College of Education and Human Development
Division of Special Education and disAbility Research

Fall 2022
EDSE 621 001: Applied Behavior Analysis: Empirical Bases
CRN: 70875, 3 – Credits

Instructor: Dr. Lisa Tullo	**Meeting Dates:** 8/22/22 – 12/14/22
Phone: 703-993-6589	**Meeting Day(s):** Wednesdays
E-Mail: ltullo@gmu.edu	**Meeting Time(s):** 7:20 pm – 10 pm
Office Hours: By appointment	**Meeting Location:** Fairfax; KH 17
Office Location: Finley 100 D	**Other Phone:** N/A

Note: **This syllabus may change according to class needs. Teacher Candidates/Students will be advised of any changes immediately through George Mason e-mail and/or through Blackboard.**

Prerequisite(s):
EDSE 619 with a grade of B- or XS (may be taken concurrently).

Co-requisite(s):
None

Course Description
Focuses on measurement, data display, data interpretation, and experimental design in applied behavior analysis. Prepares candidates to design and use data collection systems, apply data-based decision making, and appropriately deploy single-subject experimental designs in applied situations. Enables candidates to become informed consumers of behavior analytic research.

Course Overview
Focuses on measurement, data display, data interpretation, and experimental design in applied behavior analysis. Prepares candidates to design and use data collection systems, apply data-based decision making, and appropriately deploy single-subject experimental designs in applied situations. Enables candidates to become informed consumers of behavior analytic research.

Advising Contact Information
Please make sure that you are being advised on a regular basis as to your status and progress in your program. Students in Special Education and Assistive Technology programs can contact the Special Education Advising Office at 703-993-3670 or speced@gmu.edu for assistance. All other students should refer to their assigned program advisor or the Mason Care Network (703-993-2470).

Advising Tip
All students should have a program plan to follow. Check your plan each semester when registering. Email speced@gmu.edu for details.

Course Delivery Method
Learning activities include the following:

1. Class lecture and discussion
2. Application activities
3. Small group activities and assignments
4. Video and other media supports
5. Research and presentation activities
6. Electronic supplements and activities via Blackboard

Learner Outcomes
Upon completion of this course, teacher candidates/students will be able to:

1.Establish operational definitions of behavior.
2.Distinguish among direct, indirect, and product measures of behavior.
3.Measure occurrence (frequency, rate, percentage), temporal dimensions (duration, latency, interresponse time), form and strength (topography, magnitude), and trials to criterion.
4.Design and implement sampling procedures (i.e., interval recording, time sampling).
5.Evaluate the validity and reliability of measurement procedures.
6.Select a measurement system to obtain representative data given the dimensions of behavior and the logistics of observing and recording.
7.Graph data to communicate relevant quantitative relations (e.g., equal interval graphs, bar graphs, cumulative records, standard celeration charts).
8.Interpret graphed data.
9.Distinguish between dependent and independent variables, and between internal and external validity.
10.Identify defining features of single-subject experimental design (e.g., individuals serve as their own controls, repeated measures, prediction, verification, and replication).
11.Describe advantages of single-subject experimental designs compared to group designs.
12.Use single-subject experimental designs.
13.Describe rationales for conducting comparative, component, and parametric analyses.

Professional Standards

This course is part of the George Mason University, School of Education, Special Education Program for Applied Behavior Analysis Graduate Certificate. The content of the courses in this program is derived from the Task List published by the national Behavior Analyst Certification Board (BACB) as well as the Ethics Code for Behavior Analysts. The Ethics Code for Behavior Analysts is listed on the following website: https://www.bacb.com/wp-content/uploads/2020/11/Ethics-Code-for-Behavior-Analysts-2102010.pdf. For more information on the Board and the examination, please visit the Board's website at www.bacb.com.

Required Texts

Cooper, J. O., Heron, T. E., & Heward, W. L. (2019). Applied Behavior Analysis (3rd ed). Upper Saddle River, NJ: Merrill/Prentice Hall. ISBN 0134752554. Foxx, R. M., & Mulick, J. A. (2015).

