

Analysis of Behavior: Basic Principles ([PSY1400](#)) and Lab ([PSY1410](#))

Spring 2017

COURSE DESCRIPTIONS

Analysis of Behavior is composed of two complementary courses, introducing the science of animal and human behavior. In the lecture-, reading-, and discussion-based component, we will survey basic principles of behavior as well as the methods used by behavioral scientists to uncover these principles. In the laboratory-based component, we will apply these principles to a computer-simulated rat.

Though the online format of this course preempts working with live animals, the simulation imparts a sense of how laboratory research is conducted. Moreover, the principles that govern the simulated rat resemble those that govern the behavior of live laboratory animals, family pets, neighbors, roommates, significant others, and ourselves.

Due to the universality of the principles of behavior, behavioral scientists are in demand in education, medicine, animal services, and business and industry. A bachelor's degree and a thorough understanding of the content in this course is sufficient for entry into some fields of psychology (e.g., autism treatment). Given advanced degrees in psychological science, USU students have recently been recruited by organizations ranging from the Center for Disease Control to a major league baseball franchise to Blizzard, a videogame developer.

These courses are partially self-paced. Throughout the semester, new course content will become available and deadlines will pass; however, all assignments and evaluations have windows for completion that should accommodate most schedules.

LEARNING OBJECTIVES

1400

1. Recognize landmarks in the history of behavior analysis, including people and events.
2. Report strengths and weaknesses of common methods for studying behavior.
3. Describe how to implement Pavlovian conditioning, including extinction.
4. Describe how to implement operant conditioning, including reinforcement, extinction, punishment, differential reinforcement, shaping, discrimination training, and training for generalization.
5. Connect course content to everyday life.

1410

1. Predict and control the behavior of *CyberRat the Virtual Rat*.
2. Communicate single-subject data with graphs.
3. Write a research report in [APA style](#).

Instructor – David M. Cole, M.S., BCBA

E-mail – dcole@observechange.org

Phone Number – (904) 345-0104

Office Hours – By request, on campus or distance

Teaching Assistant – Tida Black (tidae@hotmail.com)

1400 Textbook – Chance, P. (2013). *Learning and behavior* (7th ed.). Belmont, CA: Wadsworth.

Hardcover, loose-leaf, or electronic version

1410 Materials – CyberRat (Version 6.0) [software]. Winter Park, FL: (AI)², Inc. Retrieved from <http://ai2inc.com/Store/store.html>

Digital subscription

ASSIGNMENT TYPES

1400

Quizzes (24)

All quizzes are **proctored** (see box on p. 4). The first quiz is **open-book** and may be taken up to **3 times**, with the highest score retained; it regards this syllabus, which you may reference during the quiz. All other quizzes are, **closed-book** and may be taken only **once**; they draw from readings (textbook and non-textbook) and videos assigned prior to the quiz becoming available.

Because life happens, your three lowest quiz scores will be dropped; however, individual accommodations for technical errors, etc. will not be granted (see *Late and Incomplete Assignments*).

What to expect:

- You have **15 minutes** to answer **10 multiple-choice** questions.
- Because the course content builds systematically, questions are **cumulative**; however, questions do emphasize the most recent course content.
- Some questions come close to rephrasing course content—pay attention to **“Queries” in the textbook**. Other questions test a more **conceptual understanding** of the content (e.g., by presenting you with a novel scenario).
- For some questions, **multiple answers** may be correct. When multiple answers are possible, you will see checkboxes (☐) next to the options instead of radio buttons (○). When you see checkboxes, anywhere from one to all options may be correct.
- **Partial credit** is automatically calculated by Canvas. For example, if two options are correct, Canvas awards 1/2 point for each correct selection and deducts 1/2 points for each incorrect selection (without going negative). So, if you select one correct option and one incorrect option, Canvas awards 0 points.
- If you have a reasoned case for why an answer was graded unfairly, **attach a comment to the quiz**, and I will manually review your response.

