grades that are 3 percentage points of the nearest cutoff. Percentage will be rounded to two significant digits, so a 93.4 will be a 93. The grade of A+ will be reserved for the top ~5% of students

Students enrolled in BGGN254 will have two additional take home exams for each of the two midterms. The take home exams will be short essay format and you are welcome to use your

notes. Each one will be worth 50 points. Therefore, you will have a total of 560, rather than 460, points for the course.

Missed exams: Do not miss exams. You are expected to take the exams when they are scheduled during normal class time. Make-up exams will only be arranged in extreme situations. Any other exceptions will be decided on a case-by-case basis.

Grading objections and regrades: If you have an objection to a **particular exam question**, you have 24 hours from the end of the exam to raise your concerns. Objections to exam questions must be made by email, with a written argument of why that question was unfair. A decision will then be made whether to exclude that question for the entire class.

If you have objections to the grading of a question on **your** exam, you can discuss with Dr. Root during office hours or by email. **Regrades will only be available within a week after you receive the exam grade.** Note that a regrade may result in a gain or loss of points. Graded exams will be randomly copied before being returned. If you are caught altering your answer to an exam question for a regrade, you will be given a zero on the entire exam and reported for academic dishonesty.

Violations of Academic Integrity: Violations include, but are not limited to:

- Cheating: Intentionally using or attempting to use unauthorized materials, information, notes, study aids, or other devices in during exams.
- Fabrication and Falsification: Intentional and unauthorized alteration or invention of any information or citation in an academic exercise. Falsification is a matter of inventing or counterfeiting information for use in any academic exercise.
- Plagiarism: Intentionally or knowingly presenting the work of another as one's own (i.e., without proper acknowledgment of the source).
- Abuse of Academic Materials: Intentionally or knowingly destroying, stealing, or making inaccessible library or other academic resource materials.
- Complicity in Academic Dishonesty: Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.