

COURSE SYLLABUS (Updated 4 Sept)

Overview and Goals of the Course. The phenomena of learning and theories by which to account for those phenomena have been central to American psychology for at least a hundred years. Much of the history of the scientific study of learning within psychology has a decidedly behavioristic cast. The behavioristic perspective will dominate our study of learning theory during the course. In effect, it will ask you to acquire a new way of talking and thinking about learning if you are not already familiar with behaviorism and behavior analysis. You may find that doing so is unsettling and demanding, since it requires you to talk and think in ways that may be foreign, even counterintuitive. In this sense, the course may appear similar to one in a foreign language or culture.

In addition to reading about learning theory, you will also observe, analyze, and report the behavior of a simulated subject—a virtual rodent named Sniffy. Class meetings will include conversations and presentations based on the assigned reading and the results of Sniffy exercises. These conversations will give way alternately to Readiness Assessments and Application Activities based on the assigned reading. Mid-semester and final examinations consisting of essay items will also be part of the course.

The course is organized on the Team-based Learning format. Final grades will be based on individual performance as well as Team performance.

The individual- and Team-based goals of the course are:

- (1) To expand your understanding of and facility with the concepts by which behavior analysis makes sense of learning phenomena;
- (2) To connect those concepts to the behavior of a simulated laboratory subject; and
- (3) To gain familiarity with applications of learning theory to human behavior, including your own.

Your first assignment is to study this syllabus thoroughly. You should become conversant with it. Failure to do so could jeopardize your performance in the course.

The Textbooks and Other Readings. The textbooks required for purchase are:

- Alloway, T, Wilson, G., & Graham, J. (2005). *Sniffy the virtual rat, Pro Version 2.0*. Belmont, CA: Thomson/Wadsworth
- Powell, R. A., Symbaluk, D. G., & Honey, P. L. (2009). *Introduction to learning & behavior*, 3rd ed. Belmont, CA: Thomson/Wadsworth.

Recommended for purchase is:

American Psychological Association. (2010). *Publication manual of the American Psychological Association*, 6th ed. Washington, D.C.: American Psychological Association.

In addition to the required textbooks, other supplementary readings will be assigned:

- Bem, D. J. (2004). Writing the empirical journal article. In Darley, J. M., Zanna, M. P., & Rodiger III, H. L. (Eds.) , pp. 185-220. *The compleat academic: A career guide*, 2nd ed. Washington, D.C.: American Psychological Association.
- Pryor, K. (1999). Shaping: Developing super performance without strain or pain. In *Don't shoot the dog: The new art of teaching and training*, Rev. ed. (pp. 34-67). New York: Bantam Books.
- Rachlin, H. (2003). Autonomy from the viewpoint of teleological behaviorism. *Social Philosophy and Social Policy*, 20, 245-264.
- Roberts, S. (2004). Self-experimentation as a source of new ideas: Ten examples about sleep, mood, health, and weight. *Behavioral and Brain Sciences*, 27, 227-287.

Each of the readings is available from Electronic Reserve at the Blackboard Web site for the course.

Readiness Assessments and Application Activities. Class meetings will occasionally include either a Readiness Assessment or an Application Activity based on the assigned reading. Each Readiness Assessment will have an individual and a Team component and will consist of 25 multiple-choice items. The Application Activities will require the Team to develop a brief written response that will be submitted by e-mail to me. Each Team member will receive the Team's score for the Team component of the Readiness Assessments and the Application Activities regardless of whether she or he is in attendance at the class meeting when these events take place.

There are no makeup opportunities for the Readiness Assessments. But should you miss one or more, you will have the opportunity at semester's end to inform me of the reasons for your absence. You will use the End-of-Semester Considerations Form to do so. I will consider the extenuating reasons in the process of assigning final grades.

The Sniffy Exercises, Research Reports,, and Research Manuscripts. I have divided the 47 exercises in the Sniffy textbook (Alloway et al., 2005) into 8 different sets (see below). You will note that I have included one or more data-based questions for each exercise. These questions are meant to stimulate your thinking about the results of that exercise.

