

Behavioral Genetics

Fall 2012

PSY 267

ID: 2642

Fall 2012

Instructor: Elena Tsoy, MSc

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Office hours: by appointment

Course language: English

Classes: Th. 9-25

Prerequisites: PSY 122

Number of credits: 1.5

Course status: required

Course description: Today the study of human genetics is developing very rapidly making a considerable scientific contribution into a variety of disciplines. *Behavioral genetics* represents an interdisciplinary field of study investigating the role of genetics in human and animal behavior. It is one of the integral parts of contemporary psychology providing an opportunity for deeper understanding of human behavioral traits and psychological conditions. The present course is an overview of theoretical knowledge in contemporary genetics of behavior.

The main objective of the course is to provide students with the opportunity to explore the implications of behavioral genetics knowledge in contemporary psychological science and review behavioral traits and psychological and psychopathological conditions from a genetics perspective.

Core materials:

1. Lewis, R. *Human Genetics: Concepts and Applications*. (2003).
2. Carey, G. *Human Genetics for the Social Sciences*. (2003).
3. Plomin, R. et al. *Behavioral Genetics*. (1997).
4. Johnson, R. *Biology*. (1989).
5. Hay, D. *Essentials of behaviour genetics*. (1985).
6. Mader, S. *Biology*. (1998).
7. Carson, R. A., Rothstein, M.A. *Behavioral Genetics: The Clash of Culture and Biology*. (2002).
8. Malvee, S. *Principles of Genetics*. (2010).
9. Clark, W. R. Grunstein, M. *Are We Hardwired? The Role of Genes in Human Behavior*. (2010).
10. Hernandez, L. M. Blazer, D. G. *Genes, Behavior, and the Social Environment: Moving Beyond the Nature/Nurture Debate*. (2006).

Course assessment:

- 1. Attendance – 10%.** It is recommended that students attend all classes. Missing more than 3 classes without a proper excuse will affect this grade. Official note should be provided for each absence.
- 2. Participation – 15%.** To ensure active participation and involvement in class discussions and proper comprehension of the new material, **students are required to prepare the assigned readings** before the lecture. **Mini-tests** are designed for several purposes: to ensure that students have prepared their reading assignments, to evaluate students' understanding of the course materials, and to help students in preparation for the final exams.
- 3. Presentation – 15%.** Students are required to make a presentation (timing restraints: maximum of 15 minutes). A list of tentative topics is provided in the schedule section of this syllabus. **It is required that students consult with the instructor and discuss the content of the presentation before presenting it in class.**
- 4. Literature review – 20%.** Students will be required to submit a literature review on a selected topic. Students can suggest a topic of their interest or choose one from the list provided in the following section of this syllabus.
Format of the paper: 4-6 pages, Times New Roman, 12 font, 1.5 space, APA style formatting.
- 5. Exams – 40%.** Students will take the **midterm exam**, covering the first half of the course material (maximum grade of **20%**). Likewise, the **final exam** will cover the second half of the material and will be graded as **20%** of the final grade for the course.

Bonus points – up to 3% bonus points are available. Students have an opportunity to receive bonus points for their performance during the course. Bonus points will be provided to students who have actively participated in the majority of class sessions and/or have undertaken a creative approach in their presentations and/or papers.

Grading:

“X” grade policy. Students will get a grade of “X” in case of missing **more than 5 classes** in absence of a proper excuse supported by an official note. Otherwise, including cases of attending classes but failure to fulfill the assignments, students will be graded according to the following scale:

A	91 – 100%	C	61 – 64%
A-	86 - 90%	C-	56 – 60%
B+	80 – 85%	D+	51 – 55%
B	75 – 79%	D	46 – 50%
B-	70 – 74%	D-	41 – 45%
C+	65 – 69%	F	0 – 40%.

Assessment of individual assignments:

Presentation (maximum of 15):

Content – 9

Comprehensible presentation of the topic – 2

Ability to answer questions and respond to opinions – 3

Format – 1

Literature review (maximum of 20):

Content – 10

Format – 2

Grammar and punctuation – 4

Comprehensive list of references – 3

Creativity – 1

Tentative list of topics for the LITERATURE REVIEW:

- ~ *Benefits and risks of using genetics research in psychological science.*
- ~ *Psychological and social implications of determining genes for antisocial behavior (homosexuality/giftedness).*
- ~ *History of genetic research of IQ.*
- ~ *Genetic basis for depression.*
- ~ *Genetic basis for schizophrenia.*
- ~ *Genetic basis for autism/learning disabilities/developmental disorders.*
- ~ *Genetics of personality/personality disorders.*
- ~ *Genetics of alcoholism/smoking/drug abuse.*
- ~ *Genetics of antisocial behavior/APD/ODD.*

Class schedule:

Date	Topic	PRESENTATION TOPICS
6.09	Introduction. What is behavioral genetics?	
13.09	Cells structure and cycle. Mitosis and meiosis.	
20.09	Chromosomes. Chromosomal abnormalities.	<i>Chromosomal abnormalities.</i>
27.09	DNA, genetic code, protein synthesis.	
4.10	Mendelian genetics. Inheritance.	<i>Single-gene disorders: cystic fibrosis, sickle-cell anemia, phenylketonuria, tay-sachs disease, hemophilia, Huntington's disease.</i>
11.10	Exceptions to Mendel's laws.	<i>X-linked genetic disorders.</i>
18.10	Quantitative genetic theory. Gene-environment interaction.	
25.10	Midterm exam	
1.11	Research methods in human genetics. Student presentations.	<i>Types of research in human genetics. Research designs. Social implications of research in genetics.</i>
8.11	Genetics of intelligence.	<i>Genetics of IQ.</i>
15.11	Personality and personality disorders. Genetic bases.	<i>Genetic bases of personality disorders.</i>
29.11	Genetic basis for psychopathology.	<i>Genetic basis of schizophrenia. Genetic basis of mood disorders.</i>
6.12	Genetics of criminal behavior.	<i>Genetics of antisocial behavior.</i>
13.12	Genetics in health psychology. Cancer. Addictions.	<i>Genetics of addictions (alcoholism/smoking/drug abuse). Genetics of obesity.</i>
20.12	Final exam	