

Term Information

Effective Term Spring 2017

General Information

Course Bulletin Listing/Subject Area Psychology
Fiscal Unit/Academic Org Psychology - D0766
College/Academic Group Arts and Sciences
Level/Career Undergraduate
Course Number/Catalog 4320
Course Title Psychological Science of Addiction
Transcript Abbreviation psych of addiction
Course Description Addiction is studied at many levels, from how drugs affect neurobiological systems to how psychosocial factors play a role in drug addiction. Likewise, accumulating evidence suggests that we need to consider addiction as a brain disease like other medical conditions. Students will learn neurobiological systems and cognitive neuroscience underlying drug addictions.
Semester Credit Hours/Units Fixed: 3

Offering Information

Length Of Course 14 Week, 8 Week, 6 Week
Flexibly Scheduled Course Never
Does any section of this course have a distance education component? No
Grading Basis Letter Grade
Repeatable No
Course Components Lecture
Grade Roster Component Lecture
Credit Available by Exam No
Admission Condition Course No
Off Campus Never
Campus of Offering Columbus, Lima, Mansfield, Marion, Newark

Prerequisites and Exclusions

Prerequisites/Corequisites Psych 3313(H) or 3331(H) or 2367.02
Exclusions

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code 42.0101
Subsidy Level Baccalaureate Course
Intended Rank Sophomore, Junior, Senior

Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

- Students will understand neurobiological systems in the brain that are responsible for drug addiction.
- Students will understand the diverse effects of drugs of abuse on the brain.
- Students will learn the overview of the cognitive neuroscience of drug addiction and how we can use cognitive neuroscience (including neuroimaging tools) to advance the assessment and/or treatment of addiction.

Content Topic List

- Neuropsychopharmacology
- Animal models of addiction
- Neural circuit in addiction
- Neural mechanisms of craving
- Types of drugs
- Role of value circuit in addiction
- Stress and Drug craving
- Heritability of drug addiction
- Role of value circuit in addiction
- Risk factors for substance misuse
- Adolescence and Addiction
- Brain abnormalities in drug addiction
- Decision-making framework
- Neuroeconomic perspectives
- Neuroimaging techniques
- Neurocognitive predictors of drug addiction
- Neurocognitive mechanisms underlying psychosocial interventions
- Medications for the treatment of addiction
- Genetics of addiction

Attachments

- Psych 4320.docx: Syllabus
(Syllabus. Owner: Givens, Bennet Stuart)
- Psychology Major Learning Objectives July 2016.docx: Curriculum Map
(Other Supporting Documentation. Owner: Givens, Bennet Stuart)

Comments

COURSE REQUEST
4320 - Status: PENDING

Last Updated: Haddad,Deborah Moore
09/28/2016

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Paulsen,Alisa Marie	09/28/2016 02:36 PM	Submitted for Approval
Approved	Opfer,John Erich	09/28/2016 03:04 PM	Unit Approval
Approved	Haddad,Deborah Moore	09/28/2016 03:26 PM	College Approval
Pending Approval	Nolen,Dawn Vankeerbergen,Bernadette Chantal Hanlin,Deborah Kay Jenkins,Mary Ellen Bigler Hogle,Danielle Nicole	09/28/2016 03:26 PM	ASCCAO Approval

4320 Psychological Science of Addiction
Spring 2017
TTh 9:35 AM - 10:55 AM
Location: TBD

Instructor: Woo-Young (Young) Ahn, Ph.D.

Office: 143 Psychology Building

Telephone: (614) 247-7670

Email: Ahn.280.edu

Office Hours: By appointment (ahn.280@osu.edu)

Course Website: Readings, grades, and announcements will be posted through Carmen (carmen.osu.edu).

Course Overview and Objectives

The objectives of this course are to help students (1) understand neurobiological systems in the brain that are responsible for drug addiction, (2) understand the diverse effects of drugs of abuse on the brain, and (3) learn the overview of the cognitive neuroscience of drug addiction and how we can use cognitive neuroscience (including neuroimaging tools) to advance the assessment and/or treatment of addiction.