During the semester *you will perform eight of the exercises* in the Sniffy textbook (one per set; see the Course Calendar for the due dates) and *will author a Research Report for four of the exercises* that answers the question(s) for the specific exercise. The Research Report should be *one double-spaced page in length*, should briefly describe the procedure and results, and, in the process, should answer the question(s) clearly and directly. A graphical presentation of relevant data should be included. Please use 10-pt font or larger. The Research Report is due at the beginning of the class meeting on the date that appears in the Course Calendar. A penalty for late submission will be imposed—20% of the score per day of lateness.

The exercise sets listed below are the same as those designated for the In-class Presentations (see the Course Calendar for dates and assignments to Teams). The choice of a specific exercise is left to the Team. However, you should be aware that, in some cases, the exercise may require you to have completed a prior exercise.

Each Team will also author a pair of Research Manuscripts during the semester—one based on an exercise in Sets 1-3 and the second based on an exercise in Sets 4-8. The exercises your Team selects for the Research Manuscripts should not be the same as the exercises Team members selected for the Research Reports. You should prepare the manuscripts using the *Publication Manual of the American Psychological Association*, 6th ed. and also the Bem article.

Each Team member should complete the exercise selected by the Team. The manuscripts should report the data from the multiple replications. The manuscripts should be typewritten (double-spaced) and should include a graphical presentation of the pertinent data (that is, you should provide figures whose content is copied and pasted into a Word file from the Sniffy software). There will be three evaluation stages for each manuscript: Peer, Graduate Teaching Assistant, and Instructor, with the final grade assigned by the instructor. The deadlines for submission of the drafts are found in the Course Calendar. They are due on those dates no later than midnight. There will be a penalty for late submission of the drafts—20% of the final score per day of lateness. Manuscripts typically average 7-10 pages in length, including the title page, reference page, tables, figure caption page, and figures. A rubric for evaluation of the manuscripts will be provided for use in peer reviews.

In-class Q/A Sessions and Presentations of Sniffy Exercises. Teams will provide the questions for the Question/Answer (Q/A) sessions during the semester according to random selection.

Your Team should prepare 3 questions for each session. The questions should be related to the assigned reading for that session and should focus on topics found there that are potentially confusing. As your Team authors its questions, strive to avoid those that merely ask students to recall or recognize the content of the textbook. Strive for questions that go beyond what is given there so that the questions are more thought-provoking and not just recitative. The 3 questions should be presented on a single PowerPoint slide and be available on a USB flash drive or from an e-mail account. The Team that is called on should upload the questions at the Tech Podium as quickly as possible. Each Team should e-mail their PowerPoint slide to Jonathan Rogers prior to class meeting when the Q/A session is scheduled. The collection of questions that Jonathan will maintain may be useful in preparing for assessments and exams.

In addition, Teams will make In-class Presentations during the semester. The presentation should utilize PowerPoint to report one of the Sniffy exercises found in the set(s) assigned for the presentation. It should introduce the exercise in terms of the concepts on which it focused, the procedure it involved, the results you found, and your interpretation of the results. Feel free to be visually and auditorily creative with your presentation. The schedule of In-class Presentations appears in the Course Calendar. One Team will be randomly selected to make the presentation. Each Team should e-mail their presentation to Jonathan Rogers prior to the class meeting when the presentation is scheduled.

The Sniffy Exercise Sets. Each exercise in each of the 8 sets included in the table below is accompanied by one or more questions that are meant to stimulate your thinking about the results of the exercise. You should address the question(s) in the Research Report for the exercises you select. The exercises are found in the Alloway et al. textbook.

