

Introduction to Analysis and Single-case Design

Graduate School of Applied and Professional Psychology (GSAPP)
Rutgers University, New Brunswick
18:820:512:01, Fall 2024

- Instructor:** Robert W. Isenhower, Ph.D., BCBA-D (he/him)
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Office Phone: (848) 932-4500
- Time/Place:** Tuesday 3:35-6:05 PM: Nelson Classroom [NH-D340](#)
- Office/Hours:** Office: DDDC, 151 Ryders Lane, New Brunswick, NJ 08901
Hours: Dedicated office hours: 1:00-3:00 PM on Tuesdays and by appointment. The instructor will make every reasonable effort to meet with students whenever necessary. Meetings maybe held over Zoom or in-person. Please email me to schedule.
- Purpose:** This course introduces you to the process of analysis using baseline logic and learning how it applies to single-case methodology. Provides an overview of behavior measurement and recording, visual analysis, and graphing. Basic single-case research designs will be discussed, including general characteristics, strengths, and considerations. General issues regarding internal and external validity will be explored, as well as ethical considerations in research design and implementation. Students will practice applying the principles of research design and ethics to the interpretation of research literature.
- Outcomes:** At the end of this course, you will be able to:
1. State the principles of baseline logic.
 2. Describe the process of planning and directing behavior recording procedures.
 3. Identify key features of visual data display and analysis.
 4. Identify and describe advantages and disadvantages of basic single-case designs.
 5. Discuss issues in planning, replicating, evaluating, and disseminating ABA research.
 6. Describe ethical principles as they related to ABA research.
 7. Interpret research articles from the behavior analytic literature.
- Text/Readings:** Kazdin, A. E. (2021). *Single-case research designs: Methods for clinical and applied settings (3rd edition)*. Oxford University Press.

[Behavior Analyst Certification Board, Inc. \(2016\) 5th edition task list](#)

Other readings are available on Canvas (See reading list at end of syllabus). These readings will facilitate discussion and allow further exploration of the topic.

Assessments:

Exams

There are two exams in this course, one in Week 7 and another during Week 15. Exams will mainly be composed of **multiple-choice** (to simulate the BACB exam) and **short answer** questions. Test material will be based on the assigned readings and the lectures. Any make-up exams must be scheduled in advance of the exam date and may follow a different format.

Objective Questions

Objective questions about the readings are posted on Canvas. Answer these questions and prepare to discuss them at the beginning of and/or during class. Questions are to be worked on individually. These questions are to facilitate class discussion and are considered homework. They are therefore due **prior to** the beginning of class.

In-Class Activities

Most weeks we will engage in an in-class activity to help bring some of the course concepts to life. You **must be present** to earn credit for each in-class activity.

Research Proposal

Each student will be required to complete a 4–6-page paper (double-spaced) outlining a hypothetical behavior analytic study. Because this is a proposal, you will use future tense in your writing.

Components of the paper:

1. Introduction
 1. Purpose/Background: Provide a brief description of the purpose of the proposal.
 2. State your research question.
 3. Be sure to describe the relevant literature on your target behavior and independent variable.
2. Method
 1. Participants, Setting, and Materials: Where you will run the student and with whom? What will you need to complete the study?
 2. Measurement: What is your operational definition? How will you score it? How will you measure interobserver agreement and treatment integrity?

3. Research Design: Which design (e.g., multiple baseline, reversal) and why?
4. Procedure: How will you conduct sessions?
3. Results
 1. Graph of hypothetical results.
 2. You should be able to discuss BASELINE LOGIC (prediction, verification, replication) for your design/results.
4. References
5. APA style & grammar

APA Citation Style: All papers MUST be written using APA style (7 ed.).

Important Note: Plagiarism essentially means that you cannot use the words and ideas of another person without giving them credit. Therefore, “quotation marks” should be used to indicate the exact words of another. That said, exact quotes should be kept to a minimum. Rather, each time you paraphrase another author you will need to credit the source in the text. If you have any questions about what constitutes cheating or plagiarism, please see me. Students who plagiarize any material will earn a grade of F for the course. Please see the section on “academic integrity” below.

Presentation

Each student will deliver a 10-minute presentation summarizing their proposal for the class. Students should use PowerPoint slides for the presentation and be prepared to discuss. Presentations will occur during Weeks 13 and 14 of the course.

Grading:

Assessment Tool (Category)	Percentage
Exams (x2)	40%
Objective Questions	15%
(In-class) Activities	15%
Research Proposal	20%
Presentation	10%
Total	100%

The following grading standards will be used in this class.