Addiction is studied at many levels, from how drugs affect neurobiological systems to how psychosocial factors play a role in drug addiction. While some people argue that drug use in addicts is a matter of choice, accumulating evidence suggests that we need to consider addiction as a brain disease like other medical conditions. To better understand addiction and resolve the conflicting views, we need to understand basic animal and human models used to study diverse aspects of drug use, heritability, and basic cognitive neuroscience. Consequently, course readings include chapters and papers on these topics as well as papers on addiction.

Course prerequisites

Completion of at least one of the following courses: 3313(H) (Introduction to Behavioral Neuroscience), 3331(H) (Abnormal Psychology), or 2367.02 (Abnormal Psychology Analysis)

Required textbook

Koob, George F., Michael A. Arends, and Michel Le Moal. (2014) *Drugs, addiction, and the brain*. Academic Press.

Wilson, Stephen J. (2015) *The Wiley Handbook on the Cognitive Neuroscience of Addiction*. John Wiley & Sons.

Additional course readings will be available on Canvas as PDF documents.

Grading

Grades will be based on following:

- 1) **Exams:** There will be two examinations in this course. Exams will consist of multiple-choice and/or fill-in-the-blank questions. Each exam is worth 33.3% of the course grade. The exams are not cumulative.
- 2) **Quizzes:** There will be 5 short quizzes during the semester. Quizzes will cover material taught in recent lectures. Each quiz will contain 3-8 questions that can comprise of multiple-choice questions, T/F questions, or short essays. There will be no make-up dates for quizzes.
- 3) **Attendance:** Attendance is mandatory and is worth 10.0% of the course grade. Active participation is strongly encouraged and activities that distract other students (e.g., extensive texting in class, making loud noise) may result in a penalty in the grade. Excused absences other than medical emergencies must be preapproved with the instructor.

You can earn **a total of 300 points** as follows:

1. Exam 1: 100 points
2. Exam 2: 100 points
3. Five quizzes: $14 * 5 = 70$ points
4. Attendance / participation: 30 points

Grading	93 – 100% = A	83 – 86 = B	73 – 76 = C	60 – 66 = D
Scale:	90 – 92 = A-	80 – 82 = B-	70 – 72 = C-	59% or less = E
	87 – 89 = B+	77 – 79 = C+	67 – 69 = D+	

Classroom Policies: Attendance is mandatory. Missing quizzes and exams may not be made up, except for extreme circumstances (e.g., an emergency room visit or a death in the family). If you know you will miss class, please notify the instructor. Arrangements may be made in advance to account for missing work.

Special accommodations: Please notify me immediately if you require special accommodations for completing assignments and/or if you anticipate any problems in completing them on time.

Academic Misconduct

All students at the Ohio State University are bound by the Code of Student Conduct (see <http://oaa.ohio-state.edu/coam/code.html>). Violations of the code in this class will be dealt with according to the procedures detailed in that code. Specifically, any alleged cases of misconduct will be referred to the Committee on Academic Misconduct. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student

Conduct http://studentlife.osu.edu/pdfs/csc_12-31-07.pdf.

Students with disabilities: This syllabus is available in alternative formats upon request. In addition, if you may need an accommodation based on the impact of a disability, you should contact me immediately. Students with disabilities that have been certified by the Office for Disability Services (ODS) will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 292-3307, TDD 292-0901; <http://www.ods.ohio-state.edu/>. However, to ensure that evaluation of student performance in the course is conducted in a manner that is fair to all students, special accommodations will not be granted in the absence of ODS certification.

