

Psych 4003: Psychosis and the Brain
MW, 4-5:15, A&S Building room 203

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Course Description

The goal of this course is to better understand the nature of psychosis. Psychotic symptoms include delusional beliefs and hallucinations. Psychosis occurs in so-called psychotic disorders such as Schizophrenia. However, it can occur in many other disorders/conditions as well. Further, some people without any clear disorder also might have psychotic, or at least psychotic-like, symptoms or traits. The most well replicated neurobiological correlate of psychosis in psychotic disorders is an alteration of the neurotransmitter dopamine in a part of the brain called the striatum. Hence, understanding the nature of striatal dopamine functioning might be essential to understanding the nature of psychosis. The current course will take a translational approach to understanding psychosis, meaning that it will focus on basic understanding, in this instance of striatal dopamine functioning, and then use that basic understanding to understand a clinical phenomenon, psychosis.

This course will have 3 sections. In the first section, we will examine the nature of striatal dopamine functioning. In the second section, we will examine the nature of psychotic symptoms in psychotic disorders. In the last section, we will examine the nature of psychotic and psychotic-like symptoms in non-psychotic disorders and in the general population.

Overall course structure:

<u>Section 1</u>	<u>Section 2</u>	<u>Section 3</u>	
Course note review/lecture	Course note review/lecture	Course note review/lecture	
Test 1	Test 1	Test 1	
Reading research articles	Reading research articles	Reading research articles	Final Exam Cumulative
Test 2	Test 2	Test 2	

Within each section of the course, we will first focus on the course notes. Then you will be tested over that material (Test 1). Then we will use that material to read and understand multiple recent research articles on that topic. Then at the end of that section, you will be tested over all of that section material again, which will again be primarily the course notes, but also the main take home points of the articles in that section (Test 2).

At the end of the semester, the final exam will be cumulative covering all of the course notes. Hence, you will be tested three times over the course note material (Test 1, Test 2, & final). This should help you retain the information from this course.

And again you will also use the course note material to help read, understand, and discuss the research articles within each section. This will also help further your understanding, deep encoding, and retention of the material from this course.

Further, a goal of this course is to familiarize you with cutting edge clinical neuroscience research by reading actual primary source research articles. Arguably the best way to learn about psychological science is to read and discuss research journal articles. This course will give you a deeper familiarity with clinical neuroscience research methods and their strengths and weaknesses. It will also give you a deeper familiarity with research results to understand the strengths and weaknesses of our current understanding (in contrast, simply relying on textbooks can give a misleading picture of the strengths and weaknesses of our current knowledge base). At the same time, the course note material will help make these readings more accessible.

You will take quizzes over some of these articles, with 4 article quizzes in each section of the course. For one of these articles in each section, you will be part of a group who will answer questions and discuss the article in detail in class. For another article, once during the semester, you will present on the article to the rest of the class; you will meet with me individually to talk about the article before you present to the class.

Another advantage of reading research articles is that they can be much more academically challenging to read than simply reading textbooks. Not only will you read research articles, but the in-class discussions will help to make sure that you think critically and independently about what you read. Overall, this course will try to improve your basic academic skills such as reading and understanding primary sources, thinking critically about psychological research, and communicating your understanding to others.

Course Requirements and Grades

6 Sections tests (5% each)	30%
1 Final exam	15%
12 Quizzes (2.5% each)	30%
3 In-class discussions (5% each)	15%
1 In-class presentation	10%

Section tests and Final exam

Question format will be multiple choice. You will be tested 3 times over all course note material, twice within each course section, and then a third time on the final exam, with the final exam being cumulative. Also the second test within a section will also cover the main points from the course readings from that section.

Course notes will be distributed to you as pdfs. Three classes within each section will be devoted to lecturing over and at least hitting the highlights of the course note material in order to help you learn the material. It is recommended that you read over the course notes before the lecture and be prepared to ask questions if anything from the course notes is not clear.

Test/exam questions will be written to insure that someone who has not studied (or only studied by glancing at the notes) would only be able to answer the questions by guessing. Based on previous experience, it is expected that the tests will be challenging and that people who are unprepared will likely fail the test.

Quizzes

Within each section, there will be 4 research articles assigned to the whole class. You will have a quiz over each of these 4 articles, with one quiz at the beginning of 4 particular class periods. The goal of the quizzes is to make sure you read and understood the article. The quiz will be written such that if you carefully read the article and reviewed it before class that you should get a perfect score (with a “perfect score” for the quizzes meaning that you get 5 correct out of 6 questions). If you have any questions about the articles before the quiz, let me know.

In-class discussion

Within each of the 3 sections, you and several other people will be assigned to discuss one of the 4 assigned articles during a particular class period (you need to let me know immediately if for some reason your assigned dates do not work). Again, other people will be assigned the same article as you and will be discussing it as well. But this is not a group assignment and you will be graded individually based only on your own contribution. You are expected to be able to come in and talk about the goals of the research, the main aspects of the methods, the main aspects of the results, the main conclusions, and the strengths and weaknesses of the research. You are not allowed to consult the article or any written notes during the in-class discussion. This assignment will help us review the assigned articles in class in detail, which is essential to really understand the articles and the nature of the research. It will also help insure that you are successfully understanding the articles and thinking critically about your reading. It will also help develop your verbal discussion skills.

