# PSY 5370: LEARNING, COGNITION, & MOTIVATION

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| **Instructor:** | Crystal Oberle, Ph.D. | **Semester:** | Fall 2017 |
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| **Office Phone:** | 512-245-3166 | **Class Room:** | ELA 283-B |
| **Office Location:** | UAC 232 | **Class Time:** | Tue & Thu 3:30-4:50 |
| **Office Hours:** | Tue & Thu 1:00-3:30, or by appt. | | |

**Course Description:** PSY 5370 addresses the acquisition of behavioral responses and knowledge. Coverage includes classical conditioning, operant conditioning (punishment and reinforcement), extinction of conditioned responses, motivation, decision making, problem solving, and memory (retention and forgetting of semantic, episodic, and skill memories). Major theories are treated with attention to classical experiments, but greatest emphasis is given to contemporary research.

**Course Objectives:**

- Theories and applications: After completing this course, you will be able to explain and apply the major theories in learning, cognition, and motivation. A sample of content-based learning objectives is provided below.
    - Understand how conditioning may treat mental-health and behavioral problems
    - Understand the different motivations underlying health-related behaviors
    - Understand the different reasons underlying high-stakes decision making
    - Understand the different problem-solving strategies and aspects of creativity
    - Understand how working memory works in normal and special populations
    - Understand how memory may be enhanced or distorted by lifestyle or trauma
    - Understand how skills are acquired and enhanced in sports
- Verbal and written communication: Through the class discussions and presentations in this course, you will enhance your abilities to express yourself clearly, completely, and accurately. Through the paper for this course, you will enhance your abilities to paraphrase, summarize, organize, and think critically about the topics of your writing.

**Readings:** The required readings for this course consist of the following journal articles that are posted in the Resources section of the TRACS course site.

1. Vervliet, B., Craske, M. G., & Hermans, D. (2013). Fear extinction and relapse: State of the art. *Annual Review of Clinical Psychology*, *9*, 215-248.
2. Rosenthal, M. Z., & Kutlu, M. G. (2014). Translation of associative learning models into extinction reminders delivered via mobile phones during cue exposure interventions for substance use. *Psychology of Addictive Behaviors*, *28*, 863-871.
3. Lambie, I., & Randell, I. (2013). The impact of incarceration on juvenile offenders. *Clinical Psychology Review*, *33*, 448-459.
4. Lydon, S., Healy, O., Moran, L., & Foody, C. (2015). A quantitative examination of punishment research. *Research in Developmental Disabilities*, *36*, 470-484.
5. Promberger, M., & Marteau, T. M. (2013). When do financial incentives reduce intrinsic motivation? Comparing behaviors studied in psychological and economic literatures. *Health Psychology*, *32*, 950-957.

6. Ng, J. Y. Y., Ntoumanis, M., Thogersen-Ntoumani, C., Deci, E. L., Ryan, R. M., Duda, J. L., & Williams, G. C. (2012). Self-determination theory applied to health contexts: A meta-analysis. *Perspectives on Psychological Science*, *7*, 325-340.

7. McEachan, R. R. C., Conner, M., Taylor, N. J., & Lawton, R. J. (2011). Prospective prediction of health-related behaviors with the theory of planned behavior: A meta-analysis. *Health Psychology Review*, *5*, 97-144.

8. Schwarzer, R., Lippke, S., & Luszczynska, A. (2011). Mechanisms of health behavior change in persons with chronic illness or disability: The health action process approach (HAPA). *Rehabilitation Psychology*, *56*, 161-170.

9. Fortune, E. E., & Goodie, A. S. (2012). Cognitive distortions as a component and treatment focus of pathological gambling: A review. *Psychology of Addictive Behaviors*, *26*, 298-310.

10. Blumenthal-Barby, J. S., & Krieger, H. (2015). Cognitive biases and heuristics in medical decision making: A critical review using a systematic search strategy. *Medical Decision Making*, *35*, 539-557.

11. Albert, D., & Steinberg, L. (2011). Judgment and decision making in adolescence. *Journal of Research on Adolescence*, *21*, 211-224.

