Instructors: Gene M. Heyman, Verna L. Mims
Meeting time and place: Thursday, 5:30 – 7:30 pm
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Course website: https://canvas.harvard.edu/courses/4191

Addiction is studied at many levels, from how drugs affect neurons to how drugs affect society. Neural architecture and societal organization influence drug effects as well as bear the brunt of drug effects. This complexity is in part responsible for the conflicting views of the nature of addiction, with some arguing we should consider addiction a disease, much like heart disease or diabetes, and others arguing that drug use in addicts is a matter of choice. To understand addiction we also need to understand basic bio-psychological relations, such as how neurons work, heritability, and empirical laws of choice. Consequently, course readings include papers on these topics as well as papers on addiction.

The course topics include (1) the characteristics of addiction as revealed in biographies, epidemiological studies, and ethnographies, (2) how drugs work (in a very schematic fashion), (3) role of heredity in behavior and alcoholism, (4) whether heroin is an “enslaving” drug, (5) the reward/dopamine explanation of cocaine addiction, (6) drug craving, (7) cigarette smoking, (8) marijuana (9) addiction as choice, and (10) some comments on drug policy. The readings are largely research studies published in scientific journals.

Required text

Recommended/optional text
McKim, W. A. & Hancock, S. (2013). *Drugs and Behavior*. Note: Students are not required to purchase this book. It will be available in Grossman Library.

Additional reading course readings will be available on the course website, in the library, or in class handouts.

Grades
Undergraduates: Exam 1: 30%, Exam 2: 40%, Quizzes: 20%, Paper 10%
Graduates: Exam 1: 20%, Exam 2: 30%, Quizzes: 20%, Papers 30%

Quizzes
There will be 4 very short quizzes during the semester. Quizzes will be based on material primarily contained in the assigned readings. Each quiz will be composed 5 questions, worth 1 point each. There will be no make-up dates for quizzes. There will be a minimum of 5 extra credit points available on the midterm and final exams, which will provide an opportunity to recoup lost points, should you be absent for a quiz.
Papers
One short paper worth 10 points will be required from all students. Paper length will be 2 to 3 pages for undergraduate students, and 4 to 5 pages for graduate students. A list of topics will be provided in class. One term paper, worth 20 points, 8 to 10 pages in length, will be required from all graduate students. Term paper topics must be submitted for approval by November 12. All papers must be double-spaced, typed in Times 12 point font, with 1” margins. Papers are due by 5:00pm on the dates below. Additional information about papers will be presented in class.
Key dates
October 15       Midterm examination
November 12     Graduate paper proposals due
November 26      Thanksgiving break
December 3     Short paper due
December 10    Graduate paper due
December 17    Final examination

Quiz dates
September 17, October 1, November 5, November 19

September 3 – Lecture 1
Introduction: Defining addiction, an overview of the topic, and course mechanics. “Addiction” identifies a self-destructive pattern of drug use. The popular understanding is that addiction is a compulsive, involuntary behavior. However, self-destructive behavior is not necessarily compulsive. Whether addictive drug use is voluntary or involuntary is an empirical question that can be scientifically tested. To answer it properly requires an objective definition of compulsivity and a sufficiently rich account of the determinants of drug use. This course offers insight into the nature of addiction based on objective definitions of voluntary and involuntary behavior, and the factors correlated with drug use.


September 10 – Lecture 2
Neurons, drugs, psychopharmacology: Drugs achieve their effects by changing the way the brain normally functions. To understand these changes, we will cover how drugs reach their sites of action, receptor dynamics, psychopharmacology, and brain plasticity.


September 17 – Lecture 3
Opiates, part 1: History, psychopharmacology, tolerance, and withdrawal. Heroin and morphine have been used in different forms, by different groups of people, for millennia. What makes using opiates so compelling that people continue to use it despite the dangers that are associated with its use?


*Optional

**September 24 – Lecture 4**

Opiates, part 2: Does heroin promote compulsive drug use? Heroin use in Vietnam was widespread, but what became of those soldiers when they returned home? Is addiction a chronic relapsing disorder? We use clinical, epidemiological, and ethnographic evidence to answer these questions.


**October 1 – Lecture 5**

Subjective aspects of drug use: Craving, intoxication, cognitive deficits. Why do some people experience craving and intoxication differently than others? What role does an individual’s experience of a drug’s subjective effects play in the likelihood that he or she will become addicted?


October 8 – Lecture 6
Stimulants, reward, and dopamine. Why is cocaine so addictive? How does it differ from other addictive drugs? We will look at the differences and similarities between powder cocaine, crack, and other stimulants to understand why addiction to stimulants can be so difficult to break.


* Optional

October 15 – MIDTERM EXAMINATION

October 22 – Lecture 7
Alcohol, part 1. Introduction to alcohol and alcoholism. Selected topics will include the history of alcohol use, alcohol pharmacology and psychology, and genetic influences related to alcohol abuse. Does a genetic influence in alcoholism imply that it is a disease?


*Optional

**October 29 – Lecture 8**
Alcohol, part 2. Treatment, recovery, and AA. How successful are treatments for alcoholism? Topics include the history of Alcoholics Anonymous and the theoretical basis its widespread use for treatment of alcoholism.


**November 5 – Lecture 9**
Nicotine. Despite a concerted effort to dissuade people from smoking, millions of Americans continue to smoke cigarettes, and new users begin smoking every day. Why is nicotine sometimes considered the prototypical drug of abuse? Why is it so hard to stop smoking?


**November 12 – Lecture 10**
Cannabis. Is marijuana addictive? Is it harmful? Topics include marijuana myths versus facts, an objective consideration of reasons to support and/or not support legalization of marijuana for medical or recreational use.


*Optional

**November 19 – Lecture 11**
Behavioral addictions and treatment issues for dual diagnosis.


**November 26 – THANKSGIVING BREAK**

**December 3 – Lecture 12**
On the nature of reward and choice. Voluntary actions can produce undesirable outcomes.


**December 10 – Lecture 13**
Pros and cons of current drug policy and should “values” play a role in the effort to reduce harmful drug use?


**December 17 – FINAL EXAMINATION**

* Nota bene: This is a preliminary syllabus. Some topics and readings may change.