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

Fall 2020
EDSE 621 001: Applied Behavior Analysis: Empirical Bases
CRN: 71565, 3 – Credits

Instructor: Robin Moyher	**Meeting Dates:** 8/24/20 – 12/16/20
Phone: 703-403-9746	**Meeting Day(s):** Thursday
E-Mail: rmoyher1@gmu.edu	**Meeting Time(s):** 7:20 pm – 10 pm
Office Hours: as needed	**Meeting Location:** Fairfax; KH 15
Office Location: TBD	**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 better (may be taken concurrently).

Co-requisite(s):
None

Course Description
Focuses on basic content of applied behavior analysis. Teaches how to implement behavioral procedures and develop behavioral programs for clients with fundamental behavioral needs.

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
Have you met with an advisor? All students should make an appointment to meet with an advisor to outline a plan for completing coursework and non-course requirements such as testing. To make an appointment by phone or in person, go to http://gse.gmu.edu/special-education/advising/.

Course Delivery Method
This course will be delivered face to face, with assignment submissions and asynchronous activities via blackboard Learning Management system (LMS) housed in the MyMason portal. You will log in to the Blackboard (Bb) course site using your Mason email name (everything before @masonlive.gmu.edu) and email password. In the event of changes due to COVID, we will follow George Mason University policies.

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. 1.Establish operational definitions of behavior.
2. 2.Distinguish among direct, indirect, and product measures of behavior.
3. 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

Professional Standards (Behavior Analyst Certification Board (BACB), Professional and Ethical Compliance Code for Behavior Analysts) The content of the course is derived from the Task List published by the national Behavior Analyst Certification Board (BACB) as well as the Professional and Ethical Compliance Code for Behavior Analysts. The Professional and Ethical Compliance Code for Behavior Analysts is listed on the following website: http://bacb.com/wpcontent/uploads/2016/03/160321-compliance-code-english.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. (2020). *Applied Behavior Analysis* (3nd Ed.). Upper Saddle River, New Jersey: Pearson Merrill Prentice Hall.

Foxx, R.M., & Mulick, J.A. (2015). *Controversial Therapy for Autism and Intellectual Disabilities: Fad, Fashion, and Science in Professional Practice* (2nd Edition). New York, New York: Routledge.

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 the 4th edition Task List and the Disciplinary Standards as reference guides for this course.

Additional Readings

Bland, V.J., Cowie, S., Elliffe, D., & Podlesnik, C.A. (2018). Does a negative discriminative stimulus function as a punishing consequence? *Journal of the Experimental Analysis of Behavior, 110* (1), 87-104.

Crowley, J.G., Peterson, K.M., Fisher, W.W., & Piazza, C.C. (2020). Treating food selectivity as resistance to change in children with autism spectrum disorder. *Journal of Applied Behavior Analysis, 53* (3), 30-45.

Ennett, T.M., Zonneveld, K.L.M., Thomson, K.M., Vause, T., & Ditor, D. (2020). Comparison of two TAGteach error-correction procedures to teach beginner yoga poses to adults. *Journal of Applied Behavior Analysis, 53* (1), 222-236.

Feuerbacher, E.N., & Wynne, C.D. (2017). Dogs don't always prefer their owners and can quickly form strong preferences for certain strangers over others. *Journal of the Experimental Analysis of Behavior, 108* (3), 305-317.

Hansson, J., & Neuringer, A. (2018). Reinforcement of variability facilitates learning in humans. *Journal of the Experimental Analysis of Behavior, 110* (3), 380-393.

Kronfil, F.R., Vollmer, T.R., Ferrand, J.K., & Bolivar, H.A. (2019). Evaluating preference and reinforcing efficacy of fruits and vegetables compared with salty and sweet foods. *Journal of Applied Behavior Analysis, 53* (1), 385-401.

Kuroda, T., Cook, J.E., & Lattal, K.A. (2018). Baseline response rates affect resistance to change. *Journal of the Experimental Analysis of Behavior, 109* (1), 164-175.

Morris, S.L., & Vollmer, T.R. (2020). A comparison of methods for assessing preference for social interactions. *Journal of Applied Behavior Analysis, 53* (2), 918-937.

Rost, K.A. (2018). Reinforcement uncertainty enhances preference for choice in humans. *Journal of the Experimental Analysis of Behavior, 110* (2), 201-212.