Set	Exercise	Data-based Questions
1	1	Compare and contrast the course of acquisition using the Movement Ratio, Suppression Ratio, and CS Response Strength windows.
	2	Compare and contrast the course of extinction using the Movement Ratio, Suppression Ratio, and CS Response Strength windows.
	3	Compare and contrast the evidence for spontaneous recovery using the Movement Ratio, Suppression Ratio and CS Response Strength windows.
	4	Use a spreadsheet program to create a graph that displays the effect of CS intensity in terms of the Movement Ratio or the Suppression Ratio (not CS Response Strength). How does it differ from the graph of the effect of CS intensity in terms of the CS response strength that appears in the textbook on p. 53?
	5	Use a spreadsheet program to create a graph that displays the effect of US intensity in terms of the Movement Ratio or Suppression Ratio (not CS Response Strength). How does it differ from the graph for the effect of US intensity in terms of the CS response strength that appears in the textbook on p. 55?
2	6	How do the data evidence the fact that compound conditioning is additive?
	7	Which aspects of the data most clearly depict blocking? Give reasons for your selections.
	8	Which aspects of the data most clearly depict overshadowing? Give reasons for your selections.
	9	Which aspects of the data most clearly depict overexpectation? Give reasons for your selections.
	10	Which aspect of the data from the experimental and control conditions provides the clearest evidence for the effect of the inhibitory stimulus on excitatory conditioning?
	11	Which aspect of the data from the two stages of the experiment provides the clearest evidence for the effect of the inhibitory stimulus on excitatory conditioning? Give reasons for your selection.
3	12	Which aspects of the data most clearly depict sensory preconditioning? Give reasons for your selection.

	13	How do the data answer the question of whether higher-order conditioning is more potent than first-order conditioning?
	19	What is the relationship between background conditioning and habituation? Between background conditioning and sensitization?
	20	Which aspect of the data most clearly defines the CS pre-exposure effect? Give reasons for your selection.
	21	Which aspect of the data most clearly defines the US pre-exposure effect? Give reasons for your selection
4	22	How is classical conditioning involved in magazine training?
	23	What could you have done differently to make shaping more efficient?
	24	What do you consider the three most significant aspects of the shaping data to be? Give reasons for your selections.
	25	How long did it take to reach the extinction criterion? What features of extinction distinguish it from shaping?
	26	Which aspects of the data provide the best evidence for secondary reinforcement? Give reasons for your selections
	27	Which aspects of the data provide the best evidence for spontaneous recovery? Give reasons for your selections.
5	28	Compare and contrast the effect of a single mild shock on the course of extinction following shaping.
	29	Compare and contrast the effect of a single severe shock with the effect of a single mild shock (Exercise 28) on the course of extinction.
	30	Which aspects of the data provide the best evidence for the differential effects of extinction v. repeated mild punishment on behavior? Give reasons for your selections.
6	31	What two characteristics of responding on VR schedules are clearly revealed by the data?
	32	Which aspect of the data most clearly illustrates the effect of increasing the VR requirement?
	33	What two characteristics of responding on VI schedules are clearly revealed by the data?
	34	What two characteristics of responding on FR schedules are clearly revealed by the data?
	35	What two characteristics of responding on FI schedules are clearly revealed by the data?
	36	Which aspect of the data most clearly illustrates the partial reinforcement effect?
7	37	Which aspect of the data most clearly illustrates stimulus discrimination?
	38	What two characteristics of generalization gradients are clearly revealed by the data?
	39	Which aspect of the data most clearly illustrates stimulus discrimination?
	40	What two characteristics of generalization gradients are clearly revealed by the data?
	41	Which aspect of the data most clearly illustrates stimulus discrimination?
	42	Which aspect of the data most clearly illustrates the effect of S+/S- discrimination learning on generalization?
8	43	What were your criteria for success in shaping Sniffy's begging behavior? How successful were you? In what ways did your performance demonstrate the procedure of shaping?
	44	What were your criteria for success in shaping Sniffy's face-wiping behavior? How successful were you? In what ways did your performance demonstrate the procedure of shaping?
	45	What were your criteria for success in shaping Sniffy's rolling-over behavior? How successful were you? In what ways did your performance demonstrate the procedure of shaping?
	46	What behavior did you shape? How successful were you? In what ways did your performance demonstrate the procedure of shaping?
	47	What behavior did you shape? How successful were you? In what ways did your performance demonstrate the procedure of shaping?

The Examinations. There will be a Mid-semester Examination and a Final Examination. Each will consist of two essay items. There will be a 400-word limit to the response to each item. You are welcome to develop your responses on your own or in partnership with one other member of the class, if you choose. Feel free to use your textbooks and notes in developing your responses. University policy prohibits administering the Final Examination prior to the scheduled date and time. Please do not ask to take it early. You will be able to make up the Mid-semester Examination only if you notify me in advance of your absence. A list of candidate items will be posted in advance of the Final Examination.

