Instructor
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Office hours: 10:00-11:30 Tuesdays or by appointment

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Goals and organization

This class covers research and theory in the field of Learning. The main goal is to help you reach a deeper understanding of the theories and principles of learning and behavior so that you can use them in your lives and in your future professional activities. For example, the material covered in this course is used by professionals working in clinical psychology and in behavioral neuroscience. A second goal is to appreciate how knowledge has accumulated in the field. For example, we will see how good theoretical ideas are carefully based on evidence, how they guide experimental research, and how the new evidence created by that research generates a new and even better understanding. I am active in the field and am interested in discussing its connections with other parts of psychology.

The course tells a kind of story that will build through the semester. We will start with some basic facts about Pavlovian learning and operant conditioning: what they are, why psychologists study them, and why they are so indispensable to living organisms. We will then build on this foundation by discussing several theories of Pavlovian learning (which is viewed as both a method for studying learning in general as well as a powerful behavioral phenomenon). We will wonder how generally applicable the theories really are and how they help us understand the world outside the lab. We will then tackle operant learning (which is viewed as a method for understanding voluntary action and behavior) and ultimately consider the basic cognitive and motivational processes behind it. At the end of the course, we will put it all back together in a kind of synthesis that will hopefully help you integrate and remember the material.

The textbook and lectures will provide the base of the course. However, more than just a content area, the field of Learning provides psychologists with a set of tools they can use to help understand many issues and problems outside the laboratory. Some class discussions are therefore scheduled to give us an opportunity to talk about how to use the tools—to work through and apply our knowledge. The final class meetings will then be devoted to the presentation and discussion of articles from the primary literature. It is important that you do the required reading before each class and that you prepare yourself to participate actively.
Readings

Text


Supplemental Readings (for student presentations in April-May, to be made available on Blackboard)


Class meetings

Unit I: Core ideas and concepts

1/19 Introductions and a short history of the field. Chap 1 (all).
1/21 Some basics and the function of instrumental and Pavlovian learning. Chap 2 (all); Chap 3: pp. 73-93.
1/26 Surprise, information value, and conditioning. Chap 3: pp. 93-100
1/28 Discussion

Unit II: Models of conditioning and associative learning

2/2 The Rescorla-Wagner model: the role of surprise and prediction error. Chap 4: pp. 103-116; Problem Set 1 due
2/16 Discussion

Unit III: Application and generalizability

2/23 Conditioning processes in drug dependence and anxiety disorders
3/1 Flavor aversion learning: Are the laws of learning general? Chap 6 (all)
3/3 NO CLASS
3/7 – 3/11 SPRING BREAK!!
3/15 NO CLASS

Unit IV: Action, choice, and cognition

3/17 Classic ideas about instrumental/operant learning. Chap 7: pp. 223-239; Problem Set 3 due
3/22 Choice and theories of reinforcement. Chap 7: pp. 239-264
3/31 Discussion

Unit V: Putting it all together

4/5 How motivational states affect instrumental action. Chap 9: pp. 329-342; Problem Set 4 due
4/7 Acquired motivation. Chap 9: pp. 342-369
4/19 A synthetic view of learning and behavior. Chap 10: pp. 400-419
4/21 Student presentations; Problem Set 5 due.
4/26 Student presentations
4/28 Student presentations
5/3 Student presentations
Student responsibilities and requirements

1. **Attendance** at all class meetings is **required**.

2. **Problem Sets.** There will be five problem sets covering material assigned and discussed in each of the course units. The problem sets will be distributed at the start of each unit and will mainly include short answer (very short essay) questions. You will need to work through these and turn each problem set in at the **beginning** of the first class meeting of the next unit. You are free to use the textbook and your notes from lectures and discussion—the problem sets are designed to be “open book.” However, **you are expected to do this work on your own.** The first four problem sets will each be worth 10% of your final grade. Problem Set 5 will include some extra questions that ask you to integrate material over the whole semester and will be worth 20% of your grade. Thus, the problem sets will provide a total of 60% of your grade for the course.

3. **Class Discussions.** I will distribute three or four discussion questions at least a week before each scheduled Discussion. You are expected to think about each question ahead of class and write informal but **typewritten** notes on ideas you will add to the discussion. **Your typewritten notes will be collected at the end of each discussion.** Please take these assignments seriously, because your participation in class will be important for the success of the class.

4. **Presentation and paper.** You will also present, and write a short (5-page) paper on, one of the supplementary readings listed above. The presentation and the paper should (a.) summarize the article and (b.) relate it to material we have covered in class. You will need to create a Powerpoint presentation and e-mail to me at least 24 hours before your scheduled presentation. The paper will be due at the end of the class meeting in which you make your presentation. The presentation and paper will count toward 20% of the course grade. I will distribute tips and guidelines for creating good presentations and papers well before class presentations begin.

   *Please note:* All students are expected to read the papers being presented on a given presentation day and be ready to discuss them after each presentation. You will be required to write a **typewritten** question on each of the papers to be turned in at the end of the class. These questions can seek clarification of something in the paper or introduce an idea or a reaction for class discussion.

5. **Class participation** will count toward 20% of your grade. Although a lot of active participation will take place during the designated class discussions and student presentations, student questions and interaction are always welcome during lectures and can help everyone understand the material. Again, it is important to do the assigned reading before each class so that you can contribute. **Please take this responsibility seriously and help make this an excellent class.**

**Grading summary**

- Problem Sets 1-4 at 10% each = 40% of course grade.
- Problem Set 5 = 20%
- Presentation and 4 page paper on a supplemental reading = 20%
- Class participation = 20%
Course policies

- Late assignments will not be accepted without prior approval.
- Please be respectful of others.
- Use of cell phones and laptops is prohibited in class.
- Consistent with the University’s policy on intellectual property rights, it is the Psychological Science Department's policy that teaching and curricular materials (including but not limited to classroom lectures, syllabi, class notes, exams, handouts, and presentations) are the property of the instructor. Therefore, electronic recording and/or transmission of teaching and curricular materials is prohibited without the express written permission of the instructor.

Please remember: This is a 200-level course, the most advanced level available to undergraduates at UVM. I hope you will find it enjoyable and rewarding. But what you get out of the course will depend on what you put into it. As I said above, please take your responsibilities seriously and help make this an excellent class.