Course Description:

Examines neuroscience approaches to psychological disorders such as depression, anxiety disorders, and schizophrenia. This seminar will draw upon primary scientific research literature addressing neurophysiological and cognitive neuroscience approaches to psychopathology. Both promises and limitations of current knowledge will be evaluated.

Prerequisite: one 200-level course in biological psychology (Psych 217, 250, 260, or BMC Psych 218)

Course Requirements:

- **Presentations** (30% of course grade). Each student will be expected to deliver two 20-minute oral presentations during the course of the semester. Each presentation will focus in-depth on a specific primary research report related to that day’s topic. The student will be expected to identify and locate a suitable research report with the help of the instructor, and to present the background, main methods, results, and conclusions of the study to the rest of the class, along with the student’s own critical evaluation of the study.

- **Discussion questions** (20% of course grade). Students will be expected to submit brief discussion questions based on the week’s reading. These discussion questions will be circulated to the class and will serve as the basis for class discussion. Each student will be expected to submit discussion questions for 20 of the 25 class periods with assigned readings.

- **Final paper** (30% of course grade). **Due on April 29 in class.** Each student will submit a final paper on a topic of his or her choosing. In the paper, the student must identify an unresolved question about the brain and a psychological disorder and must propose a research study to address that unresolved question. The paper should review the existing scholarly research on the topic to date, identify the unresolved issue and explain why it is important, propose a feasible study that would further our understanding, and finally explain the limitations of the proposed study.

- **Participation in discussion** (20% of course grade). Students are expected to attend class regularly and to be active participants in discussion.
Course Schedule:

I. Examining assumptions

Jan. 21. Introduction to course

Jan. 26. Should neurology and psychiatry merge?


Jan. 28. The medical model of mental illness


II. Depression

Feb. 2. Overview


Feb. 4. Frontal lobe abnormalities

Feb. 9. **Dysregulation of homeostatic systems**


Feb. 11. **Neurogenesis hypothesis**


Feb. 16. **Genetic influences**


Feb. 18. **Seasonal affective disorder; bipolar disorder**


Feb. 23. **Premenstrual and postpartum depression**


Feb. 25. **Experimental treatments**


**III. Anxiety disorders**

Mar. 2. **Fear and phobias**


Mar. 4. **Panic**


Mar. 16. **Post-traumatic stress disorder**


Mar. 18. **Obsessive-compulsive disorder**


**IV. Schizophrenia**

Mar. 23. **Frontal lobe abnormalities**


Mar. 25. Temporal lobe abnormalities


Mar. 30. Disruptions in regional connectivity


Apr. 1. Neurochemical aspects


Apr. 6. Neurodevelopmental hypothesis


Apr. 8. Genetic contributions


V. Autism

Apr. 13. Autism and the social brain


Apr. 15. **Gender and hormones in autism**


Apr. 20. **Origins of autism: genetic factors and the vaccine debate**


**VI. Attention-deficit disorder**

Apr. 22. **Neurobiological approaches to ADHD**


**VII. Substance abuse and addiction**

Apr. 27. **Neural substrates of abuse and addiction**


**VIII. Conclusions and critique**

Apr. 29. Wrap-up.