The Course Calendar.

Date of Meeting	Agenda	Reading and Other Assignments Due
M, 31 August	Introduction and Orientation to the Course	
W, 2 September	Syllabus review; Team formation	Course Syllabus
F, 4 September	Q/A	Chapter 1 in Powell et al., Chapter 1 in Alloway et al.
M, 7 September	No class meeting	
W, 9 September	Q/A	Chapter 2 in Powell et al., Chapter 2 in Alloway et al.
F, 11 September	Demonstration of Sniffy software by Jonathan Rogers; discussion of Bem article led by Dr. Miller	Bem article, pp. 185-204
M, 14 September	Discussion of Bem article led by Jonathan Rogers	Bem article, pp. 205-219
W, 16 September	Readiness Assessment 1	Chapters 1-2 in Powell et al., Chapters 1-2 in Alloway et al.
F, 18 September	Presentation 1	Sniffy Set 1; Complete 1 exercise in Sniffy Set 1; E-mail Title Page and Introduction of Research Manuscript 1 to Jonathan Rogers by midnight
M, 21 September	Q/A	Chapter 3 in Powell et al., Chapter 3 in Alloway et al.
W, 23 September	Consultation with Peer Reviewers (by mutual arrangement); no class meeting	Title page and Introduction of Research Manuscript 1
F, 25 September	Q/A	Chapter 4 in Powell et al., Chapters 4-5 in Alloway et al.; E-mail Method Section of Research Manuscript 1 to Jonathan Rogers by midnight
M, 28 September	Presentation 2	Sniffy Set 2; Complete 1 exercise in Sniffy Set 2; submit Research Report 1 (Sniffy Set 1 or 2) at beginning of class meeting
W, 30 September	Consultation with Peer Reviewers (by mutual arrangement); no class meeting	Method section of Research Manuscript 1
F, 2 October	Application Activity 1	Chapters 3-4 in Powell et al., Chapters 3-5 in Alloway et al.
M, 5 October	Q/A	Chapter 5 in Powell et al., Chapters 6 and 8 in Alloway et al.
W, 7 October	Presentation 3	Sniffy Set 3; Complete 1 exercise in Sniffy Set 3
F, 9 October	Readiness Assessment 2	Chapter 5 in Powell et al., Chapters 6 and 8 in Alloway et al.; E-mail Results and Discussion sections, References, Table(s), Figure Caption(s), Figure(s),

		and Abstract of Research Manuscript 1 to Jonathan Rogers by midnight
M 12 October	Q/A	Roberts article, pp. 227-228, 248-253
W, 14 October	Consultation with Peer Reviewers (by mutual arrangement); no class meeting	Results and Discussion sections, References, Table(s), Figure caption(s), Figure(s), and Abstract of Research Manuscript 1
F, 16 October	Q/A	Roberts article, pp. 254-261; Mid-semester Exam posted
M, 19 October	Application Activity 2	Roberts article; E-mail Draft of Research Manuscript 1 to Jonathan Rogers by midnight
W, 21 October	Q/A ; Discuss and propose Final Grade Weightings	Chapter 6 in Powell et al., Chapters 9-10 in Alloway et al.
F, 23 October	Presentation 4	Sniffy Set 4; Mid-semester Exam and Final Grade Weightings Proposals due at beginning of class meeting ; Research Report 2(Sniffy Set 3 or 4) due at beginning of class meeting
M, 26 October	Readiness Assessment 3	Chapter 6 in Powell et al., Chapters 9-10 in Alloway et al.; Draft of Research Manuscript 1 returned
W, 28 October	Q/A	Chapter 7 in Powell et al., Chapter 12 in Alloway et al.
F, 30 October	Presentation 5	Sniffy Set 5; Complete 1 exercise in Sniffy Set 5
M, 2 November	Q/A	Chapter 8 in Powell et al., Chapter 11 in Alloway et al. E-mail Final Draft of Research Manuscript 1 to Dr. Miller by midnight
W, 4 November	Application Activity 3	Chapters 7 and 8 in Powell et al., Chapters 11 and 12 in Alloway et al.
F, 6 November	Presentation 6; Q/A	Sniffy Set 6; Chapter 9 in Powell et al., Chapter 13 in Alloway et al.; Research Report 36 (Sniffy Set 5 or 6) due at beginning of class meeting
M, 9 November	Q/A	Chapter 10 in Powell et al.
W, 11 November	Readiness Assessment 4	Chapters 9 and 10 in Powell et al., Chapter 13 in Alloway et al. Final Draft of Research Manuscript 1 returned
F, 13 November	Presentation 7	Sniffy Set 7; Complete 1 exercise in Sniffy Set 7
M, 16 November	Q/A	Chapter 11 in Powell et al.; E-mail Title Page, Introduction, and Method Section of Research Manuscript 2 to Jonathan Rogers by midnight
W, 18 November	Presentation 8	Sniffy Set 8; Research Report 4 (Sniffy Set 7 or 8) due at beginning of class meeting
F, 20 November	Consultation with Peer Reviewers (by mutual arrangement); no class meeting	Title Page, Introduction, and Method Section of Research Manuscript 2
M, 23 November	No class meeting	
Tu, 24 November	No class meeting	
M, 30 November	Q/A	Chapter 12 in Powell; E-mail Results and Discussion Sections, References, Table(s), Figure Caption(s), Figure(s),