Vorbeck, B., & Bordlein, C. (2020). Using auditory feedback in body weight training. *Journal of Applied Behavior Analysis, 53* (3), 1-11.

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 upload requirement.

Assignments and/or Examinations
Final Exam: 50 points
This is a Performance-based Assessment. Tk20 submission is required. A 50-item final exam is used to test knowledge of measurement, assessment, and experimental design concepts. Each question is worth 1 point and composed of multiple-choice questions and a graphing component. Given a data set, you will be asked to hand-graph the data and then interpret the results.

Make Your Own Experiment: 60 points (2 @ 30 points each)
This is a Performance-based Assessment. This is one of two types of group assignment in this course. You will be assigned to a group during the first week of the course. Your group will be given two articles from the behavior analytic literature: one from the Experimental Analysis of Behavior, and one from Applied Behavior Analysis. Given these, your group will develop a replication and extension study for each, and will submit a draft of the assigned components for feedback each week, 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.

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 Experimental Analysis of Behavior project, and one single Applied Behavior Analysis project, and will submit these as assigned. Each of these two projects will be worth up to 30 points.

Performance-based Common Assignments (No Tk20 submission required)

Research Worksheets. As a precursor to the Make Your Own Experiment Projects, your group will complete two research worksheets – one for an article from the Experimental Analysis of Behavior literature, and from the Applied Behavior Analysis literature. Your group will be assigned the articles that will serve as the basis of your Make Your Own Experiment projects, thereby providing sound bases on which to develop the replication and extension studies required for those projects. Each 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. On each attempt, however, you may not return to a quiz question once it has been answered. Quizzes will be timed, with the amount of time permitted for the quiz equal to 1.5 minutes multiplied by the number of quiz questions. There will be 75 quiz questions, in total, across the course.

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.

Discussion Board posts. Complete the reading from the *Controversial Therapies* text, as assigned in the course calendar. In the weeks indicated in the course calendar, you will complete one discussion board assignment by doing the following:

- Respond directly to the discussion prompt provided (1 point).
- Comment or otherwise add to the discussion for one or more responses made by a classmate for that prompt (1 point).

There are ten discussion board assignments, for a total possible 20 points.

Course Policies and Expectations

Attendance/Participation

Students are expected to attend all class meetings, as graded assignments will be completed within the class meeting time frame. It is the student's responsibility to make up all missed work if they are absent for any reason. Those who do miss class with prior notification to the instructor have the option to complete an assignment to make up for missed attendance and reading check points within a week of the missed class, unless otherwise arranged with the course instructor.

All are expected to communicate promptly and respectfully with assigned groupmates. One additional point will be granted for each draft, research worksheet, and Make Your Own Experiment 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 co-participating 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 11:59pm EST on the date that it is due, unless the syllabus specifies a class meeting due date, then the assignment is due at the start of class (7:30pm EST). No assignments will be accepted late and receive full credit unless negotiated with the instructor at least 24 hours before the assignment is due. The assignment grade may be reduced up to 10%. The decision rests with the professor.

Grading Scale
Traditional rounding principles apply.

93-100% = A	90-92% = A-	87-89% = B+	83-86% = B
80 – 82% = B-	70 – 79% = C	<70% = F	

Please note, the graduate grading scale does not include a "D".

Assignment Type	Number of Instances	Points per Instance	Total Assignment Type	Cumulative Points
Final Exam	1 exam	50 points	50 points	50 points
Make Your Own Experiment Project	2 projects	30 points	60 points	110 points
Make Your Own Experiment Project Drafts	8 drafts	2 points	16 points	126 points
Participation – Make Your Own Experiment Project	2 projects	1 point	2 points	128 points
Participation – Make Your Own Experiment Project Drafts	8 drafts	1 point	8 points	136 points
Research Worksheets	2 wksheets	10 points	20 points	156 points
Research Worksheet Participation	2 wksheets	1 point	2 points	158 points
Problem Sets	4 sets	10 points	40 points	198 points
Quizzes	75questions	1 point	75 points	273 points
CITI Module	1 module	10 points	10 points	283 points
Discussion Board Posts	10 posts	2 points	20 points	303 points

A = 282-303 points	A- = 272-281 points	B+ = 264-271 points	B = 252-263 points	B- = 242 – 251 points	C = 212 – 241 points	F < 212 points