12. Blalock, S. J., & Reyna, V. F. (2016). Using fuzzy-trace theory to understand and improve health judgments, decisions, and behaviors. *Health Psychology*, *35*, 781-792.

13. Reed, S. K. (2016). The structure of ill-structured (and well-structured) problems revisited. *Educational Psychology Review*, *28*, 691-716.

14. Sio, U. N., & Ormerod, T. C. (2009). Does incubation enhance problem solving? A meta-analytic review. *Psychological Bulletin*, *135*, 94-120.

15. Weisberg, R. (2010). The study of creativity: From genius to cognitive science. *International Journal of Cultural Psychology*, *16*, 235-253.

16. Zeng, L., Proctor, R., & Salvendy, G. (2011). Can traditional divergent thinking tests be trusted in measuring and predicting real-world creativity? *Creativity Research Journal*, *23*, 24-37.

17. Fenesi, B., Sana, F., Kim, J. A., & Shore, D. I. (2015). Reconceptualizing working memory in educational research. *Educational Psychology Review*, *27*, 333-351.

18. Sala, G., & Gobet, F. (2017). Working memory training in typically developing children: A meta-analysis of the available evidence. *Developmental Psychology*, *53*, 671-685.

19. Wang, Y., Zhang, Y., Liu, L, Cui, J., Wang, J., Shum, D. H. K, … Chan, R. C. K. (2017). A meta-analysis of working memory impairments in autism spectrum disorders. *Neuropsychology Review*, *27*, 46-61.

20. Alderson, R. M., Kasper, L. J., Hudec, K. L., & Patros, C. H. G. (2013). Attention-deficit/hyperactivity disorder (ADHD) and working memory in adults: A meta-analytic review. *Neuropsychology*, *27*, 287-302.

21. Roig, M., Nordbrandt, S., Geertsen, S. S., & Nielsen, J. B. (2013). The effects of cardiovascular exercise on human memory: A review with meta-analysis. *Neuroscience & Biobehavioral Reviews*, *37*, 1645-1666.

22. Gorby, H. E., Brownawell, A. M., & Falk, M. C. (2010). Do specific dietary constituents and supplements affect mental energy? Review of the evidence. *Nutrition Reviews*, *68*, 697-718.

23. Pezdek, K., & Lam, S. (2007). What research paradigms have cognitive psychologists used to study "false memory," and what are the implications of these choices? *Consciousness & Cognition*, *16*, 2-17.

24. Wade, K. A., Sharman, S. J., Garry, M., Memon, A., Mazzoni, G., Merckelbach, H., & Loftus, E. G. (2007). False claims about false memory research. *Consciousness & Cognition*, *16*, 18-28.

25. Keogh, J. W. L., & Hume, P. A. (2012). Evidence for biomechanics and motor learning research improving golf performance. *Sports Biomechanics*, *11*, 288-309.

26. Broadbent, D. P., Causer, J., Williams, A. M., & Ford, P. R. (2015). Perceptual-cognitive skill training and its transfer to expert performance in the field: Future research directions. *European Journal of Sport Science*, *15*, 322-331.

27. Tod, D., Hardy, J., & Oliver, E. (2011). Effects of self-talk: A systematic review. *Journal of Sport & Exercise Psychology*, *33*, 666-687.

28. Weinberg, R. (2008). Does imagery work? Effects on performance and mental skills. *Journal of Imagery Research in Sport & Physical Activity*, *3*, 1-21.

**Evaluation Details:**

- Journal articles -- thought questions, response outlines, & class discussions (10 points each, lowest two scores dropped, 120 points total): During 14 classes, we will discuss the articles above. Before noon on the days of these classes (see the schedule on p. 6 of this syllabus), submit to the Assignments section of TRACS a document that includes two thought questions and their response outlines: one per each of the two articles that will be discussed that day. These questions will help facilitate our in-class discussions. Note that these questions don't need to (and shouldn't) cover every point in the articles, but they should be thoughtful enough to allow several students to contribute.

    - *Example of a thoughtful question & response outline directly based on Article 1*:

      Based on research showing *effective* means of reducing return of fear, describe how you may best treat cynophobia—a pathological fear of dogs—in a patient named Taylor.

