UNT DEPARTMENT OF BEHAVIOR ANALYSIS College of Health & Public Service
EST. 1890

The Matrix Project Curriculum Materials

Sample Course Units: Behavior Analysis & Sustainability

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Often Used Introduction to Behavior Analysis Textbooks

Catania, A. C. (2013). *Learning.* Cornwall-on-Hudson, New York: Sloan Publishing, LLC.

Catania, A. C. (2017). *The ABCs of behavior analysis: An introduction to learning and behavior.* Cornwall-on-Hudson, New York: Sloan Publishing, LLC.

Alberto, P. A. & Troutman, A. C. (2013). *Applied behavior analysis for teachers.* 9th ed. Pearson Publishers.

Cooper, J., Heron, T., & Heward, W. (2007). *Applied behavior analysis.* Upper Saddle River, New Jersey: Pearson Education.

Fisher, W., Piazza, C., & Roane, H. (2011). *Handbook of applied behavior analysis.* New York, New York: The Guilford Press.

Goldiamond (2004). *The blue books: Goldiamond and Thompson's functional analysis of behavior.* Marquette, Michigan: Northern Michigan University.

Holland, J. G. & Skinner, B. F. (1961). *The analysis of behavior: Programmed instruction*. Cambridge, Massachusetts: Harvard University.

Kazdin, A. E., (2013). *Behavior modification in applied settings*. Long Grove, Illinois: Waveland Press, Inc.

Ledoux, S. (2014). *Running out of time- Introducing behaviorology to help solve global problems.* Ottawa, Ontario: BehaveTech Publishing.

Ledoux, S. (2016). *What causes human behavior: Stars, selves, or contingencies?* Ottawa, Ontario: BehaveTech Publishing.

Malott, R., & Shane, J. T. (2014). *Principles of behavior*. New York, New York: Routledge.

Mayer, G., Sulzer-Azaroff, B., & Wallace, M. (2018). *Behavior analysis for lasting change.* 4th ed. Cornwall-on-Hudson, New York: Sloan Publishing.

Michael, J. (2004). *Concepts and principles of behavior analysis*. Kalamazoo, Michigan: Western Michigan University, Society for the Advancement of Behavior Analysis.

Miller, L. K., (2006). *Principles of everyday behavior analysis*. 4th ed. Wadsworth, Inc.

Miltenberger, R. (2016). *Behavior modification: Principles and procedures.* Boston, Massachusetts: Cengage Learning.

Pierce, W., & Cheney, C. (2017). *Behavior analysis and learning: A biobehavioral approach.* New York, New York: Taylor & Francis.

Sarafino, E. P. (2012). *Applied behavior analysis: Principles and procedures for modifying behavior*. Hoboken, New Jersey: John Wiley & Sons, Inc.

Skinner, B. F. (1953). *Science and human behavior*. New York, New York: The Free Press.

Often Used Observation & Measurement and Research Methods Textbooks

Bailey, J. S. & Burch, M. R. (2018). *Research methods in applied behavior analysis*. 2nd ed. New York, New York: Routledge.

Barlow, D. H., Nock, M. K., & Hersen, M. (2009). *Single case experimental designs: Strategies for studying behavior change*. Boston, Massachusetts: Pearson Education, Inc.

Johnston, J. M., Pennypacker, H. S., & Green, G. (2009). *Strategies and tactics of behavioral research*. New York, New York: Routledge.

Kazdin, A. E. (2011). *Single-case research designs*. New York, New York: Oxford University Press.

Kubina, R. & Yurich, K. K. L. (2012). *The precision teaching book*. Lemont, Pennsylvania: Greatness Achieved.

Poling, A., Methot, L. L., & LeSage, M. G. (1995). *Fundamentals of behavior analytic research*. New York, New York: Plenum Press.

Sidman, M. (1988). *Tactics of scientific research*: *Evaluating experimental data in psychology*. Authors Cooperative, Inc.

Often Used Experimental Analysis of Behavior Textbooks

Skinner, B.F. (1966). *The behavior of organisms: An experimental analysis*. Cambridge, Massachusetts: B. F. Skinner Foundation.

Often Used Ethics Textbooks

Bailey, J. & Burch, M. (2016). *Ethics for behavior analysts*. 3rd ed. New York, New York: Routledge.

Vargas, E. A. & Krapfl, E. A. (1977). *Behaviorism and ethics*. Kalamazoo, Michigan: Behaviordelia, Inc.

BACB 5th Edition Task List Sub-Section: Concepts and Principles (B)

Course Units

Course:
Introduction to Behavior Analysis

BACB 5th Edition Task List Sub-Section:
Concepts and Principles (B)

General Learning Outcome (GLO):
Students will be able to define and provide examples of behavior, response and response classes.

Task List Item:
B-1 Define and provide examples of behavior, response, and response class.

Specific Learning Outcomes (SLOs):
SLO 1
Students will define behavior.

SLO 2
Students will define response.

SLO 3
Students will define response class.

SLO 4
Students will identify the examples of a behavior from the assigned readings.

SLO 5
Students will identify the examples of a response from the assigned readings.

SLO 6
Students will identify the examples of response class from the assigned readings.

SLO 7
Students will provide a novel example of a behavior they could engage in to reduce global warming, energy consumption, or increase recycling.

SLO 8
Students will provide a novel example of a response they could engage in to reduce global warming, energy consumption, or increase recycling.

SLO 9
Students will provide a novel example of a response class they could engage in to reduce global warming, energy consumption, or increase recycling.

Activities:
Homework - SLOs 1-6 (I)
Before coming to class, students will read the assigned readings. Students should also read the chapter(s) on behavior, response, and response class from the selected introduction to

behavior analysis textbook. Students will complete their interteach prep guide which will include questions that require the students to define behavior, response, response class, and list all of the examples of each concept provided in the assigned readings.

In-class Interteach - SLOs 1-9 (G)
At the beginning of class, students will form dyads to discuss their responses to the prep guide. While in their dyads, students will develop novel examples of behavior, response, and response class that reduce global warming and energy consumption, and increase recycling. Students will create a brief presentation that outlines their novel example. The instructor will then provide a brief clarifying lecture based on questions students provide during or following the interteach activity.

Assessment:
Interteach Prep Guide (SLOs 1-6)

Group Presentation (SLOs 7-9)

Readings:
Malott, R. W. (2010). I'll save the world from global warming – tomorrow. Using procrastination management to combat global warming. *The Behavior Analyst, 33*(2), 179-180.

O'Connor, R. T., Lerman, D. C., Fritz, J. N., & Hodde, H. B. (2010). Effects of number and location of bins on plastic recycling at a university. *Journal of Applied Behavior Analysis, 43*(4), 711-715. doi: 10.1901/jaba.2010.43-711.

Van Houten, R., Nau, P. A., & Merrigan, M. (1981). Reducing elevator energy use: A comparison of posted feedback and reduced elevator convenience. *Journal of Applied Behavior Analysis, 14*(4), 377-387. Doi: 10.1901/jaba.1981.14-377.

Course:
Introduction to Behavior Analysis

BACB 5th Edition Task List Sub-Section:
Concepts and Principles (B)

General Learning Outcome (GLO):
Students will be able to define and provide examples of positive and negative reinforcement contingencies.

Task List Item:
B-4 Define and provide examples of positive and negative reinforcement contingencies.

Specific Learning Outcomes (SLOs):
SLO 1
Students will define positive reinforcement.

SLO 2
Students will define negative reinforcement.

SLO 3
Students will identify the examples of positive reinforcement from the assigned readings.

SLO 4
Students will identify the examples of negative reinforcement from the assigned readings.

SLO 5
Students will provide an example of a positive reinforcement contingency that can be used to promote sustainability-related behavior(s).

SLO 6
Students will provide an example of a negative reinforcement contingency that can be used to promote sustainability-related behavior(s).

SLO 7
Students will identify a real-world scenario and describe the positive or negative reinforcement contingency that increases or maintains sustainability-related behavior(s).

Activities:
Homework - SLOs 1-4 (I)
Before coming to class, students will read the required readings and at least one recommended reading. Students will also complete their interteach preparation guide. The interteach preparation guide should include questions that require the students to define positive and negative reinforcement, list all of the examples of positive and negative reinforcement from the readings, and ask the students to comment on situations in which they have seen similar contingencies arranged to promote sustainability-related behavior(s).

In-class Interteach - SLOs 5-7 (G)
At the beginning of class, students will form dyads to discuss their responses to the interteach preparation guide. During this time, the course instructor will facilitate the discussion, guide students to expand their discussions, and students will adjust their answers on the preparation guide. The instructor will then provide a brief clarifying lecture based on questions students provide during or following the interteach activity.

Response Paper - SLO 7 (G)
In their dyads, students will write a brief, one-page paper describing the real-world scenario, noting the positive or negative reinforcement contingency, describing why it is that type of contingency, and describing the effect on behavior.

Assessment:
Interteach Prep Guide (SLOs 1-6)

Response Paper (SLO 7)

Readings:

Required Readings

Desrochers, M. N., & Mosher, H. (2017). Evaluation of an informational and behavior change program to increase student' self-reported energy conservation. *Behavioral Interventions, 32*(3), 225-233. doi: https://doi.org/10.1002/bin.1482

Luke, M., & Alavosius, M. (2012) Impacting community sustainability through behavior change: A research framework. *Behavior and Social Issues, 21,* 54-79. doi: https://doi.org/10.5210/bsi.v21i0.3938

Malott, R. W. (2010). I'll save the world from global warming – tomorrow. Using procrastination management to combat global warming. *The Behavior Analyst, 33*(2), 179-180.

Recommended Readings

Bittle, R. G., Valesano, R., & Thaler, G. (1979). The effects of daily cost feedback on residential electricity consumption. *Behavior Modification*, *3*(2), 187-202. doi:http://dx.doi.org/10.1177/014544557932004

Grant, L. (2007). Peak oil as a behavioral problem. *Behavior and Social Issues, 16*, 65-88.

Grant, L. (2010). Sustainability: From excess to aesthetics. *Behavior and Social Issues, 19,* 7-47. doi: https://doi.org/10.5210/bsi.v19i0.2789

Grant, L. (2014). Insatiability: Part of the problem or part of the solution?. *Behavior and Social Issues, 23*, 52-67.

Keller, J. J. (1991). The recycling solution: how I increased recycling on dilworth road. *Journal of Applied Behavior Analysis, 24*(4), 617-619. doi: 10.1901/jaba.1991.24-617

Leigland, S. (2011). Beyond freedom and dignity at 40: Comments on behavioral science, the future, and chance (2007). *The Behavior Analyst, 34*(2), 283-295.

Sanguinetti, A. (2012). The design of intentional communities: A recycled perspective on sustainable neighborhoods. *Behavior and Social Issues, 21,* 5-25. doi: https://doi.org/10.5210/bsi.v21i0.3873

Course:
Introduction to Behavior Analysis

BACB 5th Edition Task List Sub-Section:
Concepts and Principles (B)

General Learning Outcome (GLO):
Students will be able to define and provide examples of schedules of reinforcement.

Task List Item:
B-5 Define and provide examples of schedules of reinforcement.

Specific Learning Outcomes (SLOs):
SLO 1
Students will define schedules of reinforcement.

SLO 2
Students will define variable ratio schedule of reinforcement.

SLO 3
Students will define variable interval schedule of reinforcement.

SLO 4
Students will define fixed ratio schedule of reinforcement.

SLO 5
Students will define fixed interval schedule of reinforcement.

SLO 6
Students will provide an example of a variable ratio schedule of reinforcement.

SLO 7
Students will provide an example of a variable interval schedule of reinforcement.

SLO 8
Students will provide an example of a fixed ratio schedule of reinforcement.

SLO 9
Students will provide an example of a fixed interval schedule of reinforcement.

Activities:
Homework - SLOs 1-5 (I)
Before coming to class, students will read the assigned readings. Students should also read the chapter(s) on schedules of reinforcement from the selected introduction to behavior analysis textbook.

Reading Quiz - SLOs 1-5 (I)
At the beginning of class, students will complete a quiz about the assigned readings. The quiz will include fill-in-the-blank questions that require students to write/type the definitions of the four basic schedules of reinforcement and short answer questions that ask students to describe the schedules of reinforcement used in each article.

Lecture - SLOs 1-5 (G)
Then the course instructor will provide a brief lecture that introduces students to the critical features of schedules of reinforcement and provides definitions and examples of each of the four basic schedules. Lectures that build in active student responding are encouraged.

In-class Activity - SLOs 6-9 (G)
Following the lecture, students will work in groups of 2-4 to draft their own examples of each of the four basic schedules of reinforcement as they could pertain to sustainability-related behavior(s). The examples should illustrate the pattern of responding associated with each schedule and should be accompanied by hypothetical data displayed in a graph. Each student should come up with their own examples.

In-class Activity Paper - SLOs 6-9 (I)
Students will describe their individual examples of the four basic schedules of reinforcement related to sustainability that they came up with in class in a paper. The paper should also include the hypothetical data they created. Each student will turn in their own paper in which they describe their own examples.