***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.
CT = Controversial Therapies for Autism and Intellectual Disabilities (Foxx & Mulick)
ABA = Applied Behavior Analysis (Cooper, Heron, Heward)

Date	Topics (in class)	Assignments / Activities
Week 1 8/29/19	Review Syllabus Introduction to observation, measurement, & single-subject design Group Assignments	Read: • Syllabus
Week 2 9/5/19	Dependent and Independent Variables Reading behavior analytic research Identifying and defining target behaviors	Read: • CT Ch 1 • ABA Ch 1, pp. 65 – 69 Due: • DB 1 • Quiz 1
Week 3 9/12/19	Measurement – Why bother? Direct Measures of Behavior: count, cumulative count, duration, rate, latency, interresponse time, extensity, intensity	Read: • CT Ch 2 and 3 • ABA pp. 73 – 80, 83 - 90 Due: • DB 2 • Quiz 2 • Research Worksheet 1 • Problem Set 1
Week 4 9/19/19	Measurement – Indirect Measures of Behavior: accuracy, intensity, trials to criterion, percentage, percentage occurrence, percentage intervals occurrence, permanent products, and other estimates; Selecting appropriate measures; General data collection issues	Read: • CT Ch 4 • ABA pp. 81 – 82, 85 – 87, 90 – 100 Due: • DB 3 • Quiz 3 • Research Worksheet 2 • Problem Set 2
Week 5 9/26/19	Measurement – Improving and assessing the quality of measurement; accuracy, believability, reliability, interobserver agreement (IOA)	Read: • CT Ch 5 & 8 • ABA Ch 5 Due: • DB 4 • Quiz 4 • MYOE Draft 1

Week 6 10/3/19	Data Management: Graphic data display and graph preparation; maintaining data tables; data summary; equal interval graphs; cumulative count graphs; standard behavior/celeration charts	Read • CT Ch 6 • ABA pp 127-149 Due: • DB 5 • Problem Set 3 • MYOE Draft 2
Week 7 10/10/19	General Issues in Measurement; Analyzing Behavior Change; Introduction to Research Design: Baseline logic	Read: • CT Ch 7 • ABA pp 149-155; Ch 7 Due: • DB 5 • MYOE Draft 3
Week 8 10/17/19	Withdrawal Designs (AB, ABA, ABAB, BAB, etc.); Component Analysis; Parametric Analysis	Read: • CT Ch 11 • ABA pp. 177 – 186 Due: • DB 6 • MYOE Draft 4
Week 9 10/24/19	Alternating Treatments Designs and Pairwise Comparison Designs; Measuring choice, preference, and other phenomena	Read: • CT Ch 12 & 13 • ABA pp 187-199 Due: • DB 6 • MYOE Draft 5
Week 10 10/31/19	Multiple Baseline Designs & Changing Criterion Design; Combining measurement and design elements to solve complex problems	Read: • CT ANY from Ch 15-24 • ABA: Ch 9; pp 226-230 Due: • DB 6 • MYOE Draft 6 • Problem Set 4
Week 11 11/7/19	Evaluating ABA research: internal validity, social validity	Read: • CT: ANY from Cp 15-24 • ABA Ch 10 pp 230-252 Due: • DB 7 • MYOE Draft 7
Week 12 11/14/19	Being an educated research consumer: Evaluating published research, finding research relevant to behavior problems; Reseach Ethics	Read: • CT Chp 25 & 27 Due: • DB 8 • MYOE Draft 8
11/21/19	Make you Own Experiment Week! MYOE Peer Reviews	Read: • CT Ch 26 & 29 Due: • DB 9
Week 13	NO CLASS! THANKSGIVING	

11/28/19		
Week 14 12/5/19	General Issues in Measurement and Experimental Design – Review of Designs and Functional Control	Due: • DB 10 • CITI Training Certificate
Week 15 12/12/19	Final Exam – must complete online (Blackboard) no later than 11:59 pm US Eastern Time on (date) Submit MYOE Projects	Due: • Submit MYOE Projects by 11:59 pm on (date) • Submit any corrected problem sets by 11:59 pm on (date)

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 VIA Help support@watermarkinsights.com. 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, interpersonal violence, and stalking:

- As a faculty member, I am designated as a "Responsible Employee," and must report all disclosures of sexual assault, 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 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 from Mason's Title IX Coordinator by calling 703-993-8730, or emailing the Title IX Coordinator (titleix@gmu.edu).