Tentative Course Schedule (subject to change by the instructor in class)

Wk	Date	Topic	Chapter	Other readings
1	1/10	Overview of the course.		
	1/12	What is addiction?	Koob Ch 1	
2	1/17	Neuropsychopharmacology (1/2)	Koob Ch 2	
	1/19	Neuropsychopharmacology (2/2)	Koob Ch 2	
3	1/24	Animal models of addiction (1/2)	Koob Ch 3	
	1/26	Animal models of addiction (2/2)	Koob Ch 3	
4	1/31	Neural circuit in addiction	Wilson Ch 5	
	2/2	Neural mechanisms of craving	Wilson Ch 9	
5	2/7	Types of drugs (1/2)	Koob Ch 4,5	
	2/9	Types of drugs (2/2)	Koob Ch 6,7	
6	2/14	Role of value circuit in addiction	Wilson Ch 3	
	2/16	Stress and Drug craving	Wilson Ch 11	
7	2/21	Heritability of drug addiction		Dick (2011)
	2/23	Role of value circuit in addiction	Wilson Ch 3	
8	2/28	Exam #1		
	3/2	Risk factors for substance misuse	Wilson Ch 12	
9	3/7	Adolescence and Addiction	Wilson Ch 13	
	3/9	Brain abnormalities in drug addiction	Wilson Ch 14	

10	3/14	Spring break		
	3/16			
11	3/21	Decision-making framework		Rangel et al (2008)
	3/23	Neuroeconomic perspectives	Wilson Ch 19	
12	3/28	No class due to CNS 2017		
	3/30	Neuroimaging techniques		TBD
13	4/4	Neurocognitive predictors of drug addiction		Whelan et al (2014)
	4/6	Neurocognitive mechanisms underlying psychosocial interventions	Wilson Ch 15	
14	4/11	Medications for the treatment of addiction	Koob Ch 9	
	4/13	Genetics of addiction	Wilson Ch 18	Agrawal et al (2012)
15	4/18	Individualized treatment for addiction		Conrod et al (2006)
	4/20	Healthcare systems and policy in the face of addiction		Satel (2007) Heyman (2009)
16	4/25	Exam #2		
	4/27	No class		

References

- Agrawal, A., Verweij, K. J. H., Gillespie, N. A., Heath, A. C., Lessov-Schlaggar, C. N., Martin, N. G., & Lynskey, M. T. (2012). The genetics of addiction—a translational perspective. *Translational psychiatry*, 2(7), e140.
- Conrod, P. J., Stewart, S. H., Comeau, N., & Maclean, A. M. (2006). Efficacy of cognitive-behavioral interventions targeting personality risk factors for youth alcohol misuse. *Journal of Clinical Child and Adolescent Psychology*, 35(4), 550-563.
- Dick, D. M. (2011). Gene-environment interaction in psychological traits and disorders. *Annual review of clinical psychology*, 7, 383.
- Heyman, G. M. (2009). Chapter 7. *Addiction: A disorder of choice*. Cambridge, MA: Harvard University Press.
- Rangel, A., Camerer, C., & Montague, P. R. (2008). A framework for studying the neurobiology of value-based decision making. *Nature Reviews Neuroscience*, 9(7), 545-556.
- Satel, S. (2007). In praise of stigma. In J. Henningfield, et al. (Eds.), *Addiction Treatment: Science and Policy for the Twenty-first Century*. John Hopkins University Press, pgs 147-151.
- Whelan, R., Watts, R., Orr, C.A., Althoff, R.R., Artiges, E., Banaschewski, T., Barker, G.J., Bokde, A.L., Büchel, C., Carvalho, F.M. and Conrod, P.J. (2014). Neuropsychosocial profiles of current and future adolescent alcohol misusers. *Nature*, 512(7513), 185-189.