Assessment:
Reading Quiz (*SLOs 1-5)*

In-class Activity Paper (*SLOs 6-9)*

Readings:
Hake, D. F., & Foxx, R. M. (1978). Promoting gasoline conservation: The effects of reinforcement schedule, a leader, and self-recording. *Behavior Modification, 2*(3), 339-370.
- Fixed Interval

Kohlenberg, R. & Phillips, T. (1973). Reinforcement and rate of litter depositing. *Journal of Applied Behavior Analysis*, 6, 391-396.
- Variable Ratio

Nevin, J. A. (2005). The inertia of affluence. *Behavior and Social Issues*, *14*, 7-20.
- Variable Interval

Course:
Introduction to Behavior Analysis

BACB 5th Edition Task List Sub-Section:
Concepts and Principles (B)

General Learning Outcome (GLO):
Students will be able to define and provide examples of positive and negative punishment contingencies.

Task List Item:
B-6 Define and provide examples of positive and negative punishment contingencies.

Student Learning Outcomes (SLOs):
SLO 1
Students will define punishment.

SLO 2
Students will define positive punishment.

SLO 3
Students will define negative punishment.

SLO 4
Students will identify the examples of positive punishment contingencies from the assigned readings.

SLO 5
Students will identify the examples of negative punishment contingencies from the assigned readings.

SLO 6
Students will provide a novel example how a positive punishment contingency can lead to a decrease in the frequency of behaviors that otherwise could reduce global warming, slow climate change, or maintain or increase sustainability-related behavior(s).

SLO 7
Students will provide a novel example of a negative punishment contingency can lead to a decrease in the frequency of behaviors that otherwise could reduce global warming, slow climate change, or maintain or increase sustainability-related behavior(s).

Activities:
Homework - SLOs 1-3 (I)
Before coming to class, students will read the assigned readings. Students should also read the chapter(s) on punishment contingencies from the selected introduction to behavior analysis textbook.

Reading Quiz - SLOs 1-5 (I)

At the beginning of class, students will complete a quiz about the assigned readings. The quiz will include fill-in-the-blank questions that require students to write/type the definitions of positive and negative punishment contingencies, and complete short answer questions that ask students to describe positive and negative punishment contingencies that were described in the assigned readings.

Lecture - SLOs 1-5 (G)
The course instructor will provide a brief lecture that introduces students to the critical features of positive and negative punishment contingencies, providing definitions, examples, and non-examples of each. The instructor will also go over the examples of positive and/or negative punishment contingencies from the assigned readings.

Group Discussion - SLOs 6-7 (G)
Students will work in dyads to identify punishment contingencies that are already operating on people's behavior that have likely caused them to reduce efforts toward sustainable practices.

Microtheme - SLOs 6-7 (I)
Students will complete a Microtheme that responds to the following prompt "Describe one of the punishment contingencies you discussed in your group. Be sure to include the behavior, the consequence, and the effect on the future probability of responding in your answer."

Assessment:
Reading Quiz (SLOs 1-5)

Microtheme (SLOs 6-7)

Readings:
Malott, R. W. (2010). I'll save the world from global warming – tomorrow: Using procrastination management to combat global warming. *The Behavior Analyst, 33*(2), 179-180.

Todorov, J.C. (2010). On global warming and local indifference: behavioral analysis of what persons can do about their near own environment. *Behavior and Social Issues, 19*, 119-123.

Course:
Introduction to Behavior Analysis

BACB 5th Edition Task List Sub-Section:
Concepts and Principles (B)

General Learning Outcome (GLO):
Students will be able to define and provide examples of automatic and socially mediated contingencies.

Task List Item:
B-7 Define and provide examples of automatic and socially mediated contingencies.
note: only the socially mediated contingencies component of B-7 are covered

Specific Learning Outcomes (SLOs):
SLO 1
Students will define socially mediated contingency.

SLO 2
Students will identify examples of socially mediated contingencies from the assigned readings.

SLO 3
Students will create their own example of a socially mediated contingency pertaining to sustainability-related behavior(s).

Activities:
Homework - SLOs 1-2 (I)
Before coming to class, students will read the assigned readings. Students should also read the chapter(s) on socially mediated contingencies from the selected introduction to behavior analysis textbook.

Reading Quiz - SLOs 1-2 (I)
At the beginning of class, the students will complete a quiz that includes short answer questions. The questions should ask students to provide the definition of socially mediated contingencies and to describe socially mediated contingencies from the assigned readings.

Lecture - SLOs 1-2 (G)
After the quiz, the course instructor will provide a brief lecture that introduces socially mediated contingencies and walk-through the socially mediated contingencies included in the assigned readings. Lectures that build in active student responding are encouraged.

In-Class Discussion and Presentations - SLO 3 (G)
Following the lecture, students will break into groups of 2-4 and draft their own examples of socially mediated contingencies as it pertains to sustainability-related behavior(s). The groups will take turns presenting their examples to the whole class toward the end of the class period.

Assessment:
Reading Quiz (SLOs 1-2)

In-class Discussion and Presentations (*SLO 3)*

Readings:
Leigland, S. (2011). Beyond freedom and dignity at 40: Comments on behavioral science, the future, and chance (2007). *The Behavior Analyst, 34*(2), 283-295.

Sanguinetti, A. (2012). The design of intentional communities: A recycled perspective on sustainable neighborhoods. *Behavior and Social Issues*, *21*, 5-25. doi: 10.5210/bsi.v20i0.3873

Course:
Introduction to Behavior Analysis

BACB 5th Edition Task List Section:
Concepts and Principles (B)

General Learning Outcome (GLO):
Students will be able to define and provide examples of unconditioned, conditioned, and generalized reinforcers and punishers.

Task List Item:
B-8 Define and provide examples of unconditioned, conditioned, and generalized reinforcers and punishers.

Student Learning Outcomes (SLOs):
SLO 1
Students will provide a definition of unconditioned reinforcers.

SLO 2
Students will provide a definition of conditioned reinforcers.

SLO 3
Students will provide a definition of generalized reinforcers.

SLO 4
Students will provide a definition of unconditioned punisher.

SLO 5
Students will provide a definition of conditioned punisher.

SLO 6
Students will provide a definition of generalized punisher.

SLO 7
Students will identify at least one and up to three examples of unconditioned reinforcers for sustainability-related behavior(s) from one of the conceptual readings.

SLO 8
Students will identify at least one and up to three examples of conditioned reinforcers for sustainability-related behavior(s) from one of the experimental readings.

SLO 9
Students will identify at least one and up to three examples of generalized reinforcers for sustainability-related behavior(s) from one of the conceptual readings.

SLO 10
Students will propose at least one and up to three hypothetical examples of an unconditioned punisher of a behavior that relates to the sustainable practices described in the assigned readings.

SLO 11
Students will propose at least one and up to three hypothetical examples of a conditioned punisher of a behavior that relates to the sustainable practices described in the assigned readings.

SLO 12
Students will propose at least one and up to three hypothetical examples of generalized punishers of a behavior that relates to the sustainable practices described in the assigned readings.

Activities:
Homework - SLOs 1-12 (I)
Before coming to class, students will complete an interteach prep guide. The prep-guide will include fill-in-the-blank responses for *SLOs 1-12*. Cooper et al. (2007) includes a glossary of terms that may be referred to to answer questions related to *SLOs 1-6.* The assigned readings by Grant (2014), Bacon-Prue et al. (1980), and Powers et al. (1973) will provide examples of terms in *SLOs 7-12*, with the exception of hypothetical examples.

Interteach Group Discussion - SLOs 1-12 (G)
Students will be divided into groups of 2-4. Each group member will discuss their written responses to the interteach prep guide with their group members. Students will revise and refine their responses based on feedback from group members and the instructor.

Microtheme - SLOs 7-12 (I)
Each student will be randomly assigned one term from *SLOs 1-6*. Using this term as a prompt, they will be asked to describe a scenario in which an individual or group practice that relates to sustainability could be maintained by the specific consequence. Responses are limited to 50 words and must describe the critical features of each term and a sustainability-related behavior(s). Examples must not be identical to those in the assigned readings.

Assessment:
Interteach Prep Guide (SLOs 1-12)

Microtheme (SLOs 7-12)

Readings:

Conceptual

Grant, L. (2014) Insatiability: Part of the problem or part of the solution? *Behavior and Social Issues, 23*, 52-27. doi: 10.5210/bsi.v.23i0.5346

Experimental

Bacon-Prue, A., Blount, R., Pickering, R., & Drabman, R. (1980). An evaluation of three litter control procedures--trash receptacles, paid workers, and the marked item technique. *Journal of Applied Behavior Analysis, 13*(1), 165-170. doi: 10.1901/jaba.1980.13-165

Powers, R, B., Osborne, J. G., & Anderson, E. G. (1973). Positive reinforcement of litter removal in the natural environment. Journal of Applied Behavior Analysis, 6(4), 579-586. doi: 10.1901/jaba.1973.6-579

Suggested Introductory Text

Cooper, J., Heron, T., Heward, W. (2007). Glossary. In *Applied behavior analysis*. 2nd ed. (pp. 689 - 708) Upper Saddle River, NJ: Pearson.

BACB 5th Edition Task List Sub-Section: Measurement, Data Display, and Interpretation (C)

Course Units

Course:
Observation and Measurement (Research Methods)

BACB 5th Edition Task List Section:
Measurement, Data Display, and Interpretation (C)

General Learning Outcome (GLO):
Students will be able to establish operational definitions of behavior.

Task List Item:
C-1 Establish operational definitions of behavior.

Student Learning Outcomes (SLOs):
SLO 1
Students will identify topographical definitions of behavior.

SLO 2
Students will identify functional definitions of behavior.

SLO 3
Students will create examples of topographical definitions of behavior.

SLO 4
Students will create examples of functional definitions of behavior.

SLO 5
Students will be able to critique operational definitions of behavior.

Activities:
Homework - SLOs 1-2 (I)
Before coming to class, students will read the assigned readings. Students should also read the chapter(s) on establishing operational definitions of behavior from the selected observation and measurement (research methods) textbook.

Lecture - SLOs 1-5 (G)
The professor will provide brief introductory lecture that details the critical and variable features of operational definitions of behavior using examples and non-examples from the assigned readings and facilitate discussion.

In-class Activity - SLOs 3-4 (G)
Students will form groups of 2-4 and create an example of a topographical and a functional definition or a definition that is both topographical and functional of a behavior/practice that relates to sustainability. Students will explain how their definition is topographical, functional, or both.

Critique Paper - SLO 5 (I)
Students will write a three-page paper critiquing the operational definitions used in the assigned readings. Students will accurately identify the definitions used, provide a rationale

for why the behaviors measured were or were not well defined, and provide at least one revised definition.

Assessment:
In-class Activity (SLOs 3-4)

Critique Paper (SLOs 1, 2, & 5)

Readings:
Agras, W. S., Jacob, R. G., & Lebedeck, M. (1980). The California drought: A quasi-experimental analysis of social policy. *Journal of Applied Behavior Analysis, 13*(4), 561-570.

Fritz, J. N., Dupuis, D. L., Wu, W. L., Neal, A. E., Rettig, L. A., & Lastrapes, R. E. (2017). Evaluating increased effort for item disposal to improve recycling at a university. *Journal of Applied Behavior Analysis, 50*(4), 825-829. doi: 10.1002/jaba.405

Kohlenberg, R. & Phillips, T. (1973). Reinforcement and rate of litter depositing. *Journal of Applied Behavior Analysis, 6*, 391-396.

Schroeder, S. T., Hovell, M. F., Kolody, B., & Elder, J. P. (2004). Use of newsletters to promote environmental political action: An experimental analysis. *Journal of Applied Behavior Analysis, 37*(3), 427-9. doi: 10.1901/jaba.2004.37-427

Course:
Observation and Measurement (Research Methods)

BACB 5th Edition Task List Sub-Section:
Measurement, Data Display, and Interpretation (C)

General Learning Outcome (GLO):
Students will be able to distinguish among direct, indirect, and product measures of behavior.

Task List Item:
C-2 Distinguish among direct, indirect, and product measures of behavior.

Specific Learning Outcomes (SLOs):
SLO 1
Students will identify direct measures of behavior.

SLO 2
Students will identify indirect measures of behavior.

SLO 3
Students will identify product measures of behavior.

SLO 4
Students will distinguish among direct, indirect, and product measures of behavior.

SLO 5
Students will distinguish among examples of direct, indirect, and product measures of behavior.

SLO 6
Students will provide a novel example of a direct measure(s) of behavior for littering, recycling, energy consumption, or policy/systems/analyses.

SLO 7
Students will provide a novel example of an indirect measure(s) of behavior for littering, recycling, energy consumption, or policy/systems/analyses.

SLO 8
Students will provide a novel example of product measure(s) of behavior for littering, recycling, energy consumption, or policy/systems/analyses.

Activities:
Homework – SLOs 1-4 (I)
Before coming to class, students will read one of the clusters of reading categories (littering, recycling, energy consumption, or policy/systems/analyses). Students should also read the chapter(s) on direct, indirect, and product measures of behavior from the selected observation and measurement (research methods) textbook.

Reading Quiz - SLOs 1-4 (I)
At the beginning of class, students will complete a quiz about the assigned readings. The quiz will include fill-in-the-blank questions that require students to write/type the definitions of the direct, indirect, and product measures of behavior and ask the students to identify at least one example of each measure of behavior that was discussed in the assigned readings.

Group Project and Presentation - SLOs 5-8 (I & G)
Students will be split into groups based on the reading categories (littering, recycling, energy consumption, or policy/systems/analyses) that they selected to read. Students will identify the examples of direct, indirect, and product measures of behavior for their selected reading categories. Students will then develop novel examples of direct, indirect, and product measures of sustainability-related behavior(s). Students will turn in a list of the examples they found in the readings and give a brief presentation in which they share the examples they created.

