



PSYC404 BEHAVIORAL PHARMACOLOGY

Instructor: Ana Navarro-Cebrian (she/her) - acebrian@umd.edu
TA: Jordan Osterweil - josterwe@terpmail.umd.edu

Class time: Tuesday and Thursday 11am-12.15pm
Classroom: BPS 1243

Office Hours (Dr Navarro): Fridays at 2pm (zoom ID: 5639362915)

TA office Hours (Jordan Osterweil): Thursdays at 1pm (zoom ID: 5404727169) or by appointment

Communication: All general questions about the course or the material should be asked on the discussion board for questions on CANVAS. Personal questions to Dr Navarro should be asked in person (please, see me before or after our lecture or during office hours).

Missed classes: I cannot provide notes for missed classes. I recommend that students seek other students who attended lectures to receive notes for missed classes.

This is NOT an online or hybrid class. You are expected to be in the classroom, and we are not expected to deliver the class through zoom or have available recordings.

RECOMMENDED TEXT:

McKim, W. A. (2013). Drugs and behavior. *An Introduction to Behavioral Pharmacology*.

ADDITIONAL READINGS:

Please, see the course outline below.

PREREQUISITE:

PSYC202 or NEUR200 or PSYC304.

COURSE DESCRIPTION AND OBJECTIVES:

Theoretical viewpoints on the interaction of drugs and behavior. Basic principles of pharmacology, the effects of drugs on various behaviors, experimental analysis of drug dependence and abuse, and neuropharmacology and behavior.

- At the end of the course, you will be able to identify the most common psychotropic medications, the disorders they are used for and their side effects.
- We will pay close attention to how a better knowledge of medication can support psychotherapy and the development of a healthier mind and body.

COURSE REQUIREMENTS:

Your final grade will be calculated by adding together the points earned from:

1. **Three tests**

Three non-cumulative comprehensive exams on which you will need to apply what you have learned in the course.

2. **Final exam**

Cumulative comprehensive exam.

3. **Project.**

For the project you will read and review scientific articles and will have short oral presentations of your projects. More specific information is available on CANVAS.

4. **Assignments / discussion board.**

We will have several discussions about the material that we discuss in class. We will use the discussion board on CANVAS. Participation is required.

GRADING POLICY:

Assignments / discussion board	15%
Three tests	15% each
Final exam	20%
Project	20%
Extra credit (optional)	1%

A+ = 97-100%	A = 93-96.9%	A- = 90-92.9%
B+ = 87-89.9%	B = 83-86.9%	B- = 80-82.9%
C+ = 77-79.9%	C = 73-76.9%	C- = 70-72.9%
D+ = 67-69.9%	D = 63-66.9%	D- = 60-62.9%
F = Below 60%		

Final grade scores are not rounded up to the next category. Please keep track of your progress and talk with your TA as early as possible if you are struggling in the course.

Extra credit: There are several articles included in the course outline below. You can choose 2 of them to read and summarize for extra credit (1-2 pages with your personal insights and opinions included). Each article summary uploaded on Canvas will add 0.5% to your final grade.

TEST/ASSIGNMENT MAKE-UPS:

Policy: There will be no make-ups or extensions without penalty, except in instances such as the following:

- 1) hospitalization or illness whose symptomatology has been documented and judged by your professor as preventing sufficient test preparation or your ability to sit for a test.
- 2) a death or serious illness in the family; or
- 3) court appearances
- 4) religious observances
- 5) COVID positive result (UMD heal line or doctor's note – a picture of a home test is not sufficient)

Important information about makeup exams: If you cannot make it to a test or exam due to one of the previous instances, you need to email a TA to inform them of your inability to take the test at least 3 hours before the beginning of the test. There will be no make-up exams if you don't **email us at least 3 hours before the exam**. The makeup test will not be scheduled until you send the proper documentation to the TA (please see the next paragraph). If you don't have the documentation 3 hours before the exam, let us know in your email when you will be able to send the documentation. Make-up exams will typically be scheduled no later

than 2 days after the deadline.

For make-ups and extensions, documentation must be provided by health officials (e.g., a physician or member of the student health center staff) in the case of illness; an immediate family member in the case of a death or serious illness in the family; and official paperwork in the case of court dates.

