

Looking Inside the Disordered Brain | NEUROSCI 277.01.Fa25

Summary

What brain circuits give rise to the dazzling diversity of human behavior, and how do even subtle disturbances within these circuits lead to abnormal behavior or psychopathology?

Using a combination of research strategies, we will address these questions by first establishing how the brain through specific circuits creates order from the signals we receive from our ever changing internal and external worlds. We then will look inside the disordered brain and map specific deficits within these circuits onto psychopathology.

This course will provide students with a working knowledge of our rapidly evolving understanding of the brain circuits supporting human social, emotional and cognitive behavior, and disruptions within specific circuits associated with related psychopathology.

The course will feature three neuroanatomical circuits (corticolimbic, corticostriatal, corticohippocampal) and their principle behavioral correlates (e.g., arousal, reward, memory & planning) as well as the pathological expression of dysfunction within each

circuit (e.g., depression, phobia, social anxiety, OCD, PTSD, psychopathy, autism, aggression, schizophrenia & more).

Required Textbook

Looking Inside the Disordered Brain (ISBN: 9780878939794)

If you prefer, an e-book may be purchased directly from Oxford University Press at a discount using the promo code EBOOK25. On average, direct purchases save 54% on the retail price of the print book.

Course Outline

You are expected to read the preface and Chapter 1 of our textbook on your own *before* our first lecture at which point, we will begin to closely follow the outline below.

Unit I: Corticolimbic Circuit

Chapter 2. Anatomy

Chapter 3. Order

Chapter 4. Disorder

Unit II: Corticostriatal Circuit

Chapter 5. Anatomy

Chapter 6. Order

Chapter 7. Disorder

Unit III: Corticohippocampal Circuit

Chapter 8. Anatomy

Chapter 9. Order

Chapter 10. Disorder

Lectures

Tu/Th 11:45 am - 1:00 pm in LSRC B101 (Love Auditorium)

Exams

There will be three circuit-specific exams and a cumulative final exam.

Each circuit-specific exam will be administered during our regularly scheduled class times on:

September 25th - Unit I

October 30th - Unit II

December 4th - Unit III

The final exam will be administered from 2 pm - 5 pm on:

December 12th

The final exam will also serve as the “make-up” for any missed circuit-specific exams.

The exams are **NOT** open-book or open-notes.

Testing accommodations

Accommodations for tests (e.g., extra time) will be honored per student's registered arrangements with the Student Disability Access Office (SDAO) and/or Academic Resource Center (ARC) through the Duke Testing Center. The Testing Center operates by appointment only and appointments must be made at least 7 consecutive days in advance, but please schedule your appointments as far in advance as possible. You will not be able to make an appointment until you have submitted a Semester Request with the SDAO or completed screening at the ARC and your accommodations or supports have been approved. If you have not already done so, promptly submit a Semester Request to the SDAO or schedule your screening with the ARC to make your appointment in time.

- For instructions on how to make an appointment at the Testing Center, visit their website at <https://testingcenter.duke.edu>.
- For instructions on how to register with SDAO, visit their website at <https://access.duke.edu/requests>.
- For instructions on how to schedule a screening with the ARC, visit their website at <https://arc.duke.edu/ld-adhd/overview>.

Grading

The three circuit-specific exams each will represent one-third of your overall course grade.

Final letter grades will be determined using the Duke default grading scheme as follows:

A+	98.00-100%	B+	87.00-89.99%	C+	77.00-79.99%	D+	67.00-69.99%
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A	93.00-97.99%	B	83.00-86.99%	C	73.00-76.99%	D	63.00-66.99%
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A-	90.00-92.99%	B-	80.00-82.99%	C-	70.00-72.99%	D-	60.00-62.99%
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If you are happy with the average grade across your three circuit-specific exams, you can skip the cumulative final.

Alternatively, you can choose to take the cumulative final and have that grade replace your lowest grade on the three circuit-specific exams.

Duke Community Standard

Every student is expected to uphold the Duke Community Standard as follows:

- *I will not lie, cheat, or steal in my academic endeavors;*
- *I will conduct myself honorably in all my endeavors; and*
- *I will act if the Standard is compromised.*

Teaching Assistants

We are fortunate to have two graduate student TAs who will be available to field questions and facilitate review of course material by appointment.

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