Assessment:
Reading Quiz (SLOs 1-4)

Group Project and Presentation (SLOs 5-8)

Readings:

Littering

Chapman, C. & Risley, T. R. (1974). Anti-littering procedures in an urban high-density area. *Journal of Applied Behavior Analysis*, *7*(3), 377-383. doi: 10.1901/jaba.1974.7-377.

Clark, R. N., Burgess, R. L., & Hendee, J. C. (1972). The development of anti-litter behavior in a forest campground. *Journal of Applied Behavior Analysis*, *5*(1), 1-5. doi: 10.1901/jaba.1972.5-.

Recycling

Keller, J. J. (1991). The recycling solution: how I increased recycling on dilworth road. *Journal of Applied Behavior Analysis*, *24*(4), 617-619. 10.1901/jaba.1991.24-617

Miller, N. D., Meindl, J. N., & Caradine, M. (2016). The effects of bin proximity and visual prompts on recycling in a university building. *Behavior and Social Issues*, *25*, 4-10. doi: 10.5210/bsi.v.25i0.6141

Energy Consumption

Hake, D. F. & Zane, T. A. (1981). Community-based Gasoline Conservation Project: Practical and Methodological Considerations. *Behavior Modification*, *5*(4), 435-458.

Hirst, J. M., Miller, J. R., Kaplan, B. A., Reed, D. D. (2013). Watts Up? Pro AC Power Meter for Automated Energy Recording. *Behavior Analysis in Practice*, *6*(1), 82-95.

Schultz, N. R., Kohn, C. S., & Musto, A. (2017). Examination of a Multi-Element Intervention on College Students' Electricity Consumption in On-Campus Housing. *Behavioral Interventions*, *32*, 79-90.

Policy and Systems Analyses

Reed, D. D., Partington, S. W., Kaplan, B. A., Roma, P. G. & Hursh, S. R. (2013). Behavioral economic analysis of demand for fuel in North America. *Journal of Applied Behavior Analysis*, *46*(3), 651-655.

Schroeder, S. T., Hovell M. F., Kolody, B., & Elder, J. P. (2004). Use of newsletters to promote environmental political action: an experimental analysis. *Journal of Applied Behavior Analysis*, *37*(3), 427-429.

Course:
Observation & Measurement or Research Methods

BACB 5th Edition Task List Section:
Measurement, data display, and interpretation (C)

General Learning Outcome (GLO):
Students will be able to measure occurrence (e.g., frequency, rate, percentage).

Task List Item:
C-3 Measure occurrence.

Student Learning Outcomes (SLOs):
SLO 1
Students will measure a sustainability-related behavior(s) using count.

SLO 2
Students will measure a sustainability-related behavior(s) using rate (count over time).

SLO 3
Students will measure a sustainability-related behavior(s) using percentage.

Activities:
Homework - SLOs 1-3 (I)
Students will be prompted to read assigned experimental readings and complete the following data collection project:

Students will self-monitor (and take data on) the following responses across a 72-hour measurement period:

> 1) Count of personal use of disposable items (e.g., straws, plastic cutlery, plastic cups, paper towels, tissue, foil and plastic wrap, etc.).
> 2) Rate of the proper disposal of items (i.e., reused, recycled, thrown away, or littered).
> 3) Percentage of either reusable, recyclable, or single-use disposable/non-recyclable packaging for food items stored in the refrigerator and pantry at home *OR* the percentage of proper disposal of items after use (item 2).

Students will create their own data recording sheet and will also collect photo or video recordings of 30% of the occurences of the targeted behavior(s). Students will bring completed data and photo or video recordings to class for evaluation.

Class Data Collection Practice - SLOs 1-3 (G)
Students will pair off into dyads and present each other with their raw data.They will describe the operational definition of the behavior along with the dimensions and rationale for measuring the rate, count, or percentage. The dyads will exchange video or photo recordings of the target behavior and will collect inter-observer agreement data using their partner's data collection system.

Assessment:
Homework and Class Data Collection Practice (SLOs 1-3)

Assigned Readings:

O'Connor, R. T., Lerman, D. C., Fritz, J. N., & Hodde, H. B. (2010). Effects of number and location of bins on plastic recycling at a university. *Journal of Applied Behavior Analysis*, *43*(4), 711-715.

O'Neill, G. W., Blanck, L. S., & Joyner, M. A. (1980). The use of stimulus control over littering in a natural setting. *Journal of Applied Behavior Analysis, 13*(2), 379-381.

Course:
Observation and Measurement (Research Methods)

BACB 5th Edition Task List Section:
Measurement, Data Display, and Interpretation (C)

General Learning Outcome (GLO):
Students will be able to evaluate the reliability and validity of measurement procedures.

Task List Item:
C-8 Evaluate the validity and reliability of measurement procedures.

Student Learning Outcomes (SLOs):
SLO 1
Students will define reliability as it pertains to measurement procedures.

SLO 2
Students will define validity as it pertains to measurement procedures.

SLO 3
Students will identify the reliability of the measurement procedures used in the required readings.

SLO 4
Students will identify the validity of the measurement procedures used in the required readings.

SLO 5
Students will evaluate the strengths and weaknesses with respect to the reliability of the measurement procedures used in the required readings.

SLO 6
Students will evaluate the strengths and weaknesses with respect to the validity of the measurement procedures used in the required readings.

Activities:
Homework - SLOs 1-4 (I)
Before coming to class, students will read the assigned readings. Students should also read the chapter(s) on validity and reliability of measurement procedures from the selected observation and measurement (research methods) textbook.

In-class Interteach - SLOs 1-4 (G)
In the beginning of class, students will form dyads to discuss their responses to the interteach prep guide. While in their dyads, students will discuss the validity and reliability of the measurement procedures used in the required readings. Students will create a brief presentation in which they identify the measurement procedures used in the required readings, how the validity and reliability of the measurement procedures was assessed, and describe the strengths and weaknesses of each measure. Following the discussion, if there are

any remaining questions, the instructor will provide a brief clarifying lecture during or following the interteach activity.

Critique Paper - SLOs 5-6 (I)
Students will write a 1-2 page paper critiquing the validity and reliability of the measurement procedures used in one of the required readings. Students will identify the measurement procedures used in the required readings, how the validity and reliability of the measurement procedures was assessed, and describe the strengths and weaknesses of each measure. Students will offer an alternative measurement procedure when appropriate or describe why the validity and reliability measures were appropriate.

Assessment:
Interteach Prep Guide (SLOs 1-4)

Critique Paper (SLOs 5-6)

Readings:
Foxx, R. M. & Hake, D. F. (1976). Gasoline conservation: a procedure for measuring and reducing the driving of college students. *Journal of Applied Behavior Analysis, 10*(1), 61-74.

Fritz, J. N., Dupuis, D. L., Wu, W. L., Neal, A. E., Rettig, L. A., & Lastrapes, R. E. (2017). Evaluating increased effort for item disposal to improve recycling at a university. *Journal of Applied Behavior Analysis, 50*(4), 825-829. doi: 10.1002/jaba.405.

Hirst, J. M., Miller, J. R., Kaplan, B. A., & Reed, D. D. (2013). Watts Up? Pro AC Power Meter for automated energy recording. *Behavior Analysis in Practice, 6*(1), 82-95. doi: 10.1007/BF03391795

Course: *This course unit is designed with the idea of being a culminating project/capstone assignment for an* ***Observation & Measurement*** *or a* ***Research Methods*** *course.*

BACB 5th Edition Task List Section:
Measurement, Data Display, and Interpretation (C)

General Learning Outcome (GLO) 1:
Students will be able to select and discuss measurement systems that obtain representative data given the dimensions of the behavior.

General Learning Outcome (GLO) 2:
Students will be able to identify and discuss the logistics of observing and recording behavioral data.

Task List Item:
C-9 Select a measurement system to obtain representative data given the dimensions of behavior and logistics of observing and recording.

Student Learning Outcomes (SLOs):
SLO 1
Students will state which dimension(s) of the sustainability related behavior(s) are captured by using continuous and discontinuous measurement systems.

SLO 2
Students will describe alternative measurement systems that may capture more relevant dimensions of the dependent variable than the measurement systems discussed in this course unit.

SLO 3
Students will identify the logistics of observing and recording sustainability-related behavior(s).

SLO 4
Students will discuss the logistics of observing and recording sustainability-related behavior(s).

SLO 5
Students will describe how the data collected are or are not representative of the sustainability-related behavior(s) captured by the data.

Activities:
Homework - SLOs 1-5 (G)
The class will be divided into groups among the five assigned readings. Drawing from their assigned reading, each group will create a presentation before coming to class. The presentation must include a) a brief overview of the sustainability-related problem (must include statement of the problem, description of the setting, and description of participants), b) the operational definition of the dependent variable, c) the measurable dimensions of the dependent variable (e.g., frequency, magnitude, topography, etc.), d) data collection

procedures, e) rationale for selection of participants and data recording and collection procedures, and f) a discussion of the representativeness of the data set to the actual phenomena (e.g. validity, reliability, and interobserver agreement procedures including alternative measurement systems that may capture more relevant dimensions of the dependent variable). Groups will create guided notes to accompany each presentation. Guided notes must include opportunities to respond to fill-in-blank or open ended questions regarding all the relevant aforementioned information drawn from the readings.

Class Presentation - SLOs 1-5 (G)
Students will be grouped by assigned readings and will present the findings from their homework assignments (10 min). Fellow classmates will record the relevant information drawn from each presentation using the guided notes provided by the presenters. Opportunities for questions and discussion will be provided following each presentation (5 min).

Assessment:
Guided Notes (SLOs 1-5)

Class Presentation (SLOs 1-5)

Assigned Readings:
Foxx, R. M. & Hake, D. F. (1976). Gasoline conservation: a procedure for measuring and reducing the driving of college students. *Journal of Applied Behavior Analysis, 10*(1), 61-74.

Hirst, J. M., Miller, J. R., Kaplan, B.A., Reed, D. D. (2013). Watts Up? Pro AC Power Meter for Automated Energy Recording. *Behavior Analysis in Practice, 6*(1), 82-95

Kohlenberg, R., Phillips, T., & Proctor, W. (1976). A behavioral analysis of peaking in residential electrical-energy consumers. *Journal of Applied Behavior Analysis, 9*(1), 13-18.

O'Neill, G. W., Blanck, L. S., & Joyner, M. A. (1980). The use of stimulus control over littering in a natural setting. *Journal of Applied Behavior Analysis, 13*(2), 379-381.

Van Houten, R. Nau, P. A., & Merrigan, M. (1981). Reducing elevator energy use: A comparison of posted feedback and reduced elevator convenience. *Journal of Applied Behavior Analysis, 14,* 377-387.

Course:
Observation and Measurement (Research Methods)

BACB 5th Edition Task List Section:
Measurement, Data Display, and Interpretation (C)

General Learning Outcome (GLO):
Students will be able to interpret graphed data.

Task List Item:
C-11 Interpret graphed data.

Student Learning Outcomes (SLOs):
SLO 1
Students will identify basic elements of a graph (x-axis, y-axis, labels, and phase change lines).

SLO 2
Students will define level, range, trend, and variability.

SLO 3
Students will describe the characteristics of graphed data (level, range, trend, and variability) from the assigned readings.

SLO 4
Students will graph raw data.

Activities:
Homework - SLOs 1-3 (I)
Before coming to class, students will read the assigned reading. Students should also read the chapter(s) on describing and interpreting graphed data from the selected observation and measurement (research methods) textbook.

Reading Quiz - SLOs 1-3 (I)
At the beginning of class, students will complete a quiz about the assigned readings. The quiz should include questions that ask students to identify basic elements of a graph (x-axis, y-axis, labels, and phase change lines) and define level, range, trend, and variability. The quiz should also include the graphed data from Chapman and Risley (1974). Students will draft a brief description (e.g., figure caption or results summary) of the characteristics of the data (level, range, trend, and variability) shown on this sample graph.

In-class Activity - SLOs 3-4 (G)
Students will work in groups to graph raw data (provided by the instructor). Once the data are graphed, students will draft a brief description (e.g., figure caption or results summary) of the characteristics of the data (level, range, trend, and variability).

Assessment:
Reading Quiz (SLOs 1-3)

In-Class Activity (SLOs 3-4)

Readings:

Required Readings

Chapman, C. & Risley, T. R. (1974). Anti-littering procedures in an urban high-density area. *Journal of Applied Behavior Analysis, 7*(3), 377-383. doi: 10.1901/jaba.1974.7-377.

Recommended Readings

Desrochers, M. N. & Mosher, H. (2015). Evaluation of an informational and behavior change program to increase students' self-reported energy conservation. *Behavioral Interventions*, *32*, 225-233. doi: 10.1002/bin.1482.

Hayes, S. C. & Cone, J. D. (1977). Reducing residential electrical energy use: payments, information, and feedback. *Journal of Applied Behavior Analysis*, *10*(3), 425-435.

Miller, N. D., Meindl, J. N., & Caradine, M. (2016). The effects of bin proximity and visual prompts on recycling in a university building. *Behavior and Social Issues*, *25*, 4-10. doi: 10.5210/bsi.v.25i0.6141.

O'Connor, R. T., Lerman, D. C., Fritz, J. N. & Hodde, H. B. (2010). Effects of number and location of bins on plastic recycling at a university. *Journal of Applied Behavior Analysis*, *43*(4), 711-715.

