Measurement and Experimental Design in Applied Behavior Analysis

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Office Hours: TBA

Prerequisites: APCE 628 Concepts and Principals of Behavior Analysis

REQUATED TEXTS:

Cooper, J.O., Heron, T.E., & Heward, W.L. (2007). Applied Behavior Analysis (2nd ed.). Upper Saddle River, NJ: Prentice Hall. (Note: This text is the same one used in APCE 628)


Required Readings:


COURSE DESCRIPTION:
This course covers assessment of behavior, including all dimensions of behavior and structured observation. Single-case research methods, including reversal, multiple baseline, changing criterion, alternating treatment, and multielement designs are covered. The course is based upon the BACB® Fourth Edition Task List.

OBJECTIVES:
At the completion of the course, students should be able to:

1. Select, measure and interpret data using measureable dimensions of behavior (i.e., rate, duration, latency, interresponse time, percent of occurrence, trials to criterion).
2. Design and implement continuous measurement (e.g., event recording), discontinuous measurement (e.g., partial and whole interval, momentary time sampling), and choice measurement procedures.
3. Assess and interpret interobserver agreement, and evaluate the accuracy and reliability of measurement procedures.
4. Design, plot and interpret data using various types of graphs and single-case research designs.
5. Review and interpret articles from the behavior analytic literature.
COURSE REQUIREMENTS:

1. Students will conduct a behavioral assessment of a child, using behavior assessment schedules discussed in class. Results of the assessment will be written up in a short report that will include the following sections: Reason for Referral, Background Information, Behaviors Observed, Description of Context, Summary of Observation, and Recommendations (50 points)

2. Unit quizzes will be given on Blackboard. Exams will cover material from each unit over the 8-week course (20 points each)

3. A comprehensive final exam will be given. The format of the exam will be multiple choice, and will cover all content from the course and related BCBA task list material. (100 points)

4. Students will participate in 45 classroom hours of graduate level instruction in the area of **measurement and experimental design in Applied Behavior Analysis**. This graduate level instruction will include interactive modules, video lectures, and online instructor-led collaborative Blackboard discussion sessions. (80 points)

5. Students will complete a graph building exercise using Excel. Instructions will be available on Blackboard, along with a mock data set. Students will be required to construct and electronically submit a graph of the data. (20 points)

6. Students will write a critique of a single-case research article. Critiques will be completed using a standard worksheet, and will include an evaluation of the study’s hypotheses, degree to which the methodology answers the stated research questions, design chosen, implementation of the design, analysis of the data, and conclusions drawn (50 points)

7. Students will be required to design a single-case study applicable to an educational setting, including providing relevant literature review and proposing an appropriate methodology for studying the problem. Students will pair up to complete this assignment, which will include a presentation of the proposed project. (100 points)

EVALUATION OF STUDENT PROGRESS:

Grades will be based on the following:

- Design of Single-Case Study 100 points
- Final Exam 100 points
- Behavioral Assessment 50 points
- Research Article Critique 50 points
- Classroom Instruction 50 points
- Quiz #1-#7 (20 points each) 140 points
- Graph building exercise 20 points
TOTAL: 510 points

A  = 93% to 100% of total points (474.3-510)
A- = 90% to 92% of total points (459-474.2)
B+ = 87% to 89% of total points (443.7-458.9)
B  = 83% to 86% of total points (423.3-443.6)
B- = 80% to 82% of total points (408-423.2)
C+ = 77% to 79% of total points (392.7-407.9)
C  = 73% to 76% of total points (372.3-392.6)

(Note: Grades below C will be given if earned)

**Academic Conduct:** Cheating on examinations, submitting work of other students as your own, or plagiarism in any form will result in penalties ranging from an “F” on an assignment to expulsion from the University.

**Professional Conduct:** Students are expected to adhere to appropriate code of ethics for their particular program. Any behavior that is deemed unethical will be grounds for dismissal from the program.

**Inclusivity Statement:** The College of Education and Behavioral Sciences (CEBS) supports an inclusive learning environment where diversity and individual differences are understood, respected, appreciated, and recognized as a source of strength. We expect that students, faculty, administrators and staff within CEBS will respect differences and demonstrate diligence in understanding how other peoples’ perspectives, behaviors, and worldviews may be different from their own.

**Accommodations Statement:** Students who believe that they may need accommodations in this class are encouraged to contact the Disability Support Services, Voice/TTY (970) 351-2289, or fax (970) 351-4166, or visit www.unco.edu/dss as soon as possible to ensure that accommodations are implemented in a timely fashion.

