

PSYC 395 – Behavioral Genetics



Instructor

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In-Person Office Hours: Wed 10am – 11:30am (or by appointment)

Zoom Office Hours: Mo 10am – 11:30am (or by appointment)

Class Schedule

January 22nd – May 10th MoWeFr 9:00am – 9:50am, Science Building D217

Course Description

PSYC 395 – Special topics - Behavioral genetics, 3 credits hours

This course will provide a multidisciplinary perspective on the role genes play in behavioral expression and development. Techniques and concepts that will be covered in this class include, use of inbred mouse strains, twin studies, genome wide association studies, epigenetics, and genetic variation. Using these concepts this course will explore the influence of genes on various behavioral-states including mental illness, learning and memory, addiction, and social behaviors

Course Structure

This course will be conducted in-person. Course content will be posted on Canvas. You can access Canvas from the UWSP [log in page](#) using your UWSP credentials. If you have not activated your UWSP account, please visit the [Manage Your Account](#) page to do so.

Objectives

1. Explain and understand the concepts of genetic variability from a population and individual level
2. Apply current models use in behavioral genetics to pinpoint the role certain genes play in behavioral outcomes
3. Be able to explain the influence of an individual genome on behavioral expression at multiple levels
4. Understand the interaction between genes and the environment

Required Materials and Online Canvas Page

- *Foundations of Behavior Genetics*, 1st edition by Stoltenberg.
- Canvas will be used regularly to distribute documents, grades, and provide quiz access. If you have any troubles accessing the course Canvas page please inform IT Service Desk (<http://www.uwsp.edu/infotech/Pages/helpdesk/default.aspx>)

Grading/assessment

Final grades will be based on lecture/reading quizzes and unit exams.

- **Quizzes:** There will be 15 reading/lecture quizzes each with 5 points. Quizzes will aid in keeping up with the course reading material and prepare for unit exams. Each quiz will consist of 10 multiple choice questions (each worth 1 point) that cover material for a specific chapter/topic. Quizzes will be available on Canvas at the start of that topic and will close on the last class period devoted to that topic (11:59 pm – please see schedule below for exact due dates. Once a quiz is closed there will be **no makeup opportunities**, so I encourage you to participate. Each quiz will be 10 minutes in length.
- **Inbred mouse draft/paper:** The inbred mouse model is one of the most powerful tools currently available to explore the role genetics play in behavioral outcomes. As part of this class, you will learn how to utilize these models and explore the impact of genetic variation on behavioral outcomes. Specially, you will be tasked with creating a presentation and writing a paper on a certain inbred mouse strain. For both the presentation and paper you should discuss the history of your mouse model, any unique genetic variation/mutation, and any unique behavioral or drug response observed within your strain. If possible, you should also describe any link between abnormal genomic or behavioral outcomes. Your paper and presentation should consist of primary literature. Given time constraints, you will only have 5-7 minutes per presentation. Papers should be approximately 5 pages in length. **Presentations will be worth 10 points and papers will be worth 60 points. The following website (will be explained in class) is the recommended starting point for this project: <https://phenome.jax.org/>**
- **Exams:** There will be 5-unit exams that cover multiple disciplines of psychology. Each exam will consist of multiple choice and short answer questions, worth a total of 50 points. There will be no makeup exams unless I am provided with a legitimate, documented excuse. In the case of an absence during an exam (due to medical complications or family emergency) please contact me as soon as possible. **I must be notified before the exam start in order to reschedule an exam.**

The following will comprise your final grade:

- Lecture/reading quizzes: ~ 19% (75 points)
- Inbred mouse paper/presentation: ~18% (70 points)
- Exams: ~64% (250 points)

Grading Scale

Final grades will be based on the percentages shown below. I reserve the right to lower/raise these cutoff points. The cutoff points are:

94%- 100%	A	80%- 83%	B-	67%-69%	D+
90%- 93%	A-	77%-79%	C+	64%-66%	D
87%- 89%	B+	74%-76%	C	60%-63%	D-
84%- 86%	B	70%-73%	C-	0%-59%	F

Attendance

Attendance will not count explicitly in the calculation of your grade, but attending class is imperative since all of the tests and final exam will be mostly based on what we cover in class. If you miss a class, please obtain the lecture notes from a classmate.