BACB 5th Edition Task List Sub-Section: Experimental Design (D)

Course Units

Course:
Observation & Measurement or Research Methods

BACB 5th Edition Task List Sub-Section:
Experimental Design (D)

General Learning Outcome (GLO):
Students will be able to distinguish between dependent and independent variables.

Task List Item:
D-1 Distinguish between dependent and independent variables.

Specific Learning Outcomes (SLOs):
SLO 1
Students will be able to define dependent variable.

SLO 2
Students will be able to define independent variable.

SLO 3
Students will be able to identify dependent and independent variables from the recommended readings (students choose three).

SLO 4
Students will be able to develop their own dependent and independent variables with respect to sustainability-related behavior(s).

Activities:
Homework - SLOs 1-3 (I)
Before coming to class, students will read three readings from the list and identify the dependent and independent variables from their chosen readings. Students will turn in a notecard with definitions of independent and dependent variable, the independent and dependent variables from the readings, and their references.

In-Class Discussion and Presentations - SLO 4 (G)
Students will break into groups of 2-4 and draft their own examples of dependent and independent variables that pertain to sustainability-related behavior(s). The groups will take turns presenting their examples to the whole class toward the end of the class period.

Assessment:
Notecard (SLOs 1-3)

In-Class Discussion and Presentations (*SLO 4)*

Readings:

Energy Consumption

Hayes, S. C., & Cone, J. D. (1981). Reduction of residential consumption of electricity through simple monthly feedback. *Journal of Applied Behavior Analysis, 14*(1), 81-88.

Hayes, S. C., & Cone, J. D. (1977). Reducing residential electrical energy use: payments, information, and feedback. *Journal of Applied Behavior Analysis, 10*(3), 425-435.

Jacobs, H. E., Bailey, J. S., & Crews, J. I. (1984). Development and analysis of a community-based resource recovery program. *Journal of Applied Behavior Analysis*, *17*, 127-145.

Kohlenberg, R., Phillips, T., & Proctor, W. (1976). A behavioral analysis of peaking in residential electrical-energy consumers. *Journal of Applied Behavior Analysis, 9*(1), 13-18.

Luyben, P. D. (1980). Effects of informational prompts on energy conservation in college classrooms. *Journal of Applied Behavior Analysis, 13,* 611-617.

Palmer, M. H., Lloyd, M. E., & Lloyd, K. E. (1977). An experimental analysis of electricity conservation procedures. *Journal of Applied Behavior Analysis, 10*(4) 665-671.

Winett, R. A., Neale, M. S., & Grier, H. C. (1979). Effects of self-monitoring and feedback on residential electricity consumption. *Journal of Applied Behavior Analysis*, *12*(2), 173-184.

Policy and Systems Analyses

Schroeder, S. T., Hovell, M. F., Kolody, B., & Elder, J. P. (2004). Use of newsletters to promote environmental political action: An experimental analysis. *Journal of Applied Behavior Analysis*, *37*(3), 427-9. doi: 10.1901/jaba.2004.37-427

Recycling

Austin, J., Hatfield, D. B., Grindle, A. C., & Bailey, J. S. (1993). Increasing recycling in office environments: The effects of specific informative cues. *Journal of Applied Behavior Analysis, 26*(2), 247-253. doi: 10.1901/jaba.1993.26-247

Miller, N. D., Meindl, J. N., & Caradine, M. (2016). The effects of bin proximity and visual prompts on recycling in a university building. *Behavior and Social Issues*, *25*, 4-10. doi: 10.5210/bsi.v.25i0.6141

Course: *This course unit is designed with the idea of being a culminating project/capstone assignment for an* ***Observation & Measurement*** *or a* ***Research Methods*** *course.*

BACB 5th Edition Task List Sub-Section:
Experimental Design (D)

General Learning Outcome (GLO):
Students will be able to use single-subject experimental designs.

Task List Item:
D-5 Use single-subject experimental designs (e.g., reversal, multiple-baseline, multielement, changing criterion).

Specific Learning Outcomes (SLOs):
SLO 1
Students will list the common types of single-subject experimental designs (e.g., reversal, multiple-baseline, multi-element, changing criterion).

SLO 2
Students will state all of the specific features of each of the commonly used single-subject experimental designs (e.g., multi-baseline can be across individuals, settings, and behaviors).

SLO 3
Students will identify the experimental control features (replication, prediction, and verification) for each of the commonly used single-subject designs.

SLO 4
Students will develop a research proposal that includes one (or a combination of e.g., multiple baseline design with an embedded changing criterion) of the single-subject experimental designs to increase or decrease a sustainability-related behavior(s).

Activities:
Homework - SLOs 1-3 (I)
Before coming to class, students will read the assigned reading. Students should also read the chapter(s) on single-subject experimental designs and their usage from the selected observation and measurement (research methods) textbook.

Reading Quiz - SLOs 1-3 (I)
The quiz should include questions on: the common types of single-subject experimental designs, the specific features of the designs, and the experimental control features of the designs. The quiz will also include a vast array of graphs (some included from the required readings) from which the students should be asked to determine if replication, verification, and prediction have been demonstrated or not.

Research Proposal - SLO 4
Over the course of the semester, students will develop a research proposal including one (or a combination of e.g., multiple baseline design with an embedded changing criterion) of the single-subject experimental designs covered over the course of the semester to increase or

decrease a sustainability-related behavior(s).The research proposal should include a brief rationale and a fully developed method section with particular attention toward the selected experimental design and the experimental logic.

Assessment:
Reading Quiz (SLOs 1-3)

Research Proposal (SLO 4)

Readings:

Required Readings

Agras, W. S., Jacob, R. G., & Lebedeck, M. (1980). The California drought: a quasi-experimental analysis of social policy. *Journal of Applied Behavior Analysis*, *13*(4), 561-570.

- Multiple-baseline

Luyben, P. D. (1980). Effects of informational prompts on energy conservation in college classrooms. *Journal of Applied Behavior Analysis, 13*, 611-617.

- Multiple-baseline

Van Houten, R. Nau, P. A., & Merrigan, M. (1981). Reducing elevator energy use: A comparison of posted feedback and reduced elevator convenience. *Journal of Applied Behavior Analysis, 14*, 377-387.

- Multiple-baseline

Recommended Readings

D. F., Hake, & R. M., Foxx (1978). Promoting gasoline conservation: The effects of reinforcement schedule, a leader, and self-recording. *Behavior Modification, 2*(3), 339-370.

- Reversal

Hayes, S. C. & Cone, J. D. (1977). Reducing residential electrical energy use: payments, information, and feedback. *Journal of Applied Behavior Analysis, 10*(3), 425-435.

- Multiple-baseline

BACB 5th Edition Task List Sub-Section: Behavior Assessment (F)

Course Units

Course:
Observation and Measurement (Research Methods) or Ethics

BACB 5th Edition Task List Section:
Behavior Assessment (F)

General Learning Outcome (GLO):
Students will be able to determine the need for behavior analytic services.

Task List Item:
F-2 Determine the need for behavior analytic services.

Student Learning Outcomes (SLOs):
SLO 1
Students will collect and graph data.

SLO 2
Students will identify the need for behavior analytic services based on baseline data.

SLO 3
Students will write a rationale, defending the need for behavior analytic services.

SLO 4
Students will defend their rationale to a group of their peers.

Activities:
Homework - SLOs 1-3 (I)
Before coming to class, students will read both experimental articles and at least two of the theoretical articles. Students will also bring a graph of the last three months of their electricity, water, and/or gas usage.

In-class Activity - SLOs 1-3 (I)
In class, students will graph their baseline data and prepare a brief presentation. Students will write a brief (no more than one page) rationale defending the need for behavior analytic services. The rationale should be informed by some of the readings demonstrating why their energy usage requires a behavior analytic intervention. Students should use the readings as a basis for their rationale.

In-Class Presentation - SLO 4 (I)
Students will be chosen at random, to present their data to the class. In their presentation, students should provide their rationale and verbally defend the need for behavior analytic services to address their energy usage. Students will evaluate each other on how well they demonstrated a need for services, defended their rationale, and presented their information in a professional manner.

Assessment:
In-class Activity (SLOs 1-3)

In-class Presentation (SLO 4)

Readings:

Experimental Readings

Bekker, M. J., Osborne, N. K., Bruining, A. M., McClean, J. I., & Leland, L. S. (2010). Encouraging electricity savings in a university residential hall through a combination of feedback, visual prompts, and incentives. *Journal of Applied Behavior Analysis, 43*(2), 327-331. doi: 10.1901/jaba.2010.43-327.

Bittle, R. G., Valesano, R., & Thaler, G. (1979). The effects of daily cost feedback on residential electricity consumption. *Behavior Modification, 3*(2), 187-202. doi: https://doi.org/10.1177/014544557932004

Theoretical Readings

Alavosius, M., & Mattaini, M. A. (2011). Editorial: Behavior analysis, sustainability, resilience, and adaptation. *Behavior and Social Issues, 20,* 1-5. doi:10.5210/bsi.v20i0.3782

Chance, P., & Heward, W. L. (2010). Climate change: Meeting the challenge. *The Behavior Analyst, 33*(2), 197-206.

Grant, L. K. (2011). Can we consume our way out of climate change? A call for analysis. *The Behavior Analyst, 34*(2), 245-266.

Heward, W. L., & Chance, P. (2010). Introduction: Dealing with what it is. *The Behavior Analyst, 33*(2), 145-151. doi: 10.1007/BF03392210

Todorov, J. C. (2010). On global warming and local indifference: Behavioral analysis of what persons can do about their own near environment. *Behavior and Social Issues, 19,* 48-52. *doi: 10.5210/bsi.v19i0.3223*

Course:
Applied Behavior Analysis, Behavioral Interventions, or Behavioral Assessment

BACB 5th Edition Task List Sub-Section:
Behavior Assessment (F)

General Learning Outcome (GLO):
Students will be able to identify and prioritize socially-significant behavior change goals.

Task List Item:
F-3 Identify and prioritize socially-significant behavior change goals.

Specific Learning Outcomes (SLOs):
SLO 1
Students will be able to define social significance.

SLO 2
Students will be able to describe social significance.

SLO 3
Students will identify socially-significant behaviors from the assigned readings (choose three readings).

SLO 4
Students will organize the list of socially-significant behaviors in terms of priority with an accompanying justification and rationale for this ordering.

SLO 5
Students will be able to identify socially-significant behavior change goals pertaining to their own sustainability-related behavior(s).

SLO 6
Students will be able to prioritize socially-significant behavior change goals pertaining to their own sustainability-related behavior(s).

Activities:
Homework - SLOs 1-4 (I)
Before coming to class, students will read Wolf (1978), three readings from the recommended readings, and identify the behavior-change goals from their chosen readings. Students will turn in a brief one-page paper that includes the definition of social significance, the prioritized list of socially significant behavior-change goals from their selected readings, a rationale for presenting the behavior-change goals in this order, and their references.

In-Class Activity - SLOs 5-6 (I & G)
Students will independently identify their own sustainability-related behavior(s) change goals in order of priority with respect to their social significance. Then the students will break into groups of 2-4 to discuss their behavior-change goals and give each other feedback. The students will write a one-page reflection paper describing their sustainability-related

behavior(s) change goals, rationale of their prioritization, and feedback from their group discussion.

Paper - SLOs 1-6 (I)
Students will turn in a paper that includes the required homework and in-class activity reflection.

Assessment:
Paper (SLOs 1-6)

Readings:

Required Readings

Wolf, (1978). Social validity: the case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis, 11*(2), 203-214.

Recommended Readings

Climate Change

Chance, P., & Heward, W. L. (2010). Climate change: meeting the challenge. *The Behavior Analyst*, *33*(2), 197-206.

Grant, L. K. (2011). Can we consume our way out of climate change? A call for analysis. *The Behavior Analyst*, *34*(2), 245-66.

Thompson, L. G. (2010). Climate change: the evidence and our options. *The Behavior Analyst*, *33*(2), 153-70.

Heward, W. L., & Chance, P. (2010). Introduction: dealing with what is. *The Behavior Analyst*, *33*(2), 145-51.

Energy Consumption

Grant, L. (2007). Peak oil as a behavioral problem. *Behavior and Social Issues*, *16*, 65-88.

Hake, D. F. & Zane, T. A. (1981). Community-based gasoline conservation project: Practical and methodological considerations. *Behavior Modification*, *5*(4), 435-458.

Hayes, S. C. & Cone, J. D. (1981). Reduction of residential consumption of electricity through simple monthly feedback. *Journal of Applied Behavior Analysis, 14*(1), 81-88.

Environmental Protection

Johnson, R. P., & Geller, E. S. (1980). Engineering technology and behavior analysis for interdisciplinary environmental protection. *The Behavior Analyst*, *3*(1), 23-29.

Policy and Systems Analyses

Leeming, E., Hansen, D., Alavosius, M., & Reimer, D. (2013). Sustainability in the field:

Lake Tahoe hospitality and environmental protection. *Behavior and Social Issues*, *22*, 21-39.

BACB 5th Edition Task List Sub-Section: Behavior Change Procedures (G)

Course Units

G-1 - 3

This course is designed as a combination of G-1-3 as a cumulative project starting with G3.

G-3 Establish and use conditioned reinforcers.
G-2 Use interventions based on motivating operations and discriminative stimuli.
G-1 Use positive and negative reinforcement to strengthen behavior.