		and Abstract to Jonathan Rogers by Midnight
W, 2 December	Discussion led by Dr. Miller	Rachlin article, pp. 245-254
F, 4 December	Consultation with Peer Reviewers (by mutual arrangement); no class meeting	Results and Discussion Sections, References, Table(s), Figure Caption(s), Figure(s), and Abstract of Research Manuscript 2
M, 7 December	Discussion led by Dr. Miller; revisit Final Grade Weightings	Rachlin article, pp. 254-264; E-mail Draft of Research Manuscript 2 to Jonathan Rogers by midnight
W, 9 December	Application Activity 4	Chapters 11 and 12 in Powell et al., Rachlin article; Candidate Items for Final Exam posted on Blackboard; Final Grade Weighting Proposals due at beginning of class meeting
Sa, 12 December		Draft of Research Manuscript 2 returned
W, 16 December	Final Examination, 2:30-5:30 p.m.	Final Draft of Research Manuscript 2 due at beginning of exam

Peer Evaluations. At the end of the semester, you will receive a quantity of points (based on the number of Team members) to assign to other Team members on the basis of their performance during the semester. The only stipulation is that the same number of points cannot be assigned to each class member (that is, at least 1 score of 9 and one score of 11 must be assigned if a score of 10 is assigned to the other Team members, with no score exceeding 15 points) in order to reflect the relative strength of contribution. This will be your only formal opportunity to fairly (and honestly) recognize the work each Team member has done during the semester.

The Final Grade. Points toward the final grade will be awarded as follows:

Individual Readiness Assessments (4 @ 25 pts each)	100 points
Team Readiness Assessments (4 @ 25 pts each)	100
Application Activities (4 @ 25 pts each)	100
Exams (40 points for Mid-semester; 80 for Final)	120
Q/A Questions	40
In-class Sniffy Exercise Presentations	100
Sniffy Research Reports (4 @ 25 points each)	100
Sniffy Manuscripts (2 @ 75 pts)	150
Peer Evaluation	<u>100</u>
Total	910

Final grades will be assigned according to weightings that will be determined by the class. The categories to be assigned weights are:

- Individual Performance (Readiness Assessments, Exams, Sniffy Research Reports)
- Team Performance (Readiness Assessments, Application Activities, Q/A Questions, In-class Sniffy Exercise Presentations, and Research Manuscripts)
- Peer Evaluation

No weighting can be less than 20% nor more than 40%. The weightings for the three categories will add up to 100%. Final grades will be assigned according to the distribution of scores. It is assumed, but not guaranteed, that most final grades will be higher than C.