Important information about extensions for assignments (this applies to people with ADS accommodations as well): If you cannot submit your assignment by the deadline, you need to have a justified reason for it (see the policy above) and need to **email a TA to communicate that at least 24 hours before the deadline**. People with ADS accommodations should provide documentation at the beginning of the semester through the ADS system. Students without ADS accommodations should email their documentation to a TA 24 hours before the deadline. If you fail to inform us about your issue with the deadline at least 24 hours before it (this applies to students with ADS accommodations), or you fail to email the proper documentation, you will receive a late penalty for your assignment: deduction of 10% of the grade per day – notice that To calculate a late penalty, Canvas rounds up the day or hour to the next whole number. For example, you may set a 10% per day late submission policy. If a student submits 10-point assignment 1.3 days late, the late penalty will round up 1.3 days up to 2 days.

ACCOMMODATIONS

If you need to talk to me about your accommodations, please, meet with me at the beginning or the end of our class or during office hours. I receive emails from ADS about your accommodations and I don't need any additional information. The same applies to the tests; ADS will send me an email if you are taking the exam with them.

Accessibility & Disability Service (ADS) facilitates reasonable accommodations to qualified individuals. For assistance in obtaining an accommodation, contact Accessibility and Disability Service at [301.314.7682](tel:301.314.7682), or adsfrontdesk@umd.edu. More information is available at counseling.umd.edu/ads/. After receiving an Accommodations Letter from ADS, as a student you are expected to meet with me to provide me with a copy of the Accommodations Letter and to obtain their signature on the Acknowledgement of Student Request form. We will discuss a plan for how the accommodations will be implemented in the course throughout the semester. For additional campus undergraduate policies, please visit courserelatedpolicies.html

Important information about ADS accommodations: If you are taking your exams in the **ADS testing office it is your responsibility** to create/request a reservation on time. If you don't reserve in advance, you will take the exam with the rest of the class.

TECHNOLOGY AND BEHAVIOR POLICIES:

No laptops, tablets or cellphones unless indicated by the professor.

Technology policy violations will result in the lowering of your grade one letter (i.e., B instead of B+) on the final grade.

Please, see me if you have documented accommodations for laptop use.

ACADEMIC INTEGRITY

The Code of Academic Integrity defines five major types of Academic Dishonesty:

CHEATING: fraud, deceit, or dishonesty in any academic course or exercise in an attempt to gain an unfair advantage and/or using or attempting to use unauthorized materials, information, or study aids in any academic course or exercise.

FABRICATION: unauthorized falsification or invention of any information or citation in an academic course or exercise.

FACILITATING ACADEMIC DISHONESTY: knowingly helping or attempting to help another to violate any provision of this *Code*.

PLAGIARISM: representing the words or ideas of another as one's own in any academic course or exercise.

SELF-PLAGIARISM: the reuse of substantial identical or nearly identical portions of one's own work in multiple courses without prior permission from the current instructor or from each of the instructors if the work is being submitted for multiple courses in the same semester.

The Office of Student Conduct will contact you if you have been reported for a violation of the Code of Academic Integrity. Information about the resolution options is outlined in the University of Maryland Code of Academic Integrity. For more information, refer to the [Course Related Policies site](#) hosted by the Office of Undergraduate Studies.

Please be careful with the use of ChatGPT. Make sure that all the data that you include in your project or assignments comes from peer-reviewed sources and is accurate. ChatGPT generates data, and including made-up data in your work may be considered cheating and/or fabrication.

INCLUSIVITY STATEMENT

It is my intent that every student in this class, regardless of their cognitive or physical abilities, gender, sex, race, class, religion, and political affiliation, feel included and valued. Please, feel free to contact me if any experiences in my class feel like a barrier for your inclusion.

STUDENT CONDUCT

You are expected to be respectful with your peers, instructor, and TAs. That includes arriving on time and turning off your phone (although laptops will be used for certain activities, you should not be checking social network).

NAMES/PRONOUNS AND SELF IDENTIFICATION

The University of Maryland recognizes the importance of a diverse student body, and we are committed to fostering equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). The pronouns someone indicates are not necessarily indicative of their gender identity. Visit <https://lgbtq.umd.edu/trans-resources-policies> to learn more.