You will be graded first by how well you demonstrate you understood the article. If necessary, I will ask you questions to assess how well you read & understood the article (e.g., What were the main hypotheses? What were some of the main parts of the methods? For example, how did they measure a particular variable? Why did they decide to test things a certain way? What were the results? How did they interpret the results? Were there any acknowledged limitations of the research? etc). I will be looking for clear evidence that you read the article and understood it well. You are expected to understand the articles before the in-class discussion. **If something is not clear or if you have questions, you need to ask me about it before the date of your in-class discussion for that article.** If you read the article and understand it, you should get full points through your participation. If you talk to me about the article beforehand and show me that you read the article and understood it, I will count that towards the grading. If you do not demonstrate that you did the reading, you will receive very little credit for the assignment (i.e., just showing up will not count for much). If you read and understood the article, then you will also be graded on your level of participation in the discussion. If you are in class while another group is discussing an article, you will lose points if you are a disruptive audience member.

You have been assigned to one of 4 groups (A, B, C, or D). The in-class discussion dates are on page 5 of this syllabus.

In-class presentation

One time during the semester, you will present to the class about a particular assigned article. You will also be assigned a particular day for your presentation (you need to let me know immediately if for some reason your assigned date does not work). You will need to meet with me and discuss the article with me before you present to make sure you are able to present on it. Your prepared presentation should last about 10 minutes. You should use powerpoint in your presentation. You should report back to the class what the article was about, hitting the highlights as far as background research and hypotheses, main aspects of the current methods, the main results, and conclusions, implications, and limitations of the research. You will want to make your presentation as easy to follow as possible while

still effectively presenting about the article. It is strongly recommended that in your powerpoint slides that you make them very easy to read and have no more than 3 bullet points per slide. It is also recommended that you use figures when possible for results. I am happy to provide as much feedback as you want about your presentation beforehand.

GRADING SCALE

A+	96-100
A	92-95
A-	90-91
B+	86-89
B	82-85
B-	80-81
C+	76-79
C	72-75
C-	70-71
D+	66-69
D	62-65
D-	60-61

SAMPLE GRADES & FINAL GRADE CALCULATION

<u>Assignment</u>	<u>% Final Grade</u>	<u>Your %</u>	<u>Your % Final Grade</u>
test 1	5	84	4.2
test 2	5	92	4.6
test 3	5	95	4.75
test 4	5	100	5
test 5	5	97	4.85
test 6	5	100	5
final exam	15	100	15
quiz 1	2.5	80	2
quiz 2	2.5	60	1.5
quiz 3	2.5	80	2
quiz 4	2.5	100	2.5
quiz 5	2.5	100	2.5
quiz 6	2.5	100	2.5
quiz 7	2.5	80	2
quiz 8	2.5	100	2.5
quiz 9	2.5	100	2.5
quiz 10	2.5	100	2.5
quiz 11	2.5	100	2.5
quiz 12	2.5	100	2.5
discussion 1	5	90	4.5
discussion 2	5	95	4.75
discussion 3	5	100	5
<u>presentation</u>	<u>10</u>	<u>95</u>	<u>9.5</u>
TOTAL			94.65

Overall Course Schedule

1/18 Intro

SECTION 1

1/23 Lecture

1/25 Lecture

1/30 Lecture

2/1 **Test 1**

2/6 Quiz 1; In-class discussion Group A; In-class presentations; individual meetings

2/8 Quiz 2; In-class discussion Group B; In-class presentations; individual meetings

2/13 Quiz 3; In-class discussion Group C; In-class presentations; individual meetings

2/15 Quiz 4; In-class discussion Group D; In-class presentations

2/20 **TEST 2**

SECTION 2

2/22 Lecture

2/27 Lecture

3/1 Lecture

3/6 **Test 3**

3/8 Quiz 5; In-class discussion Group B; In-class presentations; individual meetings

3/13 Quiz 6; In-class discussion Group A; In-class presentations; individual meetings

3/15 Quiz 7; In-class discussion Group D; In-class presentations; individual meetings

3/20 Quiz 8; In-class discussion Group C; In-class presentations

3/22 **TEST 4**

SECTION 3

4/3 Lecture

4/5 Lecture

4/10 Lecture

4/12 **Test 5**

4/17 Quiz 9; In-class discussion Group C; In-class presentations; individual meetings

4/19 Quiz 10; In-class discussion Group D; In-class presentations; individual meetings

4/24 Quiz 11; In-class discussion Group A; In-class presentations; individual meetings

4/26 Quiz 12; In-class discussion Group B; In-class presentations

5/1 **TEST 6**

5/3 Review

5/12 Final exam; **7:30-9:30 AM** (you need to let me know if you have a conflict exam)

Students with Disabilities

If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible.

If disability related accommodations are necessary (for example, a note taker, extended time on exams, captioning), please establish an accommodation plan with the Disability Center (<http://disabilitycenter.missouri.edu>), S5 Memorial Union, 573- 882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for persons with disabilities, click on "Disability Resources" on the MU homepage.

Privacy of Classroom Discussions

University of Missouri System Executive Order No. 38 lays out principles regarding the sanctity of classroom discussions at the university. The policy is described fully in Section 200.015 of the Collected Rules and Regulations. In this class, students may not make audio or video recordings of course activity, except students permitted to record as an accommodation under Section 240.040 of the Collected Rules. All other students who record and/or distribute audio or video recordings of class activity are subject to discipline in accordance with provisions of Section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

Those students who are permitted to record are not permitted to redistribute audio or video recordings of statements or comments from the course to individuals who are not students in the course without the express permission of the faculty member and of any students who are recorded. Students found to have violated this policy are subject to discipline in accordance with provisions of Section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

Academic Dishonesty

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

Intellectual Pluralism

The University community welcomes intellectual diversity and respects student rights. Students who have questions or concerns regarding the atmosphere in this class (including respect for diverse opinions) may contact the Departmental Chair or Divisional Director; the Director of the Office of Students Rights and Responsibilities [http://osrr.missouri.edu/](http://osrr.missouri.edu) or the MU Equity Office (equity@missouri.edu). All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.