The Instructional Staff. I am a professor and associate chair in the Department of Psychology. My scholarly interests lie in the experimental analysis of behavior, behavioral economics, self-control and altruism, radical behaviorism, and education reform. My office is 1074 SWKT, phone number 422-8939, and e-mail address harold_miller@byu.edu. My consultation hours are Mondays and Thursdays from 12 to 12:50 p.m. (unless I am out of town) or otherwise by appointment. Jonathan Rogers is the Graduate Teaching Assistant. His e-mail address is rogersnccm@yahoo.com. His consultation hours and location will be posted at the Blackboard Web site for the course. Please don't be a stranger to consultation.

I welcome suggestions for improving the course.

Important Note. Enrollment in 300-level courses in the undergraduate psychology curriculum beyond Psychology 304 is contingent on prior completion of Psych 101; Psych 111; Psych 210; Psych 301; Psych 302; Engl 314, Engl 315, or Psych 303; and Psych 304. You may only enroll in this course if you have completed these prerequisite courses, are concurrently enrolled in Psychology 304, or have my consent to do so.

Department of Psychology Expected Student Learning Outcomes for Majors

The objectives of the department's undergraduate curriculum are closely matched to those advocated by the American Psychological Association, the discipline's primary professional body. Graduates with a B.S. degree in psychology will:

- (1) Be able to demonstrate that they understand and can apply basic research methods in psychology, including research design, data analysis, and interpretation of results in light of previous findings.
- (2) Be able to use computers and other research-related technology to competently collect, access, and manage information, communication, and other purposes.
- (3) Be able to express realistic ideas about how to implement their psychological understanding, skills, and values in occupational and family-related pursuits in a variety of settings.
- (4) Be able to critically reflect on the content of psychology as well as on disciplinary values in light of their knowledge of and commitment to the restored gospel of Jesus Christ and to sustain personal values that are true to the gospel while maintaining their serious study of psychology.

University Policies

Honor Code Standards

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact **be** your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university.

Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

Preventing Sexual Discrimination or Harassment

Sexual discrimination or harassment (including student-to-student harassment) is prohibited both by the law and by Brigham Young University policy. If you feel you are being subjected to sexual discrimination or harassment, please bring your concerns to the professor. Alternatively, you may lodge a complaint with the Equal Employment Office (D-240C ASB) or with the Honor Code Office (4440).

Students with Disabilities

If you have a disability that may affect your performance in this course, you should get in touch with the University Accessibility Center (2170 WSC) 801-422-2767. This office can evaluate your disability and assist the professor in arranging for reasonable accommodations.

H1N1 Flu Policy

As are all large communities, BYU is preparing for the potential of the H1N1 influenza virus to spread rapidly throughout the campus during the coming winter. Details of BYU's preparation, and advice on what you can do to prepare, can be found at flu.byu.edu. Please read it! In order to contain any possible infection, the administration has advised course instructors to ask any student who is feeling sick with flu-like symptoms (fever with either sore throat or cough) to remain home, away from class and away from all large gatherings. Sick students should remain at home until at least 24 hours after the fever has gone away. Students should also call their doctor or the student health center for advice as soon as possible.

The administration has asked course instructors to provide adequate make-up opportunities for all work missed during a flu-like illness. Accordingly, I will allow all time as needed to miss class during an illness and to make up work at a reasonable time afterward, provided the student provides a doctor's note to document the illness. ALL students who feel sick with fever and sore throat or cough should call the doctor and visit if so advised. If advised to visit the doctor, please obtain a note whether or not you are diagnosed with the flu! When you are ill please call or email your TA or the instructor as soon as possible, and *continue to communicate* with us until you are well. You should also be in contact as much as possible with one or two class members, in order to keep up on what you miss. We will try to facilitate class communication from the beginning of the semester.

For your protection, your instructors will follow the same rules! If your instructor is sick he or she will try to find a replacement to carry the class forward, else will notify students as soon as possible about a class cancellation.

A Final Word. Please do your best to work fairly and productively and, I hope, enjoyably with the others in the class. Don't hesitate to contact Jonathan Rogers or me at any point for clarification of course requirements, for help in understanding the assigned reading, for help with your Sniffy-related assignments, or for encouragement otherwise. Jonathan and I are committed to enlarging your understanding of the subject matter of the course and will be diligent to that end. Best wishes for success!

Hal Miller