        - Have more extinction trials (i.e., exposure to dogs) in order to strengthen the inhibitory CS-US association.
        - Have extinction trials with a variety of stimuli (e.g., all kinds of dogs rather than just pit bulls) to increase generalization across stimuli.
        - Have extinction trials in a variety of real-world contexts (e.g., at a park, in Taylor's neighborhood), having many trials in each context, to increase generalization across contexts.
        - Present a new cue stimulus (e.g., a bracelet) during each extinction trial, and tell Taylor to always have this stimulus at all times as a cue that helps retrieve the inhibitory CS-US association.
        - Ask Taylor to mentally reinstate the extinction episode (i.e., think back to the successful trials toward the end of therapy when the dogs no longer produced fear).
        - Devalue the US, by repeatedly presenting it and adding imagery rescripting (i.e., imagining more control over the aversive effects of the US).
        - If Taylor just recently developed the phobia after a traumatic event (e.g., a recent attack by a dog), then follow a single exposure of the CS with a beta-blocker to weaken the new CS-US association.

- *Grading of each thought question & response outline*:
  - 0 = no thought question or response outline were submitted by deadline
  - 1 = no response outline was submitted by deadline
  - 2 = thought question & response outline were lacking in thoughtfulness
  - 3 = thought question & response outline were very thoughtful
- *Grading of class discussion*:
  - 0 = didn't attend class
  - 1 = didn't participate
  - 2 = participated infrequently
  - 3 = participated frequently but contribution was lacking in thoughtfulness
  - 4 = participated frequently & contribution was consistently thoughtful

- Attention & participation (2.5 points each, lowest two scores dropped, 30 points total): During the remaining 14 classes, when either the instructor or a student will give a lecture, students are expected to attend class, to be attentive, and to participate in short class activities or discussions.
  - *Grading of attention & participation*:
    - 0 = didn't attend class
    - 1 = was frequently distracted (e.g., on phone) or didn't participate
    - 2 = was occasionally distracted (e.g., on phone) but did participate
    - 2.5 = paid complete attention & participated in class activities/discussion

- Research paper (50 points): Pick a topic that interests you and is relevant to this course, and write an APA-formatted paper using a minimum of 7 peer-reviewed journal articles that were published during the past 15 years (2002 or later). The APA guide in the Resources section of TRACS provides guidelines on writing style (pp. 2-6), format (pp. 7-11), your title page (pp. 12-13), the body of your paper (p. 14), and your reference list (pp. 21-23). You don't need an abstract or any other section that appears in this guide. An appropriate length for the body of your paper is 5-10 pages. Before 11:59 pm on the deadline (see p. 6 of this syllabus), submit to the Assignments section of TRACS your paper AND copies of all your sources.
  - *Grading of research paper*:
    - Writing style (5 points)
    - Format (4 points)
    - Title page (2 points)
    - Body of the paper (35 points)
    - Reference list (4 points)
    - Additional points will be deducted for late submission (5 points per each day late) and plagiarism (2 points per each instance of not paraphrasing the authors' words; 5 points per each instance of not giving credit to the proper source).

- Class presentation (20 points): You will give a PowerPoint presentation over the material in your research paper. Your presentation should be 25-40 minutes, which includes 5-10 minutes for either a class activity or a discussion based on questions that you prepare in advance.
  - *Grading of class presentation*:
    - 20-30 minutes for PowerPoint presentation that involves a clear and effective explanation of the information (16 points)
    - 5-10 minutes for class activity or discussion (4 points)

- Grade distribution: 197–220 points = A
  175–196 points = B
  153–174 points = C
  131–152 points = D
  0–130 points = F

**Attendance:** As this course is seminar-based, the success of the course depends on students' attendance and participation. However, I realize that illnesses and other life situations may occasionally occur and result in an absence. As my way of uniformly handling such situations, instead of offering make-up opportunities for missed points due to absence, as indicated earlier in this syllabus, I drop the lowest two scores for (a) the journal article questions, responses, and discussions and for (b) the attention and participation scores on the days with instructor/student lectures. Thus, absence on four days, which is generally rare among graduate students anyway, will have absolutely no impact on your final grade in the course.