Psychology Major Learning Objectives

Program Objectives

Knowledge Base in Psychology

- K1. Describe key concepts, principles, & overarching themes in psychology
- K2. Develop working knowledge of psychology's content domains
- K3. Describe applications of psychology

Scientific Inquiry & Critical Thinking

- S1. Use scientific reasoning to interpret psychological phenomena
- S2. Demonstrate psychology information literacy
- S3. Engage in innovative & integrative thinking & problem solving
- S4. Interpret, design, & conduct basic psychological research
- S5. Incorporate sociocultural factors in scientific inquiry

Ethical & Social Responsibility in a Diverse World

- E1. Apply ethical standards to evaluate psychological science & practice
- E2. Build & enhance personal relationships
- E3. Adopt values that build community at local, national, & global levels

Communication

- C1. Demonstrate effective writing for different purposes
- C2. Exhibit effective presentation skills for different purposes
- C3. Interact effectively with others

Professional Development

- P1. Apply psychological content & skills to career goals
- P2. Exhibit self-efficacy & self-regulation
- P3. Refine project-management skills
- P4. Enhance teamwork capacity
- P5. Develop meaningful professional direction for life after graduation

Learning Goal Levels

- F – Foundational
- A- Advanced

I. Data Analysis and Research Requirement																				
Course	Area	K1	K2	K3	S1	S2	S3	S4	S5	E1	E2	E3	C1	C2	C3	P1	P2	P3	P4	P5
2220(H) Data Analysis		F			F	F	F	F					F			F	F	F		
2300 Research Methods		F	F	F	F	F	F	F	F	F	F		F		F	F	F	F		

II. Core Requirements (1 from each area)																				
A. Brain and Behavior																				
Course	Area	K1	K2	K3	S1	S2	S3	S4	S5	E1	E2	E3	C1	C2	C3	P1	P2	P3	P4	P5
3313 Intro to Behavioral Neuroscience	BN	F	F		F	F				F										
3313H Intro to Behavioral Neuroscience	BN	F	F		F	F	F	F		F	F		F	F	F				F	
3513 Intro to Cognitive Neuroscience	CO	F			F	A		F		F			F							
B. Cognitive Psychology																				
3302 Perception & Language	CO	A	A	A	A	A	F		F											
3310 Sensation & Perception	CO	A	A	F	A	F	F									F				F
3312 Memory & Cognition	CO	A	A	F	A	A	F	F	F	F			F	F	F					F
C. Clinical and Developmental Psychology																				
2367.02 Abnormal Psychology Analysis	CL	F	F	F	F		F						F		F				F	
3331 Abnormal Psychology	CL	F	F	A	A			A	A											
3335 Psychology of Adjustment	CL	F																		
3340 Lifespan Development	D	F	F	F	F	F						F	F							
3530 Theories of Personality	CL	A	A	A	A	F	F	F	A	F	A		F						F	

5602 Behavioral Genetics	BN	A	A	A	A	F	F	A	A											
5606 High Level Vision	CO	A	A	F	A	F	A	A					A	A	F					
5614 Cognitive Neuroscience	CO	A	F	F	A	A	F	A	F	F			F	A	A			A	A	
5622 Development of Brain and Behavior	BN	A	A	A	A	A	A	A	A					A	A					
5681 Development and Psychopathology	CL	A		A	A			F												
5684 Psychology of Delinquency	D	A	A	A	A	A	A	F	A	A	F	A	A	F	A	A	A	F	F	A
Advanced Courses																				
4309 Human Motor Control	CO	A	A	A	A	A	F	F					F			F				
4485 Psychology and the Law		F,A	F,A	F,A	F,A	F	F	F	F	F	F	F,A	F,A			F,A				
4505 History of Psychology		A	F,A	A	F	A			A	F										
4508(H) Judgment and Decision-Making	Q	F	F	A	F		F	F	F											
4511 Psychological Testing		F	F	F	A	F		A		F			F	F		F				
4515 Psychology of Emotion	S	A,F	A,F	A,F	A,F	A,F		A,F	A,F	F	F					F			F	
4521 Personnel Psychology		F,A		F,A	F,A	F,A	F,A	F,A	F,A	F	F,A	F,A	F,A	F,A	F,A	F,A	F	F,A	F	F,A
4522 Organizational Psychology		A,F	A,F	A,F	F	F	A,F	F	F	F,A			F	F	F	F,A	F	F		F
4531 Health Psychology	CL	A	A	A	A	F	F			A	F		F		F	F	F	F	F	A
4543 Psychology of Gender	CL	A	F	A	A	A	F	F	A		A	F	F	F	A	F	A	F	F	F
4545 Cross-Cultural Psychology	CL	F,A	F,A	A	A	F	F	F	F	F	F,A	F,A	F	F	F	F				F
4552 Psychology of Adult Years	D	F		F	F	F														
4554 Language Development	D		A		A	A	A	F					A	A						
4555 Adolescent Sexuality	D	F		F	F	F		F					F	F					F	