Grade	Description	Numerical Equivalent
A	Outstanding	89.5-100 (4.0)
B+	Intermediate grade	86.5-89.4 (3.5)
B	Good	79.5-86.4 (3.0)
C	Grades of <u>C</u> do not count toward graduation	69.5-79.4 (2.0)
F	Failing	69.4 or below (0.0)
INC	Incomplete	

- Standards:** All MAP and Graduate Certificate in ABA students must achieve a grade of B or better and maintain a GPA of 3.0, or academic remediation will be enforced.
- Attendance:** It is expected that each student attends every scheduled class. If you are unable to attend or will be late, please email me prior to class. Students are excused from class when observing religious holidays, in accordance with Rutgers University policy. Students will be responsible for all material covered during their absence.
- Timeliness:** Be sure to pay close attention to deadlines. Late work may be accepted with a serious and compelling reason and approval. However, assignments that are submitted after the due date may be subject to a 10% penalty per day (with a 24-hour grace period).
- Technology:** If students expect to send or receive urgent e-mails, texts, or calls during class, their needs should be communicated to and approved by the instructor prior to class. All cell phones should be turned off or placed in silent mode. All computing devices should be used only for the purpose of class-related activities.
- Email:** Prompt communication is essential. On weekdays I will try my best to respond to emails within 18 hours. Over the weekend, please allow 24-36 hours for a response.
- GSAPP Diversity:** The Graduate School of Applied and Professional Psychology (GSAPP) at Rutgers University-New Brunswick is committed to diversity, equity, and inclusion (DEI). We view individuals from a variety of backgrounds, lived-experiences, identities, and perspectives across our community members as critical to our threefold mission of world-class education, scholarship, and public service. We aim to honor diversity through a variety of means, such as inclusive groups, events, initiatives, curricula, and our organizational composition. We strive to create and maintain a safe space in which all voices are heard and valued, consistent with

Rutgers University's Beloved Community. GSAPP acknowledges the current, historical, and systemic practices that have been used to marginalize and oppress some identities and give power and privilege to others in and beyond the United States. Additionally, we are keenly aware of the destructive effects, including on mental health and personal well-being, of prejudice, stigma, microaggressions, and violence in all its forms. We engage in a critical examination of our own biases and behaviors, both past and present. We utilize evolving methods to address, incorporate, and celebrate DEI through our scholarship, service, and training of future health service professionals.

Accessibility:

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form (<https://webapps.rutgers.edu/student-ods/forms/registration>).

Integrity:

Students who use ChatGPT and similar artificial intelligence tools on assignments without permission, or who use them in improper ways, are violating the academic integrity rules of the University. Students who use ChatGPT and similar programs improperly are seeking to gain an unfair advantage, which means they are committing academic dishonesty. <https://academicintegrity.rutgers.edu/sites/default/files/pdfs/current.pdf>

Safety:

As the semester goes on it will become darker earlier. If you need a safety escort: <https://ipo.rutgers.edu/publicsafety/rupd/escorts>

Librarian:

Samantha Kannegiser, Liaison to Psychology
 Schedule meeting: <https://libcal.rutgers.edu/appointments/samantha>
 Phone number: (856) 225-2832 (leave a message)
 Email: samantha.kannegiser@rutgers.edu
<https://www.libraries.rutgers.edu/ask>

Freedom of Speech:

<https://www.rutgers.edu/president/academic-freedom-free-speech>

Other Resources:

<https://gsapp.rutgers.edu/current-students/important-links>

Title IX: <http://compliance.rutgers.edu/resources/resources-for-facultystaff>

Counseling: Students often experience personal problems or difficulties during the term that may interfere with learning and their daily activities. If you or someone you know needs to talk to someone regarding such personal issues, the University provides free counseling services through the Counseling and Psychological Services (CAPS) and their information can be found at <http://psychologicalservices.rutgers.edu>. They also offer several useful workshops for general stress management and techniques for promoting mental health. If you have any questions about CAPS or other services, I am happy to speak with you privately.

WEEKLY SCHEDULE

Modules/Meetings	Topics/Readings	Assignments/Activities
Week 0 9/3	Abbreviated Introduction 3:35-4:15 PM	Your Values Task List Analysis Survey Syllabus Review
Week 1 9/10	Introduction to Single Case Design and Analysis Kazdin Ch 1 (pp. 1-4) Baer, Wolf, & Risley (1968)	Introductions In-class: Seven dimensions of ABA
Week 2 9/17	Error in Research & Threats to Validity Kazdin Ch 1 (pp. 5-28) Kazdin Ch 2 Baer (1977)	Objective Questions (OQ) 1 In-class: Threats to Validity
Week 3 9/24	Assessment Considerations & Data Collection Basics Kazdin Ch 3 Kazdin Ch 4 LaBlanc et al (2016)	OQ 2 In-class: Data Recording Activity
Week 4 10/1	Integrity of the Dependent & Independent Variables Kazdin Ch 5 Vollmer et al (2008)	OQ 3 Proposal idea due In-Class: IOA Activity
Week 5 10/8	Graphical Data Displays Kadzin Ch 13 (pp. 340-352)	OQ 4 In-class: Graphing in Excel