**Accommodations** (http://uweb.txstate.edu/academicaffairs/pps/PPS4/4-01.doc)**:** If you are a student with a disability who requires an accommodation(s) to participate in this course, please contact me as soon as possible. You will be asked to provide documentation from the Office of Disability Services. Failure to contact me in a timely manner may delay your accommodations.

**Academic Honesty** (http://www.txstate.edu/effective/upps/upps-07-10-01.html)**:**

- Honor Code: As members of a community dedicated to learning, inquiry, and creation, the students, faculty, and administration of our University live by the principles in this Honor Code.
  - *We are conscientious*. We complete our work on time and make every effort to do it right. We come to class prepared and are willing to demonstrate it. We hold ourselves to doing what is required, embrace rigor, and shun mediocrity, special requests, and excuses.
  - *We are respectful*. We act civilly toward one another and cooperate with each other. We strive to create an environment in which people respect and listen to one another, speaking when appropriate, and permitting others to participate and express their views.
  - *We are honest*. We do our own work and are honest with one another in all matters. We understand how various acts of dishonesty, like plagiarizing, falsifying data, and giving or receiving assistance to which one is not entitled, conflict as much with academic achievement as with the values of honesty and integrity.
- Violation of the Honor Code may result in a reduction to any level of the grade in the course, or a reduction in grade on the assignment affected by the violation.
  - *Cheating* is engaging in any of the following that are relevant to this course: (a) copying from another student's paper/assignment; (b) submitting as one's own work any research paper or other assignment prepared by an individual or firm; and (c) submitting the same paper, without substantial revision or expansion of the work, in an attempt to obtain credit for work submitted in another course.
  - *Plagiarism* is the appropriation of another's work and the inadequately or inappropriately acknowledged incorporation of that work in one's own written work. Examples include copying from another student's paper partially or entirely, and copying the wording or ideas from another source without proper citation and quotation marks for direct quotes.

# PSY 5370 Fall 2017 Schedule

| DATE | LECTURE / DISCUSSION / PRESENTATION |
|---|---|
| Aug. 29 | Introduction to the course |
| 31 | Conditioning: Classical & operant conditioning |
| Sep. 5 | Articles 1 & 2: Classical conditioning to treat mental health problems |
| 7 | Articles 3 & 4: Operant conditioning to treat behavioral problems |
| 12 | Motivation: Content & process theories |
| 14 | Articles 5 & 6: Reward-based motivations for health-related behaviors |
| 19 | Articles 7 & 8: Cognitive-based motivations for health-related behaviors |
| 21 | Decision making: Heuristics & theories |
| 26 | Articles 9 & 10: Heuristics & biases influencing high-stakes decision making |
| 28 | Articles 11 & 12: Theories explaining high-stakes decision making |
| Oct. 3 | Problem solving: Strategies & links to creativity |
| 5 | Articles 13 & 14: Different strategies for solving different types of problems |
| 10 | Articles 15 & 16: Different theoretical & measurement aspects of creativity |
| 12 | Memory models: Information processing & working memory models |
| 17 | Articles 17 & 18: Discovering how working memory works |
| 19 | Articles 19 & 20: Working memory deficits in special populations |
| 24 | Semantic & episodic memory: Memory enhancement & memory failure |
| 26 | Articles 21 & 22: Lifestyle factors affecting memory processes |
| 31 | Articles 23 & 24: False & distorted memories of traumatic events |
| Nov. 2 | Skill memory: Learning & expertise in perceptual-motor & cognitive skills |
| 7 | Articles 25 & 26: Skill acquisition in sports |
| 9 | Articles 27 & 28: Mental skills training to enhance sport performance |
| 14 | Student presentations |
| 16 | Student presentations |
| 21 | Student presentations |
| 23 | *Happy Thanksgiving - no class* |
| 28 | Student presentations |
| 30 | Student presentations |
| Dec. 5 | Student presentations |
| 7 | Student presentations |
| 12 | Research paper (serving as final) due 12/12, the day of the scheduled final exam |