Introduction to Psychology

Syllabus

Day	Course material	Lab	Readings

1	Welcome and introduction
	
	Learning objectives
	• Foundational psychological theories.
	• Psychodynamics theory
	• Behaviorist theory
	• Have a general understanding of these main subfields of psychology:
	  ○ Cognitive psychology
	  ○ Clinical psychology
	  ○ Social psychology
	  ○ Developmental psychology
	  ○ Media psychology
		Capstone project introduction
		Introduction to R
		The Humanity X dataset.	

2	Research methods and critical thinking Learning objectives • What is the scientific method? • Outline the five steps of the scientific method • What makes a statement a hypothesis? • How does one operationalize a concept? • Observational, correlational, and experimental research	Study design	Psychological Science, Chapter 2 Quiz 1 (Complete before the class) Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science* (If you don't have time, you can simply read the first page which is a summary of the study.)

	• How are experimental and control groups differ? • Why can we not use correlational data to provide evidence for cause-effect relationships?		
3	Psychological disorders Learning objectives • Introduce the DSM-5 diagnostic and classification system for mental disorders. • Discuss the criteria used to differentiate normal from abnormal behavior. • Introduce and give examples of various types of mental disorders including depression, obsessive-compulsive disorder, anxiety disorders. • Introduce common personality disorders. • Discuss the usefulness of DSM-5 in making treatment decisions. <u>Guest lecture: Being a therapist in the U.S. – Jungkeun Kim</u>	Data description	Psychological Science, Chapter 14 Chwyl, C., Chen, P., & Zaki, J. (2020). Beliefs About Self-Compassion: Implications for Coping and Self-Improvement. Personality and Social Psychology Bulletin, 0146167220965303.
4	Brain & the mind Learning objectives • Basic introduction to brain anatomy. • Identify parts of a neuron: how do neurons communicate?	Experimental design	Psychological Science, Chapter 3 Schwartz, S. J., Lilienfeld, S. O., Meca, A., & Sauvigné, K. C. (2016). The role of neuroscience within psychology: A call for inclusiveness over exclusiveness. *American Psychologist*

	• Discuss the crucial functions handled by the brainstem. • Introduce the functions of the frontal, parietal, occipital, and temporal lobes. • Introduce the tools we use to study brain function.		Bennet, C., Baird, A., Miller, M., & Wolford, G. (2010). Neural correlates of interspecies perspective taking in the post-mortem Atlantic salmon: An argument for proper multiple comparisons correction. *Journal of Serendipitous and Unexpected Results* Bonus reading Jonas, E., & Kording, K. P. (2017). Could a neuroscientist understand a microprocessor?. PLoS computational biology, 13(1), e1005268.
5	Learning Learning objectives • Describe the processes of classical conditioning • How does extinction occur during classical conditioning? • Outline the factors that influence classical conditioning. • What are the differences of positive and negative reinforcements? • Describe the process of observational learning as demonstrated by Bandura's experiments and discuss the impact of antisocial and prosocial modeling. • How are mirror neurons related to observational learning?	Capstone project idea generation	Zaki, J., Kallman, S., Wimmer, G. E., Ochsner, K., & Shohamy, D. (2016). Social cognition as reinforcement learning: feedback modulates emotion inference. Journal of Cognitive Neuroscience Vyas, S., Golub, M. D., Sussillo, D., & Shenoy, K. V. (2020). Computation through neural population dynamics. *Annual Review of Neuroscience* Bonus reading Neftci, E. O., & Averbeck, B. B. (2019). Reinforcement learning in artificial and biological systems. *Nature Machine Intelligence*