Grading Scale

A	100–93%
A-	92–90%
B+	89–87%
B	86–83%
B-	82–80%
C+	79–77%
C	76–73%
C-	72–70%
D+	69–67%
D	66–60%
F	59–0%

1400 Grading Rubric

Assignment Type	Frequency	Points per Assignment	Points Subtotal	Percentage Subtotal
Quizzes	24	10	210	39
Discussions	6	10	60	11
Exams	4	50; 50; 50; 100	250	46
Relevance Demo	1	20	20	4
Extra Credit	5	5	25	5
Total (excl. extra credit):			540	100

Discussions (6)

A **non-textbook reading** is assigned for each discussion. After completing the reading, start or contribute to a discussion in a way that (a) specifically and meaningfully references the **assigned reading** and (b) specifically and meaningfully references the **textbook or video lectures**.

Tips:

- Avoid beginning **new threads** on topics already under discussion.
- Avoid writing essays: This is a **dialogue** not a monologue.
- On the other hand, simply adding **“I agree”** to a thread will not earn many points.
- While you must satisfy both requirements above, you need not do both in a single post; **multiple posts** are welcome.
- **Citing page numbers** from readings will underscore your satisfaction of the assignment requirements.
- Other types of contributions (e.g., sharing **personal experiences**) can bolster discussion but are ungraded.

Exams (4)

Four units in this course address four thematically related set of chapters. The first three units are followed by unit exams (50 points). The fourth unit is followed by a final exam (100 points). The final exam differs from the unit exams in that it is worth more points and includes a higher percentage of questions from prior units.

All exams must be **proctored** (see box below) and are **closed-book**.

What to expect:

- You have **120 minutes** to answer **40 to 50 multiple-choice and fill-in-the-blank** questions.
- Fill-in-the-blank answers must be **spelled correctly**. Not only is accurate spelling important for clear communication, it also is required by the automated grading software. That said, if you lose points due to a typo or you have another reason for why an answer was graded unfairly, **attach a comment to the quiz**, and I will manually review your response.
- For additional guidance, see bullet points provided for quizzes and post questions on the Questions discussion board.

Relevance Demonstration (1)

The immediate relevance of a course to our lives is not always obvious. Teaching *Analysis of Behavior* is enjoyable, in part, because this course rarely evokes such criticism. Instead, students consistently impress with how they have applied course content throughout the semester to their “real” lives. This is the vein of this assignment.

Most students submit a 1-page, single-spaced essay in which they describe what they liked (or did not like)

Proctoring Options

Virtual Proctoring

Requirements: [Chrome-based browser](#), [Proctorio Chrome extension](#), webcam, microphone

Cost: Free

Directions: Click on an open exam and follow the onscreen prompts ([FAQ](#))

Live Proctoring

Requirements: USU-certified proctor

Cost: Varies

Directions: As soon as possible, [find a proctor](#). To mitigate costs, consider completing multiple quizzes per proctoring session (or using virtual proctoring).

about the course. Or they recount their successful (and unsuccessful) attempts to change a bad habit of a pet, a significant other, or themselves, using behavioral principles. Some students instead submit a [creative work](#).

All submissions must address the broad topic of how PSY1400/PSY1410 was (or was not) personally relevant to you; however, the specific topic and the format of the submission is **open-ended**. Projects are graded primarily on **thoughtfulness**.

Tips for Success + Extra Credit (5)

Most students find this course to be challenging, and many students request guidance on how to succeed.

First, ensure you are **dedicating adequate time** to this course. For a 3-credit course, the general expectation is that students spend 3 hours per week in-class and 9 hours per week studying. You may not need to devote this much time to obtain the grade your desire; however, if you find yourself struggling, compare your time to this 12-hour total.

Second, ensure you are **spending your time wisely**:

- **Videos** are hosted by Panopto. With Panopto, you can adjust speed of playback from the playback bar and turn on captioning from the link on left bar.
- Regarding new **terminology** (formatted in bold in the textbook), start memorizing it when you study for quizzes: Although multiple-choice quiz questions do not require free-recall, fill-in-the-blank exam questions will! If you can only answer quiz questions correctly by looking at the response options, you are inadequately preparing for the exams.
- You will encounter few questions like, “Which of the following is a theory of Pavlovian conditioning?” Instead, you will encounter many questions like, “Which theory of Pavlovian conditioning has had the biggest impact on modern psychology?” So, while you must recall terms for fill-in-the-blank questions, you should spend more time on **understanding how these terms relate** than memorizing definitions in isolation.

