Spring 2019
Marketing 350 & 850
Special Topics: Consumer Neuroscience

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Office Hours: ● Tues. 4:30 – 6:00 pm
● Wed. 2:00 – 4:00 pm
● By appointment

Location: 370 Huntsman
Class times: Section 402, TR 1:30 – 3:00 pm
Section 404, TR 3:00 – 4:30 pm
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Course Description

How can studying the brain improve our understanding of consumer behavior? While neuroscience made tremendous strides throughout the 20th century, rarely were meaningful applications developed outside of medicine. Recently, however, breakthroughs in measurement and computation have accelerated brain science and created an array of opportunities in business and technology. Currently, applications to marketing research and product development are experiencing explosive growth that has been met with both excitement and skepticism. This mini-course provides an overview of the neuroscience behind and the potential for these developments. Topics will range from well-known and widely used applications, such as eye-tracking measures in the lab and the field, to emerging methods and measures, such as mobile technologies, face-reading algorithms, and neural predictors of market response. The course will also discuss applications in branding and product development, including wearable physiological devices and apps, sensory branding for foods and fragrances, pharmaceuticals and medical devices, and neuroscience-based products designed to enhance cognitive functions. These applications stem from many subfields of cognitive neuroscience, including attention, emotion, memory, and decision making. This course is self-contained and has no prerequisites. However, students with some background in business, economics, psychology, and/or neuroscience are likely to find the material covered in this course complementary to their existing knowledge.

Much of the foundational work in consumer neuroscience and neuroeconomics involves laboratory experiments. Accordingly, we will read and discuss several experimental papers. So, the craft of designing an experiment will occasionally be discussed. However, we will not dedicate significant time to the methodology of experimental design and analysis.

As will become clear as the course progresses, “consumer neuroscience" can be used to study almost any aspect of consumer behavior. Students are always encouraged to share connections they discover with the class.

Objectives

By the end of this course, students should be familiar with:

1. Techniques available and their connection(s) to various aspects of consumer research.
2. Key scientific discoveries that can guide future work in research and industry.
3. Existing applications of neuroscience to consumer research.

Students will also be asked to apply their knowledge in several ways:

1. Think critically about existing uses of neuroscience in industry.
2. Identify insights and applications from the existing scientific literature.
3. Construct and test an original research question.

Materials

The required textbook for this course is Consumer Neuroscience (hereafter referred to as CN):

Moran Cerf and Manuel Garcia-Garcia, editors. Consumer Neuroscience. MIT Press, 2017

Additional required readings are listed below and will be posted on Canvas and/or distributed in class.

Timeline

The below may be adjusted as time and interest permit. Visit Canvas for the most up-to-date syllabus.

March 19	Introduction to the Class and Consumer Neuroscience Readings: • CN Chapter 1 • Hilke Plassmann, Vinod Venkatraman, Scott Huettel, and Carolyn Yoon. Consumer Neuroscience: Applications, Challenges, and Possible Solutions. Journal of Marketing Research, 52(4):427-435, 2015
March 21	Brain Structure and Function, Neuroscience Methods Readings: • CN Chapter 2, 4 • Joseph Kable. The Cognitive Neuroscience Toolkit for the Neuroeconomist: A Functional Overview. Journal of Neuroscience, Psychology, and Economics, 4(2):63-84, 2011
March 26	Neuroscience Gone Wrong Readings: • Russel A. Poldrack. Inferring Mental States from Neuroimaging Data: From Reverse Inference to Large-Scale Decoding. Neuron, 72(5):692-697, 2011 • Dan Ariely and Gregory S. Berns. Neuromarketing: the Hope and Hype of Neuroimaging in Business. Nature Reviews Neuroscience, 11(4):284-292, 2010
March 28	Attention, Eye-tracking Demo Readings: • CN Chapter 5 • A. Selin Atalay, H. Onur Bodur, and Dina Rasolofoarison. Shining in the Center: Central Gaze Cascade Effect on Product Choice. Journal of Consumer Research, 39(4):848-866, 2012
April 2	Emotion Readings: • CN Chapter 7 • Daniel McDuff, Rana El Kaliouby, Jeffrey F. Cohn, and Rosalind W. Picard. Predicting Ad Liking and Purchase Intent: Large-Scale Analysis of Facial Responses to Ads. IEEE Transactions on Affective Computing, 6(3):223-235, 2015