Course:
Practicum, Internship, Thesis, or Project-based Course

Phase I
BACB 5th Edition Task List Sub-Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to establish and use conditioned reinforcers.

Task List Item:
G-3 Establish and use conditioned reinforcers.

Specific Learning Outcomes (SLOs):
SLO 1
Students will be able to describe the conditioned reinforcers used in the assigned readings (choose three).

SLO 2
Students will establish conditioned reinforcers for sustainability-related behavior-change goals.

SLO 3
Students will use conditioned reinforcers contingent upon sustainability-related behavior(s).

Activities:
Homework - SLO 1 (I)
Before starting the project, students will read three readings from the recommended readings list.

Vocal Checkout - SLO 1 (I)
Each student will complete a brief vocal checkout with the course instructor. In the vocal checkout the instructor will ask the student to describe the conditioned reinforcers used in their selected readings.

Individual Project- SLOs 2-3 (I)
Students will identify sustainability-related behavior-change goals within their area of interest, establish conditioned reinforcers, and apply them contingently upon identified sustainability-related behavior(s). Students will collect raw data, appropriately graph the data, write a report of their procedures, and write a two-page reflection paper of their experience (including how they established the stimulus as a conditioned reinforcer), the effect on the

behavior, what they learned, and what they would do differently in a future iteration of their project.

Assessment:
Vocal Checkout (SLO 1)

Individual Project (*SLOs 2-3)*

Readings:

Environmental Protection

Geller, S. E. (1989) Applied behavior analysis and social marketing: An integration for environmental preservation. *Journal of Social Issues*, *45*, 17-36. doi: 10.1111/j.1540-4560.1989.tb01531.x

Lehman, P. K. & Geller, E. S. (2004). Behavior analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues*, *13*, 13-32.

Littering

Burgess, R. L, Clark, R. N., & Hendee, J. C. (1971). An experimental analysis of anti-litter procedures. *Journal of Applied Behavior Analysis, 4(*2), 71-75. doi: 10.1901/jaba.1971.4-71

Clark, R. N., Burgess, R. L., & Hendee, J. C. (1972). The development of anti-litter behavior in a forest campground. *Journal of Applied Behavior Analysis, 5*(1), 1-5. doi: 10.1901/jaba.1972.5-1

Hayes, S. C., Johnson, S., & Cone, J. D. (1975). The marked item technique: A practical procedure for litter control. *Journal of Applied Behavior Analysis*, *8*(4), 381-386. doi: 10.1901/jaba.1975.8-381

Kohlenberg, R. & Phillips, T. (1973). Reinforcement and rate of litter depositing. *Journal of Applied Behavior Analysis, 6,* 391-396.

O'Neill, G. W., Blanck, L. S., & Joyner, M. A. (1980). The use of stimulus control over littering in a natural setting. *Journal of Applied Behavior Analysis*, *13*(2), 379-381. doi: 10.1901/jaba.1980.13-379

Powers, R, B., Osborne, J. G., & Anderson, E. G. (1973). Positive reinforcement of litter removal in the natural environment. *Journal of Applied Behavior Analysis*, *6*(4), 579-586. doi: 10.1901/jaba.1973.6-579

Policy and Systems Analyses

Alavosius, M., & Newsome, W. (2012). Cooperatives, green behavior, and environmental protection. *Revista Latinoamericana de Psicologia*, *44*, 77-85.

Phase II

BACB 5th Edition Task List Sub-Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use interventions based on motivating operations and discriminative stimuli.

Task List Item:
G-2 Use interventions based on motivating operations and discriminative stimuli.

Specific Learning Outcomes (SLO):
SLO 1
Students will define motivating operations.

SLO 2
Students will define discriminative stimuli

SLO 3
Students will describe the motivating operations and discriminative stimuli used in the assigned readings (choose three).

SLO 4
Students will develop interventions using motivating operations and discriminative stimuli on the sustainability-related behavior-change goals used in G3.

SLO 5
Students will implement the interventions using motivating operations and discriminative stimuli on the sustainability-related behavior-change goals used in G3.

Activities:
Homework - SLO 3 (I)
Before starting the project, students will read three readings from the recommended readings list.

Vocal Checkout - SLOs 1-3 (I)
Each student will complete a brief vocal checkout with the course instructor. In the vocal checkout the instructor will ask the student to define motivating operations and to describe at least one of the motivating operations and a discriminative stimulus arranged from the readings.

Individual Project - SLO 4-5 (I)
Students will establish motivating operations and discriminative stimuli for the sustainability-related behavior(s) targeted in G3. Students will collect raw data, appropriately graph the data, write a report of the procedures used, and write a two-page reflection paper of their experience, the effect on the behaviors of interest, what they learned, and what they would do differently in a future iteration of their project.

Assessment:

Vocal Checkout (SLOs 1-3)

Individual Project (*SLOs 4-5)*

Readings:

Energy Consumption

Bekker, M. J., Cumming, T. D., Osborne, N. K., Bruining, A. M., McClean, J. I., & Leland, L. S. (2010). Encouraging electricity savings in a university residential hall through a combination of feedback, visual prompts, and incentives. *Journal of Applied Behavior Analysis*, *43*(2), 327-31.

Jacobs, H. E., Bailey, J. S., Crews, J. I. (1984). Development and analysis of a community-based resource recovery program. *Journal of Applied Behavior Analysis*, *17*, 127-145.

Winett, R. A., Hatcher, J. W., Fort, T. R., Leckliter, I. N., Love, S. Q., Riley, A. W., & Fishback, J. F. (1982). The effects of videotape modeling and daily feedback on residential electricity conservation, home temperature and humidity, perceived comfort, and clothing worn: Winter and summer. *Journal of Applied Behavior Analysis*, *15*(3), 381-402.

Environmental Protection

Lehman, P. K. & Geller, E. S. (2004). Behavior analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues*, *13*, 13-32.

Littering

Burgess, R. L, Clark, R. N., & Hendee, J. C. (1971). An experimental analysis of anti-litter procedures. *Journal of Applied Behavior Analysis, 4*(2), 71-75. doi:https://doi.org/10.1901/jaba.1971.4-71

Kohlenberg, R. & Phillips, T. (1973). Reinforcement and rate of litter depositing. *Journal of Applied Behavior Analysis, 6*, 391-396.

O'Neill, G. W., Blanck, L. S., & Joyner, M. A. (1980). The use of stimulus control over littering in a natural setting. *Journal of Applied Behavior Analysis*, *13*(2), 379-381. doi: 10.1901/jaba.1980.13-379

Powers, R, B., Osborne, J. G., & Anderson, E. G. (1973). Positive reinforcement of litter removal in the natural environment. *Journal of Applied Behavior Analysis*, *6*(4), 579-586. doi: 10.1901/jaba.1973.6-579

Policy and Systems Analyses

Camargo, J., & Haydu, V. (2016). Fostering the sustainable use of common-pool resources through behavioral interventions: An experimental approach. *Behavior and Social Issues*, *25*, 61-76. doi: 10.5210/bsi.v.25i0.6328

Foxall, G. R., Oliviera Castro, J. M., & James, V. K. (2006). Consumer behavior

analysis and social marketing: The case of environmental conservation. *Behavior and Social Issues*, *15*, 101-124. doi: 10.5210/bsi.v15i1.338

Hirsh, J., Costello, M., & Fuqua, R. W. (2015). Analysis of delay discounting as a psychological measure of sustainable behavior. *Behavior and Social Issues*, *24*, 187-202. doi: 10.5210/bsi.v.24i0.5906

Leeming, E., Hansen, D., Alavosius, M., & Reimer, D. (2013). Sustainability in the field: Lake Tahoe hospitality and environmental protection. *Behavior and Social Issues*, *22*, 21-39.

Newsome, W., & Alavosius, M. P. (2011). Toward the prediction and influence of environmentally relevant behavior: Seeking practical utility in research. *Behavior and Social Issues*, *20*, 44-71. doi: 10.5210/bsi.v20i0.3234

Recycling

Keller, J. J. (1991). The recycling solution: How I increased recycling on Dilworth Road. *Journal of Applied Behavior Analysis*, 24(4), 617-619.

Ludwig, T., Gray, T., & Rowell, A. (1998). Increasing recycling in academic buildings: A systematic replication. *Journal of Applied Behavior Analysis*, *31*(4), 683–686.

Miller, N., Mindl, J., & Caradine, M. (2016). The effects of bin proximity and visual prompts on recycling in a university building. *Behavior and Social Issues*, *25*, 4-10. doi: 10.5210/bsi.v.25i0.6141

Witmer, J. F., & Geller, E. S. (1976). Facilitating paper recycling: effects of prompts, raffles, and contests. *Journal of Applied Behavior Analysis*, *9*(3), 315-22.

Waste Reduction

Manuel, J. C., Sunseri, M. A., Olson, R., & Scolari, M. (2007). A diagnostic approach to increase reusable dinnerware selection in a cafeteria. *Journal of Applied Behavior Analysis*, *40*, 301-310.

Phase III

BACB 5th Edition Task List Sub-Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use positive and negative reinforcement to strengthen behavior.

Task List Item:
G-1 Use positive and negative reinforcement to strengthen behavior.

Specific Learning Outcomes (SLOs):
SLO 1

Students will describe positive and negative reinforcement procedures implemented in the assigned readings (choose three readings).

SLO 2
Students will develop novel positive and negative reinforcement-based interventions to strengthen the sustainability-related behavior(s) targeted in G3-G2.

SLO 3
Students will implement the positive and negative reinforcement-based interventions to strengthen sustainability-related behavior(s) used in G3-G2.

Activities:
Homework - SLO 1 (I)
Before starting the project, students will read three readings from the recommended readings list.

Vocal Checkout - SLOs 1-2 (I)
Each student will complete a brief vocal checkout with the course instructor. In the vocal checkout the instructor will ask the student to describe the positive and negative reinforcement-based interventions employed to increase sustainability-related behavior(s) in the readings.

Individual Project - SLOs 2-3 (I)
Students will identify sustainability-related behavior-change goals within their area of interest, develop positive and negative reinforcement-based interventions to strengthen the identified sustainability-related behavior(s), and implement the procedures with the sustainability-related behavior(s). Students will collect raw data, appropriately graph the data, write a report of their procedures, describe the behavior change, and write a two-page reflection paper of their experience, what they learned, and what they would do differently in a future iteration of their project.

Assessment:
Vocal Checkout (SLO 1)

Individual Project (*SLOs 2-3)*

Readings:

Energy Consumption

Bekker, M. J., Cumming, T. D., Osborne, N. K., Bruining, A. M., McClean, J. I., & Leland, L. S. (2010). Encouraging electricity savings in a university residential hall through a combination of feedback, visual prompts, and incentives. *Journal of Applied Behavior Analysis*, *43*(2), 327-31.

Littering

Burgess, R. L, Clark, R. N., & Hendee, J. C. (1971). An experimental analysis of anti-litter procedures. *Journal of Applied Behavior Analysis, 4*(2), 71-75. doi: 10.1901/jaba.1971.4-71

Clark, R. N., Burgess, R. L., & Hendee, J. C. (1972). The development of anti-litter behavior in a forest campground. *Journal of Applied Behavior Analysis, 5*(1), 1-5. doi: 10.1901/jaba.1972.5-1

Kohlenberg, R. & Phillips, T. (1973). Reinforcement and rate of litter depositing. *Journal of Applied Behavior Analysis*, *6*, 391-396.

Powers, R, B., Osborne, J. G., & Anderson, E. G. (1973). Positive reinforcement of litter removal in the natural environment. *Journal of Applied Behavior Analysis*, *6*(4), 579-586. doi: 10.1901/jaba.1973.6-579

Hayes, S. C., Johnson, S., & Cone, J. D. (1975). The marked item technique: A practical procedure for litter control. *Journal of Applied Behavior Analysis, 8*(4), 381-386. doi: 10.1901/jaba.1975.8-381

Policy and Systems Analyses

Camargo, J., & Haydu, V. (2016). Fostering the sustainable use of common-pool resources through behavioral interventions: An experimental approach. *Behavior and Social Issues*, *25*, 61-76. doi: 10.5210/bsi.v.25i0.6328

Foxall, G. R., Oliviera Castro, J. M., & James, V. K. (2006). Consumer behavior analysis and social marketing: The case of environmental conservation. *Behavior and Social Issues*, *15*, 101-124. doi: 10.5210/bsi.v15i1.338

Newsome, W., & Alavosius, M. P. (2011). Toward the prediction and influence of environmentally relevant behavior: Seeking practical utility in research. *Behavior and Social Issues*, *20*, 44-71. doi: 10.5210/bsi.v20i0.3234

Recycling

Keller, J. J. (1991). The recycling solution: How I increased recycling on Dilworth Road. *Journal of Applied Behavior Analysis*, 24(4), 617-619.

Witmer, J. F., & Geller, E. S. (1976). Facilitating paper recycling: effects of prompts, raffles, and contests. *Journal of Applied Behavior Analysis*, *9*(3), 315-22.

This course unit was created for a group project.

Course:
Practicum or Project-based Course

BACB 5th Edition Task List Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use stimulus and response prompt fading (e.g., errorless, most-to-least, least-to-most, prompt delay, stimulus fading).

Task List Item:
G-4 Use stimulus and response prompt fading (e.g., errorless, most-to-least, least-to-most, prompt delay, stimulus fading).