Four **extra-credit assignments** (one per unit) are designed to illustrate how you should study for quizzes and exams. They will ask you to explain how two or more related terms compare, as if your audience was someone who has not taken PSY 1400 (see the [Feynman Technique](#)).

The fifth extra-credit assignment will be completion of the **End of Semester IDEA Course Survey**. You will receive an e-mail invitation to take the survey towards the end of November. Because course surveys are anonymous and instructors only have access to completion percentage initially, all students will receive 5 points if at least **75% of your class** completes the survey and no students will receive points if less than 75% does so.

Lastly, you may complete studies through [SONA](#) for extra credit. For every 0.25 SONA points, you will receive 1 extra credit point. Note that these extra-credit points will only be updated in Canvas twice, during midterms and finals.

1410

Assignment 0: Register *CyberRat*

This assignment is ungraded; however, the software must be registered to complete subsequent assignments. Consider doing so before laboratory assignments become available in February.



Assignment 1: Skeleton Draft

The format of a research report is highly structured. Its structure (a) encourages complete reporting of important information and (b) allows rapid digestion of this information by scientific audiences. As the writer, think of APA Style as providing step-by-step instructions on what to write and where.

For this assignment, create a blank research report, complete with a title page, page headers, and section titles. More instructions will follow.

Assignment 2: Sample Figure

Like the structure of a research report, figures (e.g., graphs) should be designed for efficient communication. Though graphing practices vary from field to field, the practices we follow for this course are widely adopted by behavior analysts and are consistent with broader principles of effective communication.

For this assignment, create a two-phase line graph populated with sample data. It can serve as a template for subsequent graphs that you create. More instructions will follow.

Assignment 3: Phase I and II Methods, Results, and Figures

Most operant experiments with laboratory rats involve lever-pressing for food pellets. Before these experiments can proceed, the rats must learn to retrieve pellets from the food receptacle and to press the lever(s).

For this assignment, train *CyberRat* to do just that. Describe your training methods and then report on *CyberRat*'s response to your procedures narratively and graphically. More instructions will follow.

1410 Grading Rubric

Assignment	Points per Assignment	Points Subtotal	Percentage Subtotal
1-5	4	20	20
6	80	80	80
Total:		100	100

Assignment 4: Phase III and IV Methods, Results, and Figures

Early in the history of behavior analysis, researchers either delivered pellets every time a rat pressed a lever (FR-1) or never delivered pellets when a rat pressed a lever (extinction). There was no in-between.

Sequentially demonstrate the effects of FR-1 and EXT schedules on CyberRat's lever-pressing. Detail your activities and CyberRat's response by adding to your lab report. More instructions will follow.

Assignment 5: Phase V and VI Methods, Results, and Figures

Essentially by accident, B. F. Skinner discovered that if he intermittently delivered pellets when a rat pressed a lever, curious patterns in lever-pressing emerged.

Systematically explore the effects of intermittent schedules followed by a final EXT condition. Communicate your and CyberRat's actions in your lab report. More instructions will follow.

Assignment 6: Revised and Completed Research Report

You will receive feedback on prior assignments as they are graded—even if you receive full credit, check for constructive feedback. Your grade in this course is based primarily on your **implementation of feedback**. More instructions will follow.