April 4	Rewards, Valuation, Decisions Readings: • CN Chapter 9 • Brian Knutson, Scott Rick, Elliott Wimmer, Drazen Prelec, George Loewenstein. Neural Predictors of Purchases. Neuron, 53(1): 147-156, 2007 • Seung-Lark Lim, John P. O'Doherty and Antonio Rangel. The Decision Value Computations in the vmPFC and Striatum Use a Relative Value Code that is Guided by Visual Attention. Journal of Neuroscience, 3(37): 13214-13223, 2011
April 9	First part of class: Guest Speaker Vanessa Janowski, Vari Solutions Second part of class: Expectancies, Placebo Effects Readings: • Hilke Plassmann and Tor D. Wager. How Expectancies Shape Consumption Experiences. In Stephanie D. Preston, Morten L. Kringelbach, and Brian Knutson, editors, The Interdisciplinary Science of Consumption, pages 219-240. MIT Press, 2014 • Hilke Plassmann and Bernd Weber. Individual Differences in Marketing Placebo Effects: Evidence from Brain Imaging and Behavioral Experiments. Journal of Marketing Research, 52(4):493-510, 2015
April 11	First part of class: Guest Speaker Matthew Killingsworth, Track Your Happiness Second part of class: Expectancies, Placebo Effects, continued
April 16	Neural Changes Across the Consumer Lifespan Readings: • Adriana Galvan. Adolescent development of the reward system. Frontiers in Human Neuroscience, 4(6), 2010 • Gregory R. Samanez-Larkin and Brian Knutson. Decision Making in the Ageing Brain: Changes in Affective and Motivational Circuits. Nature Reviews Neuroscience, 16(5):278-289, 2015
April 18	Social Marketing Readings: • CN Chapter 12 • Christopher N. Cascio, Matthew Brook O'Donnell, Joseph Bayer, Francis J. Tinney Jr., and Emily B. Falk. Neural Correlates of Susceptibility to Group Opinions in Online Word-of-Mouth Recommendations. Journal of Marketing Research, 52(4):559-575, 2015 • Deblina S. Vashishtaa, B. Balaji Dr. Social Cognitive Neuroscience, Marketing Persuasion and Customer Relations. Procedia - Social and Behavioral Sciences, 65: 1033 – 1039, 2012

April 23	Learning, Memory, and Brands Readings: • CN Chapter 6, 10 • United States Postal Service Report, “Using Mail to Build Brands,” 2018 • Yu-Ping Chen, Leif D. Nelson, and Ming Hsu. From “Where" to “What": Distributed Representations of Brand Associations in the Human Brain. Journal of Marketing Research, 52(4):453-466, 2015
April 25	Predicting Outcomes Readings: • CN Chapter 13 • Greg Berns and Sarah Moore. A neural predictor of cultural popularity. Journal of Consumer Research, 22(1): 154-160, 2012 • Ariel Telpaz, Ryan Webb, and Dino J. Levy. Using EEG to Predict Consumers' Future Choices. Journal of Marketing Research, 52(4):511-529, 2015
April 30	In-Class Poster Session ****Attendance required****

Grades and Assignments

The course grade will be based on the following:

Class Participation: 10%
Essay: 10%
Quizzes: 10%
Project: 40%
Final Exam: 30%

NOTE: Late assignments will not be accepted.
There will be no make-up or extra credit assignments given.

Additional details for each item will be discussed in class and posted on Canvas.