Student Learning Outcomes (SLOs):
All
SLO 1
Students will describe stimulus fading procedures.

SLO 2
Students will describe response prompt procedures (most-to-least).

SLO 3
Students will describe response prompt procedures (least-to-most).

SLO 4
Students will describe response prompt procedures (prompt delay).

Students will break up into four groups. Each group will be assigned either stimulus fading, or a response prompt procedure.

Group 1
SLO 5
Students will create an intervention using stimulus fading procedures (errorless).

SLO 6
Students will implement an intervention using stimulus fading procedures (errorless).

Group 2
SLO 7
Students will create an intervention using response prompt procedures (most-to-least).

SLO 8
Students will implement an intervention using response prompt procedures (most-to-least).

Group 3

SLO 9
Students will create an intervention using response prompt procedures (least-to-most).

SLO 10
Students will implement an intervention using response prompt procedures (least-to-most).

Group 4
SLO 11
Students will create an intervention using response prompt procedures (prompt delay).

SLO 12
Students will implement an intervention using response prompt procedures (prompt delay).

Activities:
Homework - SLOs 1-4 (I)
Before starting the project, students will read at least four of the readings from the recommended readings list. Students should also read the chapter(s) on prompting and stimulus fading from the selected introduction to behavior analysis textbook.

Paper - SLOs 1-4 (I)
Students will describe each response prompting and stimulus fading procedure in a two-page paper.

Group Project - SLOs 5-12 (G)
In groups, students will identify a target sustainability-related behavior(s) (i.e., recycling, energy consumption, littering, waste reduction, etc.), create an intervention that uses stimulus fading and response prompt procedures, and implement the intervention. Students should complete a write-up detailing the procedures and results of their intervention.

Assessment:
Paper (SLOs 1-4)

Group Project (SLOs 5-12)

Readings:
Brothers, K. J. (1994). Office paper recycling: A function of container proximity. *Journal of Applied Behavior Analysis, 27*(1), 153-160.

Clayton, M., & Nesnidol, S. (2017). Reducing electricity use on campus: The use of prompts, feedback, and goal setting to decrease excessive classroom lighting. *Journal of Organizational Behavior Management, 37*(2), 196-202. doi: https://doi.org/10.1080/01608061.2017.1325823

Lehman, P. K., & Geller, E. S. (2004). Behavior analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues, 13*, 13-32.

Pandey, N., Diller, J. W., & Miller, L. S. (2016). E-mailed prompts and feedback messages to reduce energy consumption: Testing mechanisms behavior change by

employees at a green university. *Journal of Organizational Behavior Management, 36*(2), 332 - 345. doi: https://doi.org/10.1080/01608061.2016.1201034

Schroeder, S. T., Hovell, M. F., Kolody, B., & Elder, J. P. (2004). Use of newsletters to promote environmental political action: An experimental analysis. *Journal of Applied Behavior Analysis, 37*(3), 427-429.

Schultz, N. R., Kohn, C. S., & Musto, A. (2017). Examination of a multi-element intervention on college students' electricity consumption in on-campus housing. *Behavioral Interventions, 32,* 79-90. doi: 10.1002/bin.1463

Course:
Practicum, Internship, Thesis, or Project-based Course

BACB 5th Edition Task List Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use modeling and imitation training.

Task List Item:
G-5 Use modeling and imitation training.

Student Learning Outcomes (SLOs):
SLO 1
Students will describe modeling.

SLO 2
Students will describe imitation training.

SLO 3
Students will create an intervention using modeling.

SLO 4
Students will create an intervention using imitation training.

SLO 5
Students will implement an intervention using modeling.

SLO 6
Students will implement an intervention using imitation training.

Activities:
Homework - SLOs 1-2 (I)
Before starting the project, students will read the required readings. Students should also read the chapter(s) on modeling and imitation training from the selected introduction to behavior analysis textbook.

Microtheme - SLOs 1-2 (I)
Students will describe modeling and imitation training in two Microthemes.

Individual Project and Video - SLOs 3-6 (I)
Students will identify a target sustainability-related behavior(s) (e.g., recycling, energy consumption, littering, waste reduction, etc.), create an intervention that uses modeling and imitation training, and implement the intervention. Students will submit a brief write-up of their results and submit a video of their modeling and imitation procedures.

Assessment:
Microtheme (SLOs 1-2)

Individual Project and Video (SLOs 3-6)

Readings:

Geller, E. S. (1989). Applied behavior analysis and social marketing: An integration for environmental preservation. *Journal of Social Issues, 45*(1), 17-36.

Leeming, E., Hansen, D., Alavosius, M., & Reimer, D. (2013). Sustainability in the field: Lake Tahoe hospitality and environmental protection. *Behavior and Social Issues, 22*, 21-39.

Lehman, P. K., & Geller, E. S. (2004). Behavior analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues, 13*(1), 13-32. doi:https://doi.org/10.5210/bsi.v13i1.33

Winett, R. A., Hatcher, J. W., Fort, T. R., Leckliter, I. N., Love, S. Q., Riley, A. W., & Fishback, J. F. (1982). The effects of videotape modeling and daily feedback on residential electricity conservation, home temperature and humidity, perceived comfort, and clothing worn: Winter and summer. *Journal of Applied Behavior Analysis, 15*(3), 381-402.

Winett, R. A., Leckliter, I. N., Chinn, D. E., Stahl, B., & Love, S. Q. (1985). Effects of television modeling on residential energy conservation. *Journal of Applied Behavior Analysis,* 18, 33-44

Course:
Practicum, Internship, Thesis, or Project-based Course

BACB 5th Edition Task List Sub-Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use instructions and rules

Task List Item:
G-6 Use instructions and rules.

Specific Learning Outcomes (SLOs):
SLO 1
Students will be able to describe the instructions and rules used in the assigned readings (choose three readings).

SLO 2
Students will be able to develop their own instructions and rules for sustainability-related behavior-change goals.

SLO 3
Students will be able to implement the instructions and rules to strengthen sustainability-related behavior(s).

Activities:
Homework - SLO 1 (I)
Before starting the project, students will read three of the readings from the recommended readings list.

Vocal Checkout - SLO 1 (I)
Each student will complete a brief vocal checkout with the course instructor. In the vocal checkout the instructor will ask the student to describe the instructions and rules used in their selected readings.

Individual or Group Project - SLOs 2-3 (I or G)
Students, independently or in groups of 3-4, will identify sustainability-related behavior-change goals within their area of interest, develop procedures that incorporate the use of instructions and rules to strengthen the identified sustainability-related behavior(s), and implement the procedures on the sustainability-related behavior(s). Students will collect raw data, appropriately graph the data, write a report of their procedures, describe the behavior-change, and write a two-page reflection paper of their experience, what they learned, and what they would do differently in a future iteration of their project.

Assessment:
Vocal Checkout (SLO 1)

Individual or Group Project (*SLOs 2-3)*

Readings:

Energy Consumption

Bekker, M. J., Cumming, T. D., Osborne, N. K., Bruining, A. M., McClean, J. I., & Leland, L. S. (2010). Encouraging electricity savings in a university residential hall through a combination of feedback, visual prompts, and incentives. *Journal of Applied Behavior Analysis*, *43*(2), 327-31.

Desroches, M. N., & Mosher, H. (2017). Evaluation of an informational and behavior change program to increase students' self-reported energy conservation. *Behavioral Interventions*, *32*(3), 225-233. doi: 10.1002/bin.1482

Jacobs, H. E., Bailey, J. S., & Crews, J. I. (1984). Development and analysis of a community-based resource recovery program. *Journal of Applied Behavior Analysis, 17*, 127-145.

Environmental Protection

Geller, E. S. (1989). Applied behavior analysis and social marketing: An integration for environmental preservation. *Journal of Social Issues, 45*(1), 17-36.

Lehman, P. K., & Geller, E. S. (2004). Behavior analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues, 13*(1), 13-32. doi:https://doi.org/10.5210/bsi.v13i1.33

Littering

Bacon-Prue, A., Blount, R., Pickering, R., & Drabman, R. (1980). An evaluation of three litter control procedures - trash receptacles, paid workers, and the marked item technique. *Journal of Applied Behavior Analysis, 13*(1), 165-170. doi: 10.1901/jaba.1980.13-165

Burgess, R. L, Clark, R. N., & Hendee, J. C. (1971). An experimental analysis of anti-litter procedures. J*ournal of Applied Behavior Analysis, 4*(2), 71-75. doi: 10.1901/jaba.1971.4-71

Hayes, S. C., Johnson, S., & Cone, J. D. (1975). The marked item technique: A practical procedure for litter control. *Journal of Applied Behavior Analysis, 8*(4), 381-386. doi: 10.1901/jaba.1975.8-381

Kohlenberg, R. & Phillips, T. (1973). Reinforcement and rate of litter depositing. *Journal of Applied Behavior Analysis*, *6*, 391-396.

Powers, R, B., Osborne, J. G., & Anderson, E. G. (1973). Positive reinforcement of litter removal in the natural environment. *Journal of Applied Behavior Analysis*, *6*(4), 579-586. doi: 10.1901/jaba.1973.6-579

Policy and Systems Analyses

Camargo, J., & Haydu, V. (2016). Fostering the sustainable use of common-pool resources through behavioral interventions: An experimental approach. *Behavior and Social Issues*, *25*, 61-76. doi: 10.5210/bsi.v.25i0.6328

Recycling

Austin, J., Hatfield, D. B., Grindle, A. C., & Bailey, J. S. (1993). Increasing recycling in office environments: The effects of specific informative cues. *Journal of Applied Behavior Analysis, 26*(2), 247-253. doi: 10.1901/jaba.1993.26-247

Brothers, K. J. (1994). Office paper recycling: A function of container proximity. *Journal of Applied Behavior Analysis, 27*(1), 153-160.

Fritz, J. N., Dupuis, D. L. Wu, W. L., Neal, A. E., Rettig, L. A., & Lastrapes, R. E. (2017). Evaluating increased effort for item disposal to improve recycling at a university. *Journal of Applied Behavior Analysis, 50*(4), 825 - 829. doi: 10.1002/jaba.405

Keller, J. J. (1991). The recycling solution: How I increased recycling on Dilworth Road. *Journal of Applied Behavior Analysis*, 24(4), 617-619.

Ludwig, T. D., Gray, T. W., & Rowell, A. (1998). Increasing recycling in academic buildings: A systematic replication. *Journal of Applied Behavior Analysis, 31*(4), 683-686. doi: 10.1901/jaba.1998.31-683

Miller, N. D., Meindl, J. N., & Caradine, M. (2016). The effects of bin proximity and visual prompts on recycling in a university setting. *Behavior and Social Issues, 25*, 4-10. doi: https://doi.org/10.5210/bsi.v25i0.6141

This course unit is created for a group project.

Course:
Practicum or Project-based Course

BACB 5th Edition Task List Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use reinforcement procedures to weaken behavior (e.g., DRA, FCT, DRO, DRL, NCR).

Task List Item:
G-14 Use reinforcement procedures to weaken behavior (e.g., DRA, FCT, DRO, DRL, NCR).

Student Learning Outcomes (SLOs):
All
SLO 1
Students will define reinforcement procedures (e.g., DRA, FCT, DRO, DRL, NCR).

SLO 2
Students will distinguish among reinforcement procedures (e.g., DRA, FCT, DRO, DRL, NCR).

SLO 3
Students will identify the reinforcement procedures used to weaken behavior in the assigned readings.

Students will break up into four groups. Each group will be assigned either stimulus fading, or a response prompt procedure.

Group 1
SLO 4
Students will create a DRA to weaken a non-sustainable behavior and increase a sustainability-related behavior(s).

SLO 5
Students will implement the DRA for the non-sustainable behavior and increase a sustainability-related behavior(s).

Group 2
SLO 6
Students will create a FCT to weaken a non-sustainable behavior and increase a sustainability-related behavior(s).

SLO 7
Students will implement a FCT to weaken a non-sustainable behavior and increase a sustainability-related behavior(s).

Group 3
SLO 8
Students will create a DRO to weaken to non-sustainable behavior and increase a sustainability-related behavior(s).

SLO 9
Students will implement a DRO to weaken a non-sustainable behavior and increase a sustainability-related behavior(s).

Group 4
SLO 10
Students will create a DRL to weaken non-sustainable behavior.

SLO 11
Students will implement a DRL to weaken a non-sustainable behavior.

Group 5
SLO 12
Students will create a NCR to weaken a non-sustainable behavior.

SLO 13
Students will implement a NCR to weaken a non-sustainable behavior.

Activities:
Homework - SLOs 1-2 (I)
Before starting the project, students will read the required readings. Students should also read the chapter(s) on reinforcement procedures from the selected introduction to behavior analysis textbook.

Vocal Checkout - SLOs 1-2 (I)
Before starting the project, each student will meet with the project instructor to complete a brief vocal checkout. In the vocal checkout the instructor will ask the student to define the reinforcement procedures (e.g., DRA, FCT, DRO, DRL, NCR) and to distinguish among them.

Paper - SLO 3 (I)
Before starting the project, students will write a brief paper about the reinforcement procedures used in the assigned readings.

Group Project and Poster - SLOs 4-13 (I)
In groups, students will create reinforcement procedures (e.g., DRA, FCT, DRO, DRL, NCR) used to weaken non-sustainable behavior and (when appropriate) to increase a sustainability-related behavior(s). Next, students will implement their designed procedures. Students will collect raw data, appropriately graph the data, write a report of their procedures (a section should be specifically about the selected reinforcement procedures), and describe the effects on the behaviors of interest. Students will present their findings to the class in the format of a poster (according to ABAI standards).