	Guest lecture: What can we learn about the brain from artificial agents. – Connor Brennan (University of Pennsylvania)		Brennan, C., & Proekt, A. (2019). A quantitative model of conserved macroscopic dynamics predicts future motor commands. *Elife*
6	Human development Learning objectives • How do we understand how infants and children think? • Introduce Harlow's research regarding maternal deprivation and attachment in monkeys. • Introduce the characteristics of Piaget's stages of development. • Review Erikson's stages of psychosocial development, particularly those related to adolescence, middle age, and later adulthood. • Outline neural, cognitive, and social changes associated with adolescence.	Capstone project design	R Pei, EC Kranzler, AB Suleiman, EB Falk (2019). Promoting adolescent health: insights from developmental and communication neuroscience. *Behavioural Public Policy* Reiter, A. M., Moutoussis, M., Vanes, L., Kievit, R., Bullmore, E. T., Goodyer, I. M., ... & Dolan, R. J. (2021). Preference uncertainty accounts for developmental effects on susceptibility to peer influence in adolescence. *Nature Communications* Chein, J., Albert, D., O'Brien, L., Uckert, K., & Steinberg, L. (2011). Peers increase adolescent risk taking by enhancing activity in the brain's reward circuitry. *Developmental science*
7	Personality Learning objectives • Outline approaches to personality assessment and discuss the reliability and validity of each approach. • Present examples the big five personality test.	Multivariate regression	Rothmann, S., & Coetzer, E. P. (2003). The big five personality dimensions and job performance. *Journal of Industrial Psychology* Wilson, A. E., & Ross, M. (2001). From chump to champ: People's appraisals of their earlier and present selves. *Journal of Personality and Social Psychology*

	• Introduce each trait in the big five personality theory. • Discuss trait theories of personality development.		Bonus reading Malouff, J. M., Thorsteinsson, E. B., Schutte, N. S., Bhullar, N., & Rooke, S. E. (2010). The five-factor model of personality and relationship satisfaction of intimate partners: A meta-analysis. *Journal of Research in Personality*
8	Social behavior Learning objectives • How do we perceive the self and others. • Introduce the classic studies by Milgram and Zimbardo, and discuss the ethical implications of these studies. • Introduce conformity. • Introduce the processes associated with stereotypes, prejudice, and discrimination. • Describe and give examples of empathy and altruism.	Interactions	Cacioppo, J. T., Hawkley, L. C., & Berntson, G. G. (2003). The anatomy of loneliness. Current directions in psychological science, 12(3), 71-74. Cialdini, R.B., and Goldstein, N.J. (2004). Social influence: compliance and conformity. *Annu Rev Psychol* Tamir DI, Zaki J, Mitchell JP. 2015. Informing others is associated with behavioral and neural signatures of value. *Exp. Psychol. Gen.* Bonus reading: Zhu, Y., Zhang, L., Fan, J., & Han, S. (2007). Neural basis of cultural influence on self-representation. *Neuroimage*
9	Persuasion Learning objectives • Define attitudes and discuss their relationship with behavior. • The role of fear and guilt in persuasion.	Data visualization	Falk, E., & Scholz, C. (2018). Persuasion, influence, and value: Perspectives from communication and social neuroscience. *Annual review of psychology*

	• Explain the foot-in-the-door phenomenon and the effect of role playing on attitudes in terms of cognitive dissonance theory. • Neural mechanisms involved in persuasion	Berger, J. (2014). Word of mouth and interpersonal communication: A review and directions for future research. J*ournal of Consumer Psychology.*
10	Health psychology Learning objectives • Discuss how stress increases the risk of disease by inhibiting the activity of the body's immune system. • Introduce and discuss different strategies for coping with stress. • Introduce the Integrated Model of Behavior Change and its role in health interventions. • Self-affirmation and it's role in health promotion	Falk, E. B., O'Donnell, M. B., Cascio, C. N., Tinney, F., Kang, Y., Lieberman, M. D., Taylor, S. E., An, L., Resnicow, K., & Strecher, V. J. (2015). Self-affirmation alters the brain's response to health messages and subsequent behavior change. *Proceedings of the National Academy of Sciences* Fishbein, M. (2008). A reasoned action approach to health promotion. *Medical Decision Making* Bonus reading Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In Communication and persuasion (pp. 1-24). Springer, New York, NY. Van Bavel, J. J., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., ... & Willer, R. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature human behaviour*

Trial format

Having been influenced by positive experience taking Dr. Emiy Falk's class, from day 5 onwards we will read a number of papers including 1-2 target articles for each class. Following initial deliberations in which the background readings are discussed, the target articles will be put on trial. One student will act as the prosecutor and one as the defense of each article. Each will have up to 2 minutes to present his or her case, followed by a 1-minute rebuttal to the opponent. After the initial arguments, the floor opens for team-based cross-examination, followed by jury deliberations. The jury is to decide whether the article makes a meaningful contribution to science beyond a shadow of a doubt and in relation to the other articles we have read.