Additionally, how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity, is your choice whether to disclose (e.g., should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for all of your fellow Terps.

INCLUSIVE LEARNING ENVIRONMENTS

Students will be invited to share their thoughts in class and a diversity of opinions is welcome. Respectful communication is expected, even when expressing differing perspectives. Supporting one's statements with research findings is encouraged. In accordance with free speech statutes, speech that contains threats of violence is prohibited. As a human, behavior-centered discipline, we value a strong understanding of diversity. Diversity refers to differences in race, ethnicity, culture, gender, sexual orientation, religion, age, abilities, class, nationality, and other factors. The Department of Psychology at the University of Maryland is committed to creating a respectful and affirming climate in which all students, staff, and faculty are inspired to achieve their

full potential. We believe that actively fostering an affirming environment strengthens our department as a whole. A department that values and celebrates diversity among its students, staff and faculty is best able to develop the strengths and talents of all members of the department community.

REPORTING RACISM AND OTHER FORMS OF HATE AND BIAS

If you experience racism or other form of bias or hate in this class or any psychology course, we encourage you to do at least one of the following: Please report the experience to the instructor or teaching assistant and/or use report to the Department of Psychology's Diversity and Inclusion Committee [using this link](#) (reports can be made anonymously). Please also report all incidents of hate and bias to the Office of Diversity and Inclusion at <https://www.diversity.umd.edu/hbrp/>.

REPORTING SEXUAL MISCONDUCT

ALL instructors and teaching assistants are required to report any **PAST OR PRESENT** instances of sexual misconduct to the Title IX office. All incidents faced by members of the campus community or visitors must be reported, regardless of where the incident occurred (i.e., on or off campus), when the incident occurred (i.e., recently or many years past), how the instructor or teaching assistant learned of the incident (i.e., directly from the individual who experienced it or from their friend/colleague), and regardless of whether the incident was previously reported.

STATEMENT OF BASIC NEEDS

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live and believes this may affect their performance in this course, is encouraged to use the resources listed below for support.

Fostering Terp Success: <https://umd.edu/fostering-terp-success>

UMD Campus Pantry: <http://campuspantry.umd.edu/>

UMD Student Crisis Fund: <http://www.crisisfund.umd.edu/>

Counseling Center: <http://www.counseling.umd.edu/CS/>

COURSE OUTLINE:

DATE	TOPIC	READINGS and RESOURCES
January 25	Introduction to Course Requirements / Review of neurobiology	Syllabus. Serretti, A. (2018). The present and future of precision medicine in psychiatry: Focus on clinical psychopharmacology of antidepressants . <i>Clinical Psychopharmacology and Neuroscience</i> , 16(1): 1-6.
30	Introduction to pharmacology	Article: Salzman, C., Glick, I., Keshavan, M.S. (2010). The 7 Sins of Psychopharmacology . <i>Journal of Clinical Psychopharmacology</i> , 30(6) 653-655.
February 1	Dopaminergic pathways / Psychosis Project topic/groups assignment due on Feb 2nd	Article: Papanastasiou, E. , Stone, J.M. & Sherguill, S. (2013). When the drugs don't work: the potential of glutamatergic antipsychotics in schizophrenia . <i>The British Journal of Psychiatry</i> , 202(2) 91-93