Assessment:
Vocal Checkout (SLOs 1-2)

Paper (SLO 3)

Poster (SLOs 4-13)

Readings:

Required Readings

Foxx, R. M. & Hake, D. F. (1976). Gasoline conservation: a procedure for measuring and reducing the driving of college students. *Journal of Applied Behavior Analysis, 10*(1), 61-74.

Hake, D. F. & Foxx, R. M. (1978). Promoting gasoline conservation: The effects of reinforcement schedule, a leader, and self-recording. *Behavior Modification, 2*(3), 339-370.

Palmer, M. H., Lloyd, M. E., & Lloyd, K. E. (1977). An experimental analysis of electricity conservation procedures. *Journal of Applied Behavior Analysis, 10*(4) 665-671.

Schultz, N. R.; Kohn, C. S.; & Musto, A. (2017). Examination of a multi-element intervention on college students' electricity consumption in on-campus housing. *Behavioral Interventions, 32,* 79-90.

Recommended Readings

Hake, D. F. & Zane, T. A. (1981). Community-based gasoline conservation project: practical and methodological considerations. *Behavior Modification, 5*(4), 435-458.

Hayes, S. C. & Cone, J. D. (1977). Reducing residential electrical energy use: payments, information, and feedback. *Journal of Applied Behavior Analysis, 10*(3), 425-435.

Winett, R. A., Hatcher, J. W., Fort, T. R., Leckliter, I. N., Love, S. Q., Riley, A. W., & Fishback, J. F. (1982). The effects of videotape modeling and daily feedback on residential electricity conservation, home temperature and humidity, perceived comfort, and clothing worn: winter and summer. *Journal of Applied Behavior Analysis, 15*(3), 381-402.

Winett, R. A., Leckliter, I. N., Chinn, D. E., Stahl, B., & Love, S. Q. (1985). Effects of television modeling on residential energy conservation. *Journal of Applied Behavior Analysis, 18,* 33-44.

Course:
Practicum, Internship, Thesis, or Project-based Course

BACB 5th Edition Task List Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use group contingencies.

Task List Item:
G-18 Use group contingencies.

Student Learning Outcomes (SLOs):
SLO 1
Students will define group contingencies.

SLO 2
Students will identify the group contingencies used in the assigned readings.

SLO 3
Students will describe group contingencies that surround sustainability-related behavior(s).

SLO 4
Students will use group contingencies to promote sustainability-related behavior(s).

Activities:
Homework - SLO 1 (I)
Before starting the project, students will read the required readings. Students should also read the chapter(s) on group contingencies from the selected supplementary text.

Microtheme - SLO 1 (I)
Based on the definition provided in the readings, students will draft their own definition of group contingencies given a prompt for a Microtheme.

Summary Paper - SLO 2 (I)
Before starting the project, students will write a brief paper which will identify group contingencies used in the assigned readings.

Individual Project - SLOs 3-4 (I)
Students will create group contingencies which promote a sustainability-related behavior(s), and implement these procedures. Students will collect raw data, appropriately graph the data, write a report of their procedures (a section should be specifically about how the procedures utilized group contingencies) and write a reflection paper of their experience, what they learned, and what they would do differently in a future iteration of the project.

Assessment:
Microtheme (SLO 1)

Summary Paper (SLO 2)

Individual Project (SLOs 3-4)

Readings:

Required Readings

Alavosius, M. P. & Newsome, W. D. (2012). Cooperatives, green behavior, and environmental protection. *Revista Latinoamericana de Psicología*, *(44)*1, 77-85.

Camargo, J. & Haydu, V. (2016). Fostering the sustainable use of common-pool resources through behavioral interventions: an experimental approach. *Behavior and Social Issues, 25,* 61-76.

Slavin, R. E., Wodarski, J. S., & Blackburn, B. L. (1981). A group contingency for electricity conservation in master-metered apartments. *Journal of Applied Behavior Analysis, 14*(3), 357-363.

Witmer, J. F. & Geller, E.S. (1976). Facilitating paper recycling: effects of prompts, raffles, and contests. *Journal of Applied Behavior Analysis, 9*(3), 315-322.

Recommended Readings

Chance, P. & Heward, W. L. (2010). Climate change: meeting the challenge. *The Behavior Analyst, 33*(2), 197-206.

Hake, D. F.; & Zane, T. A. (1981). Community-based gasoline conservation project: practical and methodological considerations. *Behavior Modification, 5*(4), 435-458.

Leeming, E., Hansen, D., Alavosius, M., & Reimer, D. (2013). Sustainability in the field: Lake Tahoe hospitality and environmental protection. *Behavior and Social Issues, 22,* 21-39.

Winett, R. A., Hatcher, J. W., Fort, T. R., Leckliter, I. N., Love, S. Q., Riley, A. W., & Fishback, J. F. (1982). The effects of videotape modeling and daily feedback on residential electricity conservation, home temperature and humidity, perceived comfort, and clothing worn: Winter and summer. *Journal of Applied Behavior Analysis, 15*(3), 381-402.

Course:
Practicum, Internship, Thesis, or Project-based Course

BACB 5th Edition Task List Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use contingency contracting.

Task List Item:
G-19 Use contingency contracting.

Student Learning Outcomes (SLOs):
SLO 1
Students will define contingency contracting.

SLO 2
Students will identify the contingency contracting procedures implemented in the assigned readings.

SLO 3
Students will create contingency contracting procedures for a sustainability-related behavior(s).

SLO 4
Students will implement the contingency contracting for the sustainability-related behavior(s).

Activities:
Homework - SLOs 1-2 (I)
Before starting the project, students will read the required readings. Students should also read the chapter(s) on contingency contracting/management procedures from the selected introduction to behavior analysis textbook.

Paper- SLOs 1-2 (I)
Students will submit a paper discussing the definition of contingency contracting, what procedures of contingency contracting were used in the assigned readings, and what they have learned that will help in the development of their contingency contract.

Individual Project and Poster - SLOs 3-4 (I)
Students will create contingency contracting procedures for a sustainability-related behavior(s) and put them into action. Students will collect raw data, appropriately graph the data, write a report of their procedures (a section should be specifically about how the contingency contracting procedures were developed), and present their findings to the class in the format of a poster (according to ABAI standards).

Assessment:
Paper (SLOs 1-2)

Individual Project and Poster (SLOs 3-4)

Readings:

Luke, M. & Alavosius, M. (2012). Impacting community sustainability through behavior change: a research framework. *Behavior and Social Issues, 21,* 54-79.

Nevin, J. A. (2005). The inertia of affluence. *Behavior and Social Issues, 14,* 7-20.

Winett, R. A., Leckliter, I. N., Chinn, D. E., Stahl, B., & Love, S. Q. (1985). Effects of television modeling on residential energy conservation. *Journal of Applied Behavior Analysis, 18,* 33-44.

Course:
Any

BACB 5th Edition Task List Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use self-management strategies.

Task List Item:
G-20 Use self-management strategies.

Student Learning Outcomes (SLOs):
SLO 1
Students will define self-management.

SLO 2
Students will identify self-management strategies used in the assigned readings.

SLO 3
Students will create a self-management strategy to use to increase sustainability-related behavior(s).

SLO 4
Students will implement the self-management strategy.

Activities:
Homework - SLOs 1-2 (I)
Before starting the project, students should read the required readings. Students should also read the chapter(s) on self-management strategies in Cooper, Heron, and Heward (2007).

Vocal Checkout - SLOs 1-2 (I)
Each student will complete a brief vocal checkout with the course instructor. In the vocal checkout the instructor will ask the student to define self-management and describe at least one of the self-management strategies used to increase sustainability-related behavior(s) in the readings.

In-class Activity - SLO 3 (I)
Students will create self-management strategy to use to increase sustainability-related behavior(s). The strategy can encompass any environmental problem as the target of increase. During this time, students can ask questions and/or get suggestions. Students should plan to use the self-management strategy for at least four days.

Reflection Paper - SLO 4 (I)
Students will write a reflection paper to discuss their experience while using the self-management strategy which they created, including: the creation process, the strategy chosen, rationale for the strategy in relation to the environmental problem, a graph of their findings, and what could be approved upon if the strategy was for continuous usage.

Assessment:
Vocal Checkout (SLOs 1-2)

In-class Activity (SLO 3)

Reflection Paper (SLO 4)

Readings:
Desrochers, M. N. (2015). Evaluation of an informational and behavior change program to increase students' self-reported energy conservation. *Behavioral Interventions, 32*, 225-233.

D. F., Hake, & R. M., Foxx (1978). Promoting gasoline conservation: The effects of reinforcement schedule, a leader, and self-recording. *Behavior Modification, 2*(3), 339-370.

Hake, D. F.; & Zane, T. A. (1981). Community-based Gasoline Conservation Project: Practical and Methodological Considerations. *Behavior Modification, 5*(4), 435-458.

Hayes, S. C. & Cone, J. D. (1981). Reduction of residential consumption of electricity through simple monthly feedback. *Journal of Applied Behavior Analysis, 14(*1), 81-88.

Malott, R. M. (2010). I'll save the world from global warming--tomorrow: Using procrastination management to combat global warming. *The Behavior Analyst, 33*(2), 179-180.

Winett, R. A., Leckliter, I. N., Chinn, D. E., Stahl, B., & Love, S. Q. (1985). Effects of television modeling on residential energy conservation. *Journal of Applied Behavior Analysis, 18,* 33-44.

Course:
Practicum, Internship, Thesis, or Project-based Course

BACB 5th Edition Task List Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use procedures to promote stimulus and response generalization.

Task List Item:
G-21 Use procedures to promote stimulus and response generalization.

Student Learning Outcomes (SLOs):
SLO 1
Students will define stimulus generalization.

SLO 2
Students will define response generalization.

SLO 3
Students will create a novel example of procedures to promote stimulus generalization of sustainability-related behavior(s).

SLO 4
Students will create a novel example of procedures to promote response generalization of sustainability-related behavior(s).

SLO 5
Students will implement procedures to promote stimulus generalization of sustainability-related behavior(s).

SLO 6
Students will implement procedures to promote response generalization of sustainable behavior(s).

SLO 7
Students will assess procedures for stimulus generalization.

SLO 8
Students will assess procedures response generalization.

Activities:
Homework - SLOs 1-2 (I)
Before starting the project, students will read the required readings. Students should also read the chapter(s) on stimulus and response generalization from the selected introduction to behavior analysis textbook.

Microthemes - SLOs 1-2 (I)

Students will write a Microtheme of their own definitions of stimulus generalization and response generalization based on the definitions provided in the readings.

Individual Project - SLOs 3-8 (I)
Students will create procedures to promote stimulus and response generalization for two sustainability-related behavior(s), and implement the procedures on the sustainability-related behavior(s). Students should also create an assessment to test for stimulus and/or response generalization. Students will collect raw data, appropriately graph the data, write a report of their procedures (a section should specifically discuss how the procedures promoted stimulus and/or response generalization and if the target behavior generalized), and write a reflection paper of their experience (i.e., what they learned and what they would do different).

Assessment:
Microthemes (SLOs 1-2)

Individual Project (SLOs 3-8)

Readings:
Austin, J., Hatfield, D. B., Grindle, A. C., & Bailey, J. S. (1993). Increasing recycling in office environments: the effects of specific, informative cues. *Journal of Applied Behavior Analysis, (26)*2, 247-253.

Brothers, K. J. (1994). Office paper recycling: a function of container proximity. *Journal of Applied Behavior Analysis, (27)*1, 153-160.

Desrochers, M. N. (2015). Evaluation of an informational and behavior change program to increase students' self-reported energy conservation. *Behavioral Interventions, 32*, 225-233.

This project is projected to take longer than one semester

Course:
Practicum, Internship, Thesis, or Project-based Course

BACB 5th Edition Task List Section:
Behavior-Change Procedures (G)

General Learning Outcome (GLO):
Students will be able to use procedures to promote maintenance.

Task List Item:
G-22 Use procedures to promote maintenance.

Student Learning Outcomes (SLOs):
SLO 1
Students will define maintenance.

SLO 2
Students will describe the procedures used to promote maintenance in the assigned readings.

SLO 3
Students will create procedures to promote maintenance associated with a sustainability-related behavior(s).

SLO 4
Students will implement the procedures to promote maintenance with a sustainability-related behavior(s).

Activities:
Homework - SLOs 1-2 (I)
Before starting the project, students will read the required readings. Students should also read the chapter(s) on maintenance procedures from the selected introduction to behavior analysis textbook.

Vocal Checkout - SLOs 1-2 (I)
Before starting the project, each student will meet with the project instructor to complete a brief vocal checkout. In the vocal checkout the instructor will ask the student to define maintenance and to describe at least one of the procedures used to increase maintenance of the sustainability-related behavior(s) in the readings.

Individual Project - SLOs 3-4 (I)
Students will create procedures to promote maintenance of a sustainability-related behavior(s), and implement these procedures on the targeted behavior. Students will collect raw data, appropriately graph the data, analyze and interpret the data (specifically describing how the data demonstrate maintenance, if the target behavior maintained, and for how long), write a report of the procedures, and a reflection paper of their experience (i.e., what they learned and what they would do differently in a future iteration of the project).