University Policy Regarding Students with Disabilities

If you have a documented disability and verification from the Disability Resource Center and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student's responsibility to provide documentation of disability to DRC and meet with a counselor to request special accommodation before classes start. The DRC is located in CCC 108 and can be contacted by phone at (715) 346-3365 or via email at drc@uwsp.edu.

UWSP Technology Support

- Seek assistance from the [IT Service Desk](#) (Formerly HELP Desk)
 - IT Service Desk Phone: 715-346-4357 (HELP)
 - IT Service Desk Email: techhelp@uwsp.edu

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider unenrolling from a course. Refer to the UWSP [Academic Calendar](#) for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons includes: (1) documented and significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Statement of Academic Integrity

Academic Integrity is an expectation of each UW-Stevens Point student. Campus community members are responsible for fostering and upholding an environment in which student learning is fair, just, and honest. Through your studies as a student, it is essential to exhibit the highest level of personal honesty and respect for the intellectual property of others. Academic misconduct is unacceptable. It compromises and disrespects the integrity of our university and those who study here. To maintain academic integrity, a student must only claim work which is the authentic work solely of their own, providing correct citations, credit to others as needed, and no use of AI. Cheating, fabrication, plagiarism, unauthorized collaboration, and/or helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. Failure to understand what constitutes academic misconduct does not exempt responsibility from engaging in it. Students suspected of academic misconduct

Course Schedule

Date	Material covered	Reading/ Assignment due
1/22 M	Class introduction	
1/24 W	Ch. 1 Introduction to Behavioral Genetics	
1/26 F	Ch. 1 Introduction to Behavioral Genetics	Quiz 1
1/29 M	Ch. 2 Mendelian Genetics	
1/31 W	Ch. 2 Mendelian Genetics	Quiz 2
2/2 F	Ch. 3 Heritability	
2/5 M	Ch. 3 Heritability	Quiz 3
2/7 W	Exam #1 review	
2/9 F	Exam #1	
2/12 M	Utilizing mouse phenome database	
2/14 W	Mouse draft	
2/16 F	Ch. 4 Genes	
2/19 M	Ch. 4 Genes	Quiz 4
2/21 W	Ch. 5 Genetic variation	
2/23 F	Ch. 5 Genetic variation	Quiz 5
2/26 M	Ch. 6 Neurogenetics	
2/28 W	Ch. 6 Neurogenetics	Quiz 6
3/1 F	Exam #2 review	
3/4 M	Exam #2	
3/6 W	Ch. 7 Serious Mental Illness	
3/8 F	Ch. 7 Serious Mental Illness	Quiz 7
3/11 M	Ch. 8 Learning and Memory	
3/13 W	Ch. 8 Learning and Memory	Quiz 8

3/15 F	Ch. 9 Emotion and Depressive Disorders	
3/18 – 3/22	Spring break!!!!	
3/25 M	Ch. 9 Emotion and Depressive Disorders	Quiz 9
3/27 W	Exam #3 review	
3/29 F	Exam #3	
4/1 M	Ch. 10 Fear and Anxiety	
4/3 W	Ch. 10 Fear and Anxiety	Quiz 10
4/5 F	Ch. 11 Addiction	
4/8 M	Ch. 11 Addiction	Quiz 11
4/10 W	Ch. 12 Eating and Exercise	
4/12 F	Ch. 12 Eating and Exercise	Quiz 12
4/15 M	Exam #4 review	
4/17 W	Exam #4	
4/19 F	Ch. 13 Social Behavior	
4/22 M	Ch. 13 Social Behavior	Quiz 13
4/24 W	Ch. 14 Behavioral Genetics in Real Life	
4/26 F	Ch. 14 Behavioral Genetics in Real Life	Quiz 14
4/29 M	Ch. 15 Eugenics	
5/1 W	Ch. 15 Eugenics	Quiz 15
5/3 F	Mouse presentation #1	
5/6 M	Mouse presentation #2	
5/8 W	Mouse presentation #3	
5/10 F	Exam #5 review	Mouse paper due
Last exam	Exam #5	

This syllabus is subject to change and you are responsible for keeping up with any changes and announcements. Any changes will be announced in-class and on the Canvas course page.