6	Antipsychotics	Article: Dayabandara et al. (2017) Antipsychotic-associated weight gain: management strategies and impact on treatment adherence. <i>Neuropsychiatr Dis Treat.</i>, 13, 2231–2241
8	ADHD and stimulants Pre-req verification and syllabus quiz due on Feb 9th	Article: Boland, H., DiSalvo, M., Fried, R., Woodworth, K. Y., Wilens, T., Faraone, S. V., & Biederman, J. (2020). A literature review and meta-analysis on the effects of ADHD medications on functional outcomes. <i>Journal of psychiatric research</i>, 123, 21-30.
13	Neurochemistry of substance use / Cannabis / Opiates / Alcohol	Article: Lowe, D. J., Sasiadek, J. D., Coles, A. S., & George, T. P. (2019). Cannabis and mental illness: a review. <i>European archives of psychiatry and clinical neuroscience</i>, 269(1), 107-120.
15	Nicotine / Caffeine Antipsychotic assignment due on Feb 16th	Article: Rubino, T., & Parolaro, D. (2014). Cannabis abuse in adolescence and the risk of psychosis: A brief review of the preclinical evidence. <i>Prog Neuropsychopharmacol Biol Psychiatry</i>, 52, 41–44.
20	Exam 1	
22	Serotonergic system / Hallucinogens	<u>Recommended book</u> : Pollan, M. (2019). <i>How to change your mind: What the new science of psychedelics teaches us about consciousness, dying, addiction, depression, and transcendence</i> . Penguin Books.
27	Psychedelics and microdosing	
29	Psychedelics and microdosing	Article: Kuypers, K. P., Ng, L., Erritzoe, D., Knudsen, G. M., Nichols, C. D., Nichols, D. E., ... & Nutt, D. (2019). Microdosing psychedelics: More questions than answers? An overview and suggestions for future research. <i>Journal of Psychopharmacology</i>, 33(9), 1039-1057.
March 5	Depression	Article: Jauhar, S., Cowen, P. J., & Browning, M. (2023). Fifty years on: Serotonin and depression. <i>Journal of Psychopharmacology</i>, 37(3), 237-241.
7	Antidepressants	Article: Brent, D. A. (2016). Antidepressants and suicidality. <i>Psychiatric Clinics of North America</i> , 39(3), 503-512.

12	Antidepressants	
14	Exam 2	
17 and 21	Spring break	
26	Anxiety / GABA / review of alcohol / Anesthesia/ Anxiolytics	Franks, N. P. (2008). General anesthesia: from molecular targets to neuronal pathways of sleep and arousal. <i>Nature Reviews Neuroscience</i>, 9(5), 370-386. Article: Creado, S., & Plante, D. T. (2016). An Update on the Use of Sedative-Hypnotic Medications in Psychiatric Disorders. <i>Current Psychiatry Reports</i>, 18(9), 1-7.
28	Sleep and sleep disorders	
April 2	Sleep medications Projects due on April 2nd	Article: Doghramji, K., & Jangro, W. C. (2016). Adverse Effects of Psychotropic Medications on Sleep. <i>Sleep Medicine Clinics</i>, 11(4), 503-514.
4	Mood disorders and stabilizers	Article: Szmulewicz, A., Samamé, C., Caravotta, P., Martino, D.J., Igoa, A., Hidalgo-Mazzei, D., Colom, F. & Strejilevich, S.A. (2016). Behavioral and emotional adverse events of drugs frequently used in the treatment of bipolar disorders: clinical and theoretical implications. <i>Int J Bipolar Disord.</i>, 4: 6.
9	Mood disorders and stabilizers / Data Blitz presentations Bipolar assignment due on April 11th	
11	Exam 3	
16	Data Blitz presentations	
18	Data Blitz presentations	
23	Data Blitz presentations / Drug Interactions	
25	Drug Interactions	https://www.webmd.com/interaction-checker/default.htm https://reference.medscape.com/drug-interactionchecker
30	Differentiating Psychotropic Side Effects from Psychiatric Illness	
May 2	Over-the-Counter Supplements and Herbal Products	

7	Special populations and Eating disorders	Article: Earle, J. F. (2016). An Introduction to the Psychopharmacology of Children and Adolescents With Autism Spectrum Disorder. <i>Journal of Child and Adolescent Psychiatric Nursing</i> , 29(2), 62-71.
9	Racial and ethnic differences in treatment	Coleman, K. J., Stewart, C., Waitzfelder, B. E., Zeber, J. E., Morales, L. S., Ahmed, A. T., ... & Hunkeler, E. M. (2016). Racial-Ethnic Differences in Psychiatric Diagnoses and Treatment Across 11 Health Care Systems in the Mental Health Research Network . <i>Psychiatric Services</i> , 67(7), 749-757.
Saturday, May 11th at 8.45am	FINAL EXAM (notice that the final exam will only take 75 minutes)	