**Plagiarism Policy:** Plagiarism is the act of appropriating the written, artistic, or musical composition of another, or portions thereof; or the ideas, language, or symbols of same and passing them off as the product of one’s own mind. Plagiarism includes not only the exact duplication of another’s work but also the lifting of a substantial or essential portion thereof (This is the UNC definition). With regard to written work, statements that paraphrase or summarize the work of another, along with other information that is not considered common knowledge, must be properly cited in the text of a document, and the source include in the reference list at the end. If a direct quotation, the citation in the text must include the exact page
numbers from the original source. The original source must also be listed at the end of work. Quotation marks or a proper form of indentation shall be used to indicate all direct quotes. All referencing is done, of course, according to APA style. Regarding class projects, you are not to use as the bulk of your presentation the completed works of faculty members, imported documents from other authors, or works from websites, or any other body of work in which you are not the author. Of course, with proper referencing, you can import portions of such works and websites to enhance and illustrate your presentation, and you can provide references to these other works for students who have interest in pursuing topic further. Students who have engaged in the act of plagiarism will be given an “F” in that course. The matter will then be taken up by the School’s Review and Retention Committee. The decision of the Committee with regard to plagiarism includes the possibility that the student be dismissed from his or her respective program and from UNC.

**Sexual Misconduct/Title IX Statement:** The University of Northern Colorado prohibits and will not tolerate sexual misconduct or gender-based discrimination of any kind. UNC is legally obligated to investigate sexual misconduct (including, but not limited to sexual assault, sexual harassment, stalking, and intimate partner violence). If you disclose an incident of sexual misconduct to a faculty member, they have an obligation to report it to UNC’s Title IX Coordinator. “Disclosure” may include communication in-person, via email/phone/text message, or through in/out of class assignments.
If you wish to speak confidentially about an incident of sexual misconduct, please contact the UNC Counseling Center (970-351-2496) or the Assault Survivors Advocacy Program (970-351-4040).
If you would like to learn more about sexual misconduct or report an incident, please visit www.unco.edu/sexualmisconduct.
## COURSE CALENDAR

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<th>Unit</th>
<th>Topic</th>
<th>Readings</th>
<th>Assignments Due</th>
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<td>Unit 1</td>
<td>Measuring Behavior</td>
<td>Cooper et al. Ch. 4&lt;br&gt;Kazdin Ch. 1-3&lt;br&gt;Gardenier et al.&lt;br&gt;Sanson-Fisher et al.</td>
<td>• Unit 1 quiz</td>
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<td>Unit 2</td>
<td>Assessing &amp; Improving the Quality of Behavioral Measurement</td>
<td>Cooper et al. Ch. 5&lt;br&gt;Kazdin Ch. 4-5&lt;br&gt;Hoge</td>
<td>• Unit 2 quiz</td>
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<td>Unit 3</td>
<td>Constructing &amp; Interpreting Graphic Displays of Behavioral Data</td>
<td>Cooper et al. Ch. 6&lt;br&gt;Kazdin Ch. 12-13</td>
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<td>Unit 4</td>
<td>Analyzing Behavior Change: Basic Assumptions and Strategies</td>
<td>Cooper et al. Ch. 7&lt;br&gt;Kazdin Ch. 6 (1&lt;sup&gt;st&lt;/sup&gt; part)&lt;br&gt;Kratochwill et al.</td>
<td>• Unit 3 &amp; 4 quiz&lt;br&gt;Behavioral assessment report due</td>
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<td>Unit 5</td>
<td>Analytic Tactics Using Withdrawal, Reversal, and Alternating Treatment Conditions</td>
<td>Cooper et al. Ch. 8&lt;br&gt;Kazdin Ch. 6 (2&lt;sup&gt;nd&lt;/sup&gt; part), 9</td>
<td>• Unit 5 quiz&lt;br&gt;Graph-building exercise due</td>
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<td>Unit 6</td>
<td>Analytic Tactics Using Multiple Baseline and Changing Criteria</td>
<td>Cooper et al. Ch. 9&lt;br&gt;Kazdin, Ch. 7, 8, 10</td>
<td>• Unit 6 quiz</td>
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<td>Unit 7</td>
<td>Planning, Conducting, and Evaluating Research in Applied Behavior Analysis</td>
<td>Cooper Ch. 10&lt;br&gt;Kazdin Ch. 14, 15&lt;br&gt;Anglesea et al.&lt;br&gt;Borkovec et al.&lt;br&gt;Horner et al.&lt;br&gt;Kazdin (1977)&lt;br&gt;Kratochwill &amp; Levin</td>
<td>• Unit 7 quiz&lt;br&gt;Article critique due</td>
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<td>• Final Exam&lt;br&gt;• Presentation of single-case projects</td>
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