Week 6 10/15	Introduction to Visual Inspection Kazdin Ch 13 (pp. 353-387) Review	OQ 5 In-class: Estimating Trend
Week 7 10/22		Exam 1 (in-class)
Week 8 10/29	Baseline Logic ABAB/Reversal Designs Kazdin Ch 6 Rehfeldt & Chambers (2003) Tasky et al. (2008)	OQ 6 In-class: Article Analysis I
Week 9 11/5	Multiple Baseline Designs & Probe Designs Kazdin Ch 7 Kazdin Ch 10 Gil et al (2019) Sarakoff & Sturmey (2004)	OQ 7 In-class: Article Analysis II In-class peer review I: Method & Results
Week 10 11/12	Changing Criterion Designs & Multielement/Alternating Treatment Designs Kazdin Ch 8 Kazdin Ch 9 Allen & Evans (2001)	OQ 8 In-class: Article Analysis III
Week 11 11/19	Additional Design Options Kazdin Ch 11 Kazdin Ch 12 Cannella-Malone et al (2006)	OQ 9 In-class: Article Analysis IV In-class peer review II: Complete draft
Week 12 11/26	Evaluation of Data & Design Kazdin Ch 15 Kazdin Ch 16	OQ 10 In-class: Data Evaluation
Week 13 12/3	Summing Up Kazdin Ch 17	In-class: Presentations I
Week 14 12/10	Review	In-class: Presentations II
Week 15 12/17		Exam 2 (on Canvas)

NOTE: The dates assigned to each topic are approximate. Instructor reserves the right to modify aspects of the course (e.g., readings) during the semester to better serve the needs of the students.

Rutgers University Mission

As the premier comprehensive public research university in the state's system of higher education, Rutgers, The State University of New Jersey, has the threefold mission of:

- providing for the instructional needs of New Jersey's citizens through its undergraduate, graduate, and continuing education programs,
- conducting the cutting-edge research that contributes to the medical, environmental, social, and cultural well-being of the state, as well as aiding the economy and the state's businesses and industries, and
- performing public service in support of the needs of the citizens of the state and its local, county, and state governments.

Each component of the university's mission reinforces and supports the other two.

As the University of New Jersey®, Rutgers is dedicated to teaching that meets the highest standards of excellence, to conducting research that breaks new ground, and to provide services, solutions, and clinical care that help individuals and the local, national, and global communities where they live.

GSAPP Mission

The mission of GSAPP is threefold: education, research/scholarship, and public service. Its goal is to prepare well-educated, qualified, and competent direct-service psychologists who have a special commitment to direct community involvement and to underserved populations--professionals who can integrate scientific knowledge with innovation in the delivery of psychological services to individuals, families, groups, and organizations. Professionals receiving a doctoral degree in psychology should be capable of extending psychological knowledge and exhibiting the high level of analytic skills and theoretical understanding needed to use existing and emerging psychological knowledge.

Core Values. We are guided by four core values that are apparent in our learning environment, centers, and clinics:

1. **Academic excellence** in preparing students for careers in clinical and school psychology.
2. Commitment to **social justice** and helping **underserved populations**.
3. **Diversity** of students trained, approaches used, theoretical orientations followed, and populations served.
4. **Knowledge generation and dissemination** using contemporary research approaches.

MAP Statement

The program embraces the mission of the school by offering instruction that has an emphasis on civic and global citizenship, social justice, and cultural diversity. This course of study provides students with the knowledge needed to understand individual and collective behaviors; develop quantitative and qualitative statistical analysis and research design needed to analyze the corresponding physical and environmental contributors to human behavior; and a beginning understanding of the analysis and treatment of behavior problems and disorders.

The MAP degree will prepare students with the requisite theoretical knowledge; critical thinking and problem-solving skills needed to successfully participate in employment or scholastic activities. Students will have opportunities to pursue scholarly activities that prepare them to successfully compete for admissions into doctoral-level psychology and related academic programs and pursue master's level career pathways through available concentration and certificate programs (see examples of concentration areas listed below). In addition to completing the required coursework (36 credits), completion of the MAP degree will be marked by a culminating academic experience—Capstone project (either a research project/presentation (3 credits) and experiential learning activity (6-credit practicum training). In general, students will acquire a knowledge base grounded in psychological theory and experiential learning (research or practicum) designed to further advance their personal and professional career development.