Foxx, R. M., & Mulick, J. A. (2015). Controversial therapy for autism and intellectual ldisabilities: Fad, fashion, and science in professional practice (2nd ed.).Routledge. https://doi.org/10.4324/9781315754345

Recommended Texts

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). https://doi.org/10.1037/0000165-000

Required Resources

Go to the Behavior Analyst Certification Board website (www.bacb.com) and download the5th edition Task List as a reference resource for this course.

Additional Readings

Labott, S. M., & Johnson, T. P. (2004). Psychological and social risks of behavioral research. IRB: Ethics & Human Research, 26, 11-15.

Malott, R. W. (2002). Notes from a radical behaviorist: Is it morally defensible to use the developmentally disabled as guinea pigs? Behavior and Social Issues, 11, 105- 106. Additional readings may be assigned based on need. They will be announced in class and added to Blackboard.

Additional readings may be posted on Blackboard.

Course Performance Evaluation

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard, VIA, hard copy).

VIA Performance-Based Assessment Submission Requirement

No required upload.

Assignments and/or Examinations

Final Exam: 50 points. A 50-item final exam is used to test knowledge of measurement and experimental design concepts. Each correct response to a multiple choice question will earn 1 point. Each correct response on the graphing portion of the test will also earn one point.

Experimental Design Replication and Extension Project (EDRE): 2 @ 30 points each. This is one of two group assignments in this course. You will be assigned to a group during the first week of the course. Your group will be given an article related to ABA (see also Research Worksheet below). Your group will develop a replication and extension study and will submit a draft of the assigned components for feedback, as indicated in the course calendar. These components are:

• Development of the experimental question to be examined by the replication and extension experiment, based on the recommendations in the discussion section of the original study.
• Operational definition of the dependent variable.
• Development of a measurement system for the dependent variable.
• Specification of the independent variable(s).
• Selection of a single subject experimental design that will permit examination of the experimental question.
• Step by step procedural implementation instructions for the independent variable(s) in the context of the selected single subject experimental design.
• Step by step procedural instructions (including calculations) for determining interobserver agreement for the dependent variable.
• Step by step procedural instructions (including calculations) for determining procedural fidelity (or treatment integrity) for the independent variable.

EDRE Drafts. 12 points (6 @ 2 points each). Drafts will be cumulative in nature, will incorporate editorial feedback provided by the instructor, and will be worth 2 points per draft. During the last week of the course, the group will assemble all of the drafts (and make all recommended editorial changes) into one single project and will submit this as assigned.

Single Case Analysis Project: Throughout the semester, you will collect and graph data on your own progress in learning how to analyze single case graphs. This will give practice implementing a single case research design using multiple baselines. The project will include analyzing single case graphs with different designs (4 @ 5 points each), graphing your progress (3 @ 5 points each) and a paper reviewing the procedure and results (20 points).

Performance-based Common Assignments

Research Worksheet. 10 points. As a precursor to the EDRE project, your group will complete a research worksheet. Your group will be assigned the article (and it will also serve as the basis of your EDRE project, thereby providing a sound basis on which to

develop the replication and extension study required for the project). The research worksheet is worth up to 10 points.

Problem Sets. You will complete these per instructions contained on each problem set. A total of 10 points is possible for each correctly completed Problem Set. Incorrect responses may be corrected and resubmitted once, for up to ½ credit for each corrected response. Corrected problem sets will be accepted up to the time of the final examination; none will be accepted afterward. Due dates are indicated in the class schedule.

Quizzes. You will complete quizzes as specified in the course calendar, below. Each quiz question is worth 1 possible point. Quizzes may be taken twice, with the higher quiz score counting toward your grade. Quizzes will be timed, with the amount of time permitted for the quiz equal to 1.5 minutes multiplied by the number of quiz question

CITI Module: 10 points. The CITI Program is an on-line training program on the principles, regulations, and rules governing the practice of research. Students will complete the Basic CITI Responsible Conduct of Research Module recommended for anyone conducting research at GMU. These modules are available through https://about.citiprogram.org/en/course/responsible-conduct-of-research-basic/. When you have completed the basic course modules, you will receive a Completion Report. Upload the certificate of completion in the assignment link

Reflection Papers. In conjunction with your readings from Controversial Therapies for Autism and Developmental Disabilities, you will complete a 1- page Reflection Paper based on the given prompt for each reading assignment. Prompts will be provided on Blackboard. You will earn up to 5 points for each Reflection Paper. Due dates are indicated in the class schedule.