- **For information on student support resources on campus, see Student Support Resources on Campus (https://ctfe.gmu.edu/teaching/student-support-resources-on-campus).**

- 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)

Make Your Own Experiment

Declaration of Professional Practice (APPLIED and BASIC)	0-1	2	3
	• Any item is cut and pasted from an existing document This is considered by the instructor for referral for academic dishonesty • Written like a permission slip • Missing 2 or more critical elements • Declaration of Practice is missing	• Missing 1-2 elements of the consent form • Contains jargon or is difficult to understand • Declaration is completely in the student's own words	• Describes Self • Describes Working Style • Client Responsibilities • Code of Conduct • Confidentiality • Payment and Fees • Written at no higher than an 8th grade reading level
Informed Consent (BASIC Project Only)	0-1	2	3

	• Informed consent is missing • Created inappropriately • Written like a permission form • Contains only jargon • Does not give enough information for a reasonable person to make a decision • Is a consent form for services	• Informed consent missing 1-2 elements • Needs more detail to understand • Contains jargon or is written at too high a reading level • Is a consent to participate in the research project	• Outlines Purpose • Outlines Risks • Outlines Benefits • Outlines Alternatives • In enough detail for participant to understand • Written at no higher than an 8th grade level • Is a consent to participate in the research project
Operational Definition and Measurement System	0-1	2	3-4
	• Definition is not appropriate to the research question • Definition is too vague to collect reliable data • Data collection procedure inadequate • Sampling and measurement procedures are inaccurate • No data sheet provided • No IOA or treatment integrity	• Either operational definition has some explanatory fictions • Either definition does not pass the Dead Man test • Data collection is questionably appropriate • Not enough detail to show that student can carry out the data collection with fidelity • Either IOA or treatment integrity is missing • 1-2 errors in IOA or treatment	• Operational definition of dependent variable is in observable terms • Operational definition of independent variable is in observable terms • Avoids explanatory fictions • Passes the Dead Man Test • Measurement is Appropriate for Operational Definition • Rationale is provided for measurement system

		integrity description	• Sampling and observation procedures are appropriate for the experiment • Materials are appropriate • Recording form provided for the paper • IOA is described • Decision rules are described for IOA • Treatment integrity form is created
Experimental Design	0-2	3-6	5-6
	• Procedure will not answer research question • Baseline not described • Not enough replications for functional control • Decision rules do not follow accepted practice in single-subject designs • Several threats to internal validity • No replication	• Experimental procedure is adequate for the research question • Some decision rules questionable • May be difficult to implement from the description provided (not enough detail) • Some threats to internal validity that might affect functional control	• Experimental design is appropriate to the research question • Baseline is described if appropriate • Decision rules for moving from one condition to another or counterbalancing are described • Description of how confounds are controlled for and functional control are described • Number of participants as well as replications are described
Graphing	0-1	2-3	4-5
	• Graph does not follow ABA conventions	• Graph is missing 1-2 ABA conventions	• Sample graph is equal-interval

	• Uses another graphing method than equal interval • Does not show functional control • Phase change lines are not created appropriately	• Shows ideal functional control • Phase change lines are created appropriately	• Follows ABA conventions for graphing • Phase change lines are created appropriately • Shows ideal functional control
Bibliography and APA Style	0	1	2
	• Replications are not cited or experiment is lifted from journals (instructor will take action re: academic honesty) • No citations are used • No format of the paper	• Replications are cited • Citation style other than APA 7th edition is used • 1-2 errors in APA Style	• Any replications are cited • APA 7th edition is used to format the paper and bibliography

Discussion Board Individual Post

	0-1	**2-3**	**4**
Individual post and peer response	• Completes some of the discussion postings, which show little or no evidence of statements or comments that match response to the DB prompt and/or posted late. • Peer response does not support or extend individual post.	• Completes most of the discussion postings which show evidence of statements or comments that match response to the DB prompt and posted on time. • Peer response somewhat supports or extends individual post.	• Completes all of the discussion postings, which display an understanding of the required readings and underlying concepts including correct use of terminology and posted on time. • Peer response supports or extends individual post.
Quality of post	• No response or response given	• Response given shows some	• Responses given show firm evidence

	does not match the prompt and/or observation and practice activity.	evidence of matching the prompt and/or the observation and practice activity.	of matching the prompt and/or the observation and practice activity.