Class Participation. All students are expected to come to each class meeting prepared to discuss the current topic and meaningfully participate in class exercises. Keep in mind that *quantity* of “participation" is not equivalent to quality. Unexcused absences will also affect your class participation grade.

Quizzes. There are four scheduled quizzes. These will be brief exercises based on the assigned readings and class lectures. They will be posted on Canvas and are to be completed outside of class. The quizzes can be completed in groups of between 2 to 6 students – groups need not be the same from one quiz to the next.

Project. Groups of 4 to 6 students will complete a project addressing a question(s) in consumer behavior that can be addressed using neuroscience data. Projects will be presented as posters in class on April 30th and all students are required to attend class that day.

Final Exam. The online final exam will cover concepts presented in lectures and the assigned readings. This is an open-book, open notes exam, but it must be done individually.

Miscellanea

Staying up to date. To optimize the learning experience, I reserve the right to adjust or change syllabus dates and policies. Students are responsible to learn about these changes if they miss class time.

Electronics policy. Research indicates that hand-written notes are best for facilitating long-term memories. To promote learning, retention, and engagement with the course, all phones, tablets, computers, and other electronics for all classes must be turned off and put out of sight during the entire session unless you are instructed otherwise. This policy will be strictly enforced. If you are caught using an electronic device, I may confiscate it for the rest of the class period.

Communicating with me. I will always do my best to respond quickly to emails. Please give me 24 hours, but feel free to send again after that. My preference and priority for meetings and communication will be Monday through Thursday. When sending emails to me, please follow email etiquette such as using a relevant subject line.

Accommodations. The University of Pennsylvania provides reasonable accommodations to students with disabilities who have self-identified and been approved by the office of Student Disabilities Services (SDS). If you have not yet contacted SDS, and would like to request accommodations or have questions, you can make an appointment by calling SDS 215-573-9235. The office is in the Weingarten Learning Resources Center at Stouffer Commons 3702 Spruce Street, Suite 300. All services are confidential.

A note about the readings. Many of the assigned readings are from scholarly journals, and can have intimidating statistics, complex brain images or mathematical proofs. Do not worry, a comprehensive understanding of those parts is not the purpose of this course. The goal is to understand the motivation for the paper, the key hypotheses, the data that were used, the conclusions, any shortcomings, and potential applications. I strongly encourage students to push through the entire paper each time; it will get easier and more rewarding as the course progresses.

Academic Integrity

Please re-familiarize yourself with Penn's Code of Academic Integrity:

https://catalog.upenn.edu/pennbook/code-of-academic-integrity/

You are encouraged to discuss class topics with other students in the class. However, your individual and group assignments, responses, and contributions to class are to be your own original work and must truthfully represent the time and effort you apply. If you are unsure whether your work constitutes a violation of the Code of Academic Integrity, it is your responsibility to clarify any ambiguities. Consult with the instructor if you have any questions about academic integrity expectations.

To ensure fairness, students suspected of cheating will be referred to the Office of Student Conduct. The Office of Student Conduct will determine if there was cheating and if so, what punishment will be administered. There are no exceptions.

Important Dates

Assignments are due at 11:59 PM EST on the date listed. Those received after this won't be graded.

Quiz 1	March 25
Quiz 2	April 5
Project abstract due	April 5
Essay due	April 11

Quiz 3	April 15
Quiz 4	April 22
Poster PDF due	April 26
In-class poster conference	April 30
Final exam (online)	May 6

Other Resources

Please be aware that there are many resources available to you.

- The Tutoring Center: 215-898-8596
- Weingarten Learning Resources Center: 215-573-9235
- Counseling and Psychological Services (CAPS): 215-898-7021
- First Step alcohol and drug intervention: 215-573-3525
- Student Disabilities Services: 215-573-9235
- Penn Women's Center: 215-898-8611
- Penn Violence Prevention: 215-746-2642