Assignment Summary

Assignment Type	Number of Instances	Points per Instance	Total Assignment Points
Final Exam	1 exam	50 points	50 points
EDRE Project	1 project	30 points	30 points
EDRE Project Drafts	6 drafts	2 points	12 points
Participation- EDRE Project	1 project	1 point	1 point
Participation- EDRE Project Drafts	6 drafts	1 point	6 points
Single Case Analysis Project	1 project	55 points	70 points
Research Worksheet	2 worksheets	10 points	20 points
Research Worksheet Participation	2 worksheet	2 point	2 point
Problem Sets	4 sets	10 points	40 points
Quiz Questions	6 quizzes	10 points	60 points
CITI Module	1 module	10 points	10 points
Reflection Papers	7 papers	5 points	35 points
WWC SCD Modules	1 module	15 points	15 points

Attendance	13 weeks	2 points	26 points
Total points			377 points

Course Policies and Expectations

Attendance/Participation

You are expected to arrive on time for all class sessions, attend all class sessions, remain in class for the duration of each session, and to participate actively throughout the session. Some course materials will be available on Blackboard for those who either missed class or need additional time with the materials. If you do miss class, you may also contact a classmate regarding notes and other activities that took place in your absence.

You are expected to communicate promptly and respectfully with assigned groupmates. One additional point will be granted for each draft, research worksheet, and EDRE project for each group member, when that assignment has been submitted on time, with participation of each group member. (As indicated in assignment instructions on Blackboard, group members participating in an assignment will list their names and coparticipating groupmate names atop the first page of the submission. Only group members whose names are listed will receive the participation point for a submission.)

Late Work

Work is considered on time if it is submitted by 11:59 p.m. (ET) on the date that it is due. Late work will only be accepted when prior arrangement has been made with the instructor.

Other Requirements

Cell phones must be turned off and/or set on vibrate. Computers are allowed for note taking and course-related work ONLY.

Grading

Traditional rounding principles apply.
93-100% = A
90-92% = A-
87-89% = B+
83-86% = B
80 – 82% = B-
70 – 79% = C

***Note:** The George Mason University Honor Code will be strictly enforced. See Academic Integrity Site (https://oai.gmu.edu/) and Honor Code and System (https://catalog.gmu.edu/policies/honor-code-system/). Students are responsible for reading and understanding the Code. "To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code: Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work." Work submitted must be your own new, original work for this course or with proper citations.

Professional Dispositions
Students are expected to exhibit professional behaviors and dispositions at all times. See Policies and Procedures (https://cehd.gmu.edu/students/polices-procedures/).

Class Schedule
*Note: Faculty reserves the right to alter the schedule as necessary, with notification to students.

Module	Date	Topics (in class)	Assignments/Activities
Module 1	Week 1 8/24/2022	• Review Syllabus • Introduction to observation, measurement, & single-subject design • Dependent and Independent Variables • Reading behavior analytic research • Measurement – Why bother? • Defining dependent variables • Social Validity	*Read*: • Syllabus • Syllabus Quiz (in class)
	Week 2 8/31/2022		Read: • CT Ch 1-4 • ABA pp. pp. 3-7, 16-17, 59-70, 73-80 • Articles on Blackboard • Group Research Article Due: • Module 1 Reflection Paper • Group Research Worksheet (in class)
Module 2	Week 3 9/7/2022	• Direct Measures of Behavior: count, cumulative count, duration, rate, latency, interresponse time, extensity, intensity • Reliability and Interobserver agreement for direct measures of behavior • Continuous and discontinuous measurement	Read: • ABA 103-105, 110 - 121 • Articles on Blackboard • Group Research Article Due: • Quiz 1 • Group Research Worksheet (in class)
	Week 4 9/14/2022		Read: • CT Ch 5-6 Due: • Module 2 Reflection Paper • Module 2 Problem Set 1 • EDRE Draft 1 (in class)
Module 3	Week 5 9/21/2022	• Indirect Measures of Behavior: accuracy, intensity, trials to criterion, percentage, percentage occurrence, percentage intervals occurrence, permanent products, and other estimates	Read: • ABA pp. 80-100, review 110-121 • Articles on Blackboard Due: • Single Case Analysis Test 1