4571 Psychology of Dev. Disabilities	I	F		F	F	F, A						F	F, A					F		
5601 Comparative Psychology		A	A		A	A														
5608 Introduction to Mathematical Models	Q	F			A			A										F		
5610 Emotion Regulation	CL	A	A	A	A	A	A	F	F	F			A		A	A				
5613H Biological Psychiatry	BN	A	A	A	A	A	A													
5615 Psychology of Language	CO				F	F	F	F	F	F			F							
5618 Computational Cog. Neuroscience	CO	A	A	A	F	F	F						F	A	F	F				
5621 Intro to Event-Related Potentials	CO	A	A	A	A	F	A	A		F	F	F	F	A	F	F				A
5832 Lifespan Sociomoral Development	D	A	F		F	A							A							
5898 Seminar in Behavioral Neuroscience	BN	A	A	A	A	A	A	A	A					A	A					

IV. Elective Courses

Course	Area	K1	K2	K3	S1	S2	S3	S4	S5	E1	E2	E3	C1	C2	C3	P1	P2	P3	P4	P5
2301 Psychology of Extraordinary Beliefs	Q	F			A				F	F										
2303 Positive Psychology	CL	F		F	F	F	F	F		F	A	A	F		F	F	F			
2311 Psychology of Motivation	CO	A	A	F	F	F	F								F	F	F			
2333 Psychology of Human Sexuality	CL	A	F	F	F	F			F	F	A	A			F	F	F			
2350 Contemp. Developmental Psychology	D	F		F	F		F					F								
2376 Interpersonal Relationships	S	F,A		F,A	F	F		F	F		F				F	F		F	F	
2420 Psychology Applied to Sport		F		F,A	F,A	F			F	F	F				F	F			F	
2462 Psychology of Creativity							F,A				F	F		F	F	F,A				
3321(H) Quant. and Statistical Methods		F			A	F	F	F	F											
3371 Language and the Mind	CO	A	F		A	F		F	F		F		F	A	A	A	F	F	F	
3624 Primate Cognition		F	F		F	F				F										
4320 Psychological Science of Addiction		F	F	F			F													
4525 Psychology of Personal Security	S	A		F,A	F,A	F	F,A		F	F,A	F	F,A	F,A		F	F	F	F		
5425 Introduction to fMRI	CO	A		F,A	F,A	F	F,A			F,A	F	F,A	F,A		F	F	F	F		
5612 Introduction to Cognitive Science	CO	A	A		F	F	F						F							
5620 Technology, Efficiency, and Happiness	CO	A	F	A	F	F	F	F				F	F	A		F				
5870 Neuroeconomics and Decision Neuroscience																				
5891 Proseminar in Cognitive Science	CO	A	A	A	A	A	A	A		A			A	A	F					

Experiential Elective Courses

3191 Internship in Psychology		F		F		F					A	F, A	F		A	F, A	F, A		A	F, A
3193.01 Individual Studies in Psychology		A				A														
3193.02 Individual Studies: Teaching		A	F, A	F, A	F, A	A	A	F	F	F	A	F, A	A	A	A	F, A	F	F, A	A	A
4998 Undergraduate Research		A			F, A	A	F, A	F, A		F, A					A					
4999.01(H) Thesis Research I			A		A	A	A	A		A	A		A	A		A	A	A		A
4999.02(H) Thesis Research II			A		A	A	A	A		A	A		A	A		A	A	A		A
5700 Science Education Outreach	D		A	A	A	A		A	A			A		A	A	A	A		A	