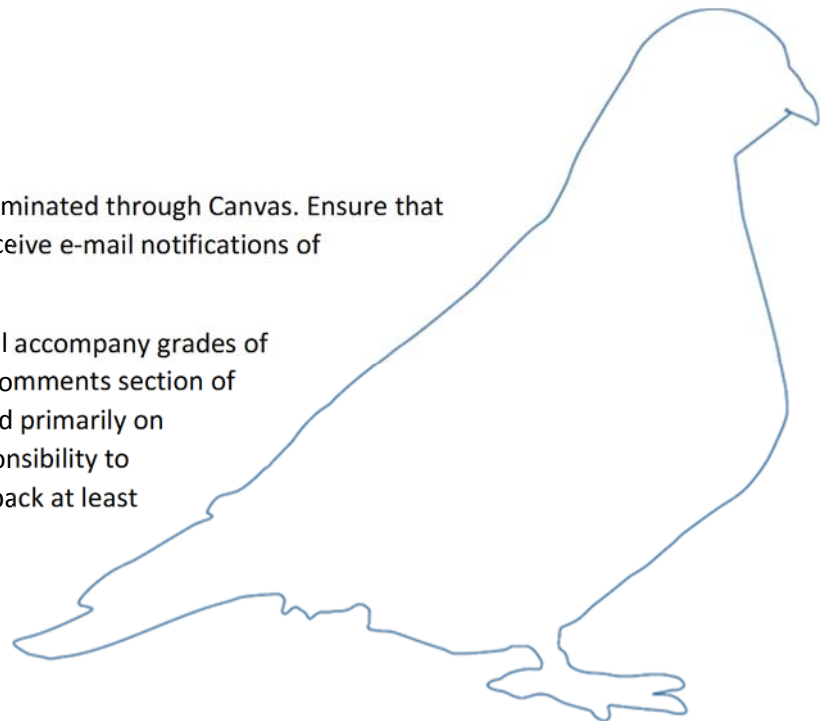
COURSE POLICIES

Communication

Important **course announcements** are disseminated through Canvas. Ensure that you have set your [Canvas preferences](#) to receive e-mail notifications of announcements.

Individualized feedback for assignments will accompany grades of less than 100%. This feedback is left in the comments section of the assignment. Your grade for 1410 is based primarily on implementation of feedback. It is your responsibility to request assistance with implementing feedback at least **48 hours** prior to deadlines.

Thoughtful **student feedback** is always welcome. You may e-mail me directly or through Canvas with your feedback or to arrange a teleconference or videoconference.



Late and Incomplete Assignments

Assignments are due before **midnight (mountain time)** on their specified due dates. After midnight, quizzes, exams, and extra credit are docked **100%** and all other assignments are docked **20%** with an additional 20% deduction for every additional 24 hours tardy. Requests for exceptions will not receive responses unless they are accompanied by documentation (e.g., physician's note regarding acute illness). Requests for exceptions due to technical problems will not receive responses as (a) three quizzes are automatically dropped and (b) nearly all errors are reported by students attempting to submit assignments within a few hours of the deadline. Please avoid procrastinating. (Did you know that you can [set Canvas notifications for upcoming deadlines?](#))

Accommodations

All accommodation requests must be communicated directly from the [Disability Resource Center](#). Course requirements are otherwise non-negotiable.

Academic Honesty

All submissions are analyzed with anti-**plagiarism** software. If you are **retaking** these courses, you may not reuse previously submitted assignments without advanced permission. If you know someone else taking these courses, you may not **collaborate** on assignments. All suspected violations of the [student code](#) will be reported to Utah State University and will result in a failing grade on the affected assignment and possibly the course.

Intellectual Property

All course content is copyrighted; however, of particular note here are the **videos, quiz questions, and exam questions**. If you have grading concerns, reference questions either by number or in your own words; do not paste questions onto discussion boards or into e-mail messages. The university has and will continue to support the protection of this intellectual property. Should you disseminate these materials in any form, the university will pursue their removal, and your standing as a student of Utah State University will be at risk. **You are working for your grade—allow others to work for theirs.**

Course Attribution

I am a doctoral student in the [neuroscience laboratory of Mona Buhusi](#) at Utah State University. With humans and animal models, I study memory, time, and data visualization. My current research concerns [optogenetics](#), [temporal discounting](#), and [performance management](#). Prior to joining Dr. Buhusi's laboratory, I directed a center for children with developmental disabilities, including autism.

Parts of this course use content created by [Gregory Madden](#), particularly the video lectures.