		• Reliability and interobserver agreement for indirect measures of behavior • Continuous and discontinuous measurement • Selecting appropriate measures • General data collection issues	• Quiz 2
	Week 6 9/28/2022		Read • CT Ch 9-11 Due: • Module 3 Reflection Paper • Module 3 Problem Set 2 • EDRE Draft 2 (in class)
Module 4	Week 7 10/5/2022	• Visual interpretation of time series analysis data • How to graph • How to read a graph	Read: • ABA p. 124-154 • Articles on Blackboard Due: • Single Case Analysis Test 2 • Quiz 3
	Week 8 10/12/2022		Read: • CT Ch 12-14 Due: • Module 4 Reflection Paper • Module 4 Problem Set 3 • EDRE Draft 3 (in class)
Module 5	Week 9 10/19/2022	• Single subject (Time Series Analysis) Designs • Withdrawal Designs (AB, ABA, ABAB, BAB, etc.) • Alternating Treatments Design • Pairwise Comparison Design • Threats to internal validity with these designs	Read: • ABA Ch 7 and 8 • Articles on Blackboard Due: • Single Case Analysis Graphs • Quiz 4
	Week 10 10/26/2022		Read: • CT Ch. 15-19 Due: • Single Case Analysis Test 3 • Module 5 Reflection Paper • EDRE Draft 4 (in class)
Module 6	Week 11 11/2/2022	• Multiple Baseline Designs • Changing Criterion Design • Simultaneous Treatments Design • Threats to internal validity	Read: • ABA Ch. 9 • Articles on Blackboard Due: • Single Case Analysis Graphs • Quiz 5
	Week 12		Read:

	11/9/2022		• CT Ch. 20-22 Due: • Single Case Analysis Test 4 • Module 6 Reflection Paper • Module 6 Problem Set 4 • WWC SCD Modules • EDRE Draft 5 (in class)
Module 7	Week 13 11/16/2022	• Combining measurement and design elements to solve complex problems • Measuring choice, preference, and psychiatric symptoms • Behavior Analytic Literature Research Ethics • General Issues in Measurement and Experimental Design – Review of Designs, Functional Control, and Internal Validity	Read: • ABA Ch. 10 • Articles on Blackboard Due: • Quiz 6 • EDRE Draft 6 (in class) • Single Case Analysis Graphs
	11/23/2022	Thanksgiving break; no class	
	Week 14 11/30/2022	Final Project Presentation	Read: • CT Ch. 23-25 Due: • CITI Module • Module 7 Reflection Paper • EDRE Presentation (in class) • Single Case Analysis[2]
Module 8	Week 15 12/7/2022	Final Exam Submit EDRE Projects	Due: • Final EDRE Projects • Final Exam • Problem Set corrections

Core Values Commitment

The College of Education and Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: See Core Values (http://cehd.gmu.edu/values/).

GMU Policies and Resources for Students

Policies

- Students must adhere to the guidelines of the Mason Honor Code. See Honor Code and System (https://catalog.gmu.edu/policies/honor-code-system/).

- Students must follow the university policy for Responsible Use of Computing. See

Responsible Use of Computing (http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/).

- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.

- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor. See Disability Services (https://ds.gmu.edu/).

- Students must silence all sound emitting devices during class unless otherwise authorized by the instructor.

Campus Resources

- Support for submission of assignments to VIA should be directed to viahelp@gmu.edu or https://cehd.gmu.edu/aero/assessments.

- Questions or concerns regarding use of Blackboard should be directed to Blackboard Instructional Technology Support for Students (https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/).

Notice of mandatory reporting of sexual assault, sexual harassment, interpersonal violence, and stalking:

As a faculty member, I am designated as a "Non-Confidential Employee," and must report all disclosures of sexual assault, sexual harassment, interpersonal violence, and stalking to Mason's Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason's confidential resources, such as the Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance or support measures from Mason's Title IX Coordinator by calling 703-993-8730, or emailing titleix@gmu.edu.

For additional information on the College of Education and Human Development, please visit our website College of Education and Human Development (http://cehd.gmu.edu/).

Appendix

Assessment Rubric(s)

The final exam is the signature assessment for this course. Scores on the exam will be used for program evaluation instead of a rubric.