Assessment:
Vocal Checkout (SLOs 1-2)

Individual Project (SLOs 3-4)

Readings:

Required Readings

Lehman, P. K. & Geller, E. S. (2004). Behavior analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues, 13,* 13-32.

Ludwig, T. D., Gray, T. W., Rowell, A. (1998). Increasing recycling in academic buildings: a systematic replication. *Journal of Applied Behavior Analysis, (31)*4, 683-686.

Winett, R. A., Neale, M. S., & Grier, H. C. (1979). Effects of self-monitoring and feedback on residential electricity consumption. *Journal of Applied Behavior Analysis, 12*(2), 173-184.

Recommended Readings

Alavosius, M. P. & Newsome, W. D. (2012). Cooperatives, green behavior, and environmental protection. *Revista Latinoamericana de Psicología*, *(44)*1, 77-85.

Nevin, J. A. (2005). The inertia of affluence. *Behavior and Social Issues, 14,* 7-20.

Schultz, N. R.; Kohn, C. S.; & Musto, A. (2017). Examination of a Multi-Element Intervention on College Students' Electricity Consumption in On-Campus Housing. *Behavioral Interventions, 32,* 79-90.

Staats, H., van Leeuwen, E., & Wit, A. (2000). A longitudinal study of informational interventions to save energy in an office building. *Journal of Applied Behavior Analysis, 33*(1), 101-104.

BACB 5th Edition Task List Sub-Section: Selecting and Implementing Interventions (H)

Course Units

Course:
Applied Behavior Analysis, Behavioral Interventions, or Behavioral Assessment

BACB 5th Edition Task List Section:
Selecting and Implementing Interventions (H)

General Learning Outcome (GLO):
Students will be able to state intervention goals in observable and measurable terms.

Task List Item:
H-1 State intervention goals in observable and measurable terms.

Student Learning Outcomes (SLOs):
SLO 1
Students will label intervention goals in observable terms.

SLO 2
Students will label intervention goals in measurable terms.

SLO 3
Students will label intervention goal(s) from the assigned articles in observable and measurable terms.

SLO 4
Students will create an intervention that promotes sustainability-related behavior(s).

SLO 5
Students will create and label intervention goals that promotes sustainability-related behavior(s) in observable and measurable terms.

Activities:
Homework - SLO 1-3 (I)
Before starting the project, students will read the required readings. Students should also read the chapter(s) on operational definitions from the selected observation and measurement (research methods) textbook.

Reading Quiz - SLOs 1-3 (I)
Students will label what an intervention goal in observable and measurable terms is (i.e. operational definition). Students will also label intervention goals in observable and measurable terms from the assigned readings (example from Keller (1991): "...measured was how many houses had a recycling bin out on Friday morning.").

In-class Activity and Video - SLOs 4-5 (G)
Students will be split into groups. There will be various environmental problems assigned (recycling, CO^2 emission, littering, waste reduction, etc.) to each group. Groups will create an intervention (including the intervention goals) stated in observable and measurable terms for each the environmental problems. Students will submit all interventions and intervention

goals that are developed in the format of a two-minute video, including a clear statement of the interventions and intervention goals.

Assessment:
Reading Quiz (SLOs 1-3)

In-class Activity and Video (SLOs 4-5)

Readings:

Required Readings

Keller, J. J. (1991). The recycling solution: how I increased recycling on dilworth road. *Journal of Applied Behavior Analysis, 24(*4), 617-619. 10.1901/jaba.1991.24-617

Statts, H., Van Leeuwen, E., & Wit, A. (2000). A longitudinal study of informational interventions to save energy in an office building. *Journal of Applied Behavior Analysis*, *33*(1), 101-104. doi: 10.1901/jaba.2000.33-101

Recommended Readings

Alavosius, M. P. & Newsome, W. D. (2012). Cooperatives, green behavior, and environmental protection. *Revista Latinoamericana de Psicología*, *(44)*1, 77-85.

Geller, E. S. (1989). Applied behavior analysis and social marketing: an integration for environmental preservation. *Journal of Social Issues*, *(45)*1, 17-36.

Grant, L. K. (2010). Sustainability: from excess to aesthetics. *Behavior and Social Issues*, *(19)*, 7-47. doi: 10.5210/bsi.v19i0.2789

Hirsh, J. L., Costello, M. S., & Fuqua, R. W. (2015). Analysis of delay discounting as a psychological measure of sustainable behavior. *Behavior and Social Issues*, *(24)*, 187-202. doi: 10.5210/bsi.v24i0.5906

Miller, N. D., Meindl, J. N., & Caradine, M. (2016). The effects of bin proximity and visual prompts on recycling in a university building. *Behavior and Social Issues, 25*, 4-10. doi: 10.5210/bsi.v.25i0.6141

Course:
Observation and Measurement (Research Methods) or Techniques

BACB 5th Edition Task List Section:
Selecting and Implementing Interventions (H)

General Learning Outcome (GLO):
Students will be able to identify potential interventions based on assessment results and the best scientific evidence available.

Task List Item:
H-2 Identify potential interventions based on assessment results and the best scientific evidence available.

Student Learning Outcomes (SLOs):
SLO 1
Students will describe potential interventions based on the assessment results presented in the assigned readings.

SLO 2
Students will describe potential interventions based on the scientific evidence available from the assigned readings.

SLO 3
Students will interpret novel assessment results based on the best scientific evidence available.

SLO 4
Students will identify potential interventions based on the interpretation of the novel assessment results that incorporate rational from the best available scientific evidence.

Activities:
Homework - SLOs 1-2 (I)
Before coming to class, students will read the required readings. Students should also read any other assigned supplementary text.

Response Paper - SLOs 1-2 (I)
Prior to coming to class, students will write a response paper that describes the potential interventions they developed based on the assessment results including a rationale based on the available evidence from the assigned readings. They should also discuss their personal experience and if they would select a different intervention in a future iteration of the project.

In-class Activity and Presentation - SLOs 3-4 (G)
Given a set of novel assessment results, students will work in small groups to interpret these results based on the best scientific evidence available. Based on this analysis, students will determine a list of potential interventions. Students will present their analysis in a brief in-class presentation.

Assessment:
Response Paper (SLOs 1-2)

In-class Activity and Presentation (SLOs 3-4)

Readings:

Alavosius, M. P. & Newsome, W. D. (2012). Cooperatives, green behavior, and environmental protection. *Revista Latinoamericana de Psicología*, *(44)*1, 77-85.

Foxall, G. R., Oliviera Castro, J. M., James, V. K., Yani-de-Soriano, M. M., & Sigurdsson, V. (2006). Consumer behavior analysis and social marketing: the case of environmental conservation. *Behavior and Social Issues, 15,* 101-124.

Hirsh, J., Costello, M., & Fuqua, R. (2015). Analysis of delay discounting as a psychological measure of sustainable behavior. *Behavior and Social Issues, 24,* 187-202.

Ludwig, T. D., Gray, T. W., Rowell, A. (1998). Increasing recycling in academic buildings: a systematic replication. *Journal of Applied Behavior Analysis, (31)*4, 683-686.

Nevin, J. A. (2005). The inertia of affluence. *Behavior and Social Issues, 14,* 7-20.

Newsome, W. & Alavosius, M. (2011). Toward the prediction and influence of environmentally relevant behavior: seeking practical utility in research. *Behavior and Social Issues, 20,* 44-71.

Winett, R. A., Leckliter, I. N., Chinn, D. E., Stahl, B., & Love, S. Q. (1985). Effects of television modeling on residential energy conservation. J*ournal of Applied Behavior Analysis, 18,* 33-44.

Course:
Thesis

BACB 5th Edition Task List Sub-Section:
Selecting and Implementing Interventions (H)

General Learning Outcome (GLO):
Students will be able to recommend intervention goals and strategies based on such factors as client preferences, supporting environments, risks, constraints, and social validity.

Task List Item:
H-3 Recommend intervention goals and strategies based on such factors as client preferences, supporting environments, risks, constraints, and social validity.

Specific Learning Outcomes (SLOs):
SLO 1
Students who conduct their thesis on a sustainability-related behavior(s) will be able to orally defend (or describe in their written document) their recommended intervention goals and strategies based on such factors as client preferences, supporting environments, risks, constraints, and social validity.

Activities:
Thesis - SLO 1 (I)

Assessment:
Thesis Defense (SLO 1)

Thesis Document (SLO 1)

Readings:

Energy Consumption

Geller, S. E. (1989). Applied behavior analysis and social marketing: An integration for environmental preservation. *Journal of Social Issues*, *45*, 17-36. doi: 10.1111/j.1540-4560.1989.tb01531.x

Nicolaus, R. H. (1982). B. F. Skinner talks about energy. *Behaviorists for Social Action Journal*, *3*(2), 22-24.

Policy and Systems Analyses

Foxall, G. R., Oliviera Castro, J. M., & James, V. K. (2006). Consumer behavior analysis and social marketing: The case of environmental conservation. *Behavior and Social Issues*, *15*, 101-124. doi: 10.5210/bsi.v15i1.338

Waste Reduction

Manuel, J. C., Sunseri, M. A., Olson, R., & Scolari, M. (2007). A diagnostic approach to increase reusable dinnerware selection in a cafeteria. *Journal of Applied Behavior Analysis*, *40*, 301-310.

Course:
Observation and Measurement (Research Methods) or Techniques

BACB 5th Edition Task List Section:
Selecting and Implementing Interventions (H)

General Learning Outcome (GLO):
Students will be able to make data-based decisions about the effectiveness of the intervention and the need for treatment revision.

Task List Item:
H-7 Make data-based decisions about the effectiveness of the intervention and the need for treatment revision.

Student Learning Outcomes (SLOs):
SLO 1
Students will define data-based decision making.

SLO 2
Students will list the criteria on which intervention effectiveness is based.

SLO 3
Students will identify which data-based decisions were made regarding the effectiveness of the intervention and the need for treatment revisions from the assigned readings.

SLO 4
Given a novel data set regarding an intervention for a sustainable behavior, students will make data-based decisions regarding its effectiveness and need for treatment revision.

SLO 5
Students will describe the treatment revisions needed in response to SLO 4.

Activities:
Homework - SLOs 1-3 (I)
Before coming to class, students will read the assigned readings. Students should also read any other assigned supplementary text on data-based decision making, determining intervention effectiveness, and making treatment revisions.

Reading Quiz - SLOs 1-3 (I)
Students will complete a reading quiz, including questions on the definition of data-based decision making, the criteria by which an intervention is determined to be effective, and what data-based decisions were made regarding the intervention in the assigned readings.

In-class Activity - SLOs 4-5 (I)
Students will be divided into small groups and will be given a data set regarding an intervention for a sustainability-related behavior(s). Groups will determine if the intervention was effective and if there is a need for treatment revision(s). If treatment revisions are

needed, the groups will recommendations for how to revise the treatment. Students will present their findings to the class.

Assessment:
Reading Quiz (SLOs 1-3)

In-class Activity (SLOs 4-5)

Readings:

Required Readings

Bekker, M. J., Cumming, T. D., Osborne, N. K., Bruining, A. M., McClean, J. I., & Leland, L. S. (2010). Encouraging electricity savings in a university residential hall through a combination of feedback, visual prompts, and incentives. *Journal of Applied Behavior Analysis, 43*(2), 327-331.

Fritz, J. N., Dupuis, D.L., Wu, W.L., Neal, A.E., Rettig, L.A., & Lastrapes, R.E. (2017). Evaluating increased effort for item disposal to improve recycling at a university. *Journal of Applied Behavior Analysis, 50*(4), 825-829.

Miller, N. D., Mindl, J. N., & Caradine, M. (2016). The effects of bin proximity and visual prompts on recycling in a university building. *Behavior and Social Issues, 25,* 4-10.

Pandey, N., Diller, J. W., & Miller, L. S. (2016). E-mailed prompts and feedback messages to reduce energy consumption: Testing mechanisms for behavior change by employees at a green university. *Journal of Organizational Behavior Management, 36*(4), 332-345.

Recommended Readings

Bittle, R. G., Valesano, R., & Thaler, G. (1979). The effects of daily cost feedback on residential electricity consumption. *Behavior Modification, 3*(2), 187-202.

D. F., Hake, & R. M., Foxx (1978). Promoting gasoline conservation: The effects of reinforcement schedule, a leader, and self-recording. *Behavior Modification, 2*(3), 339-370.

Hayes, S. C. & Cone, J. D. (1977). Reducing residential electrical energy use: payments, information, and feedback. *Journal of Applied Behavior Analysis, 10*(3), 425-435.

Seaver, W. B. & Patterson, A. H. (1976). Decreasing fuel-oil consumption through feedback and social commendation. *Journal of Applied Behavior Analysis, 9*(2), 147-152.

Staats, H., van Leeuwen, E., & Wit, A. (2000). A longitudinal study of informational interventions to save energy in an office building. *Journal of Applied Behavior Analysis, 33*(1), 101-104.

Witmer, J.F. & Geller, E.S. (1976). Facilitating paper recycling: effects of prompts, raffles, and contests. *Journal of Applied Behavior Analysis, 9*(3), 315-322.

BACB 5th Edition Task List Sub-Section: Personnel Supervision and Management (I)

Course Units

This course unit is created for a group project.

Course:
Practicum or Project-based Course

BACB 5th Edition Task List Section:
Personnel Supervision and Management (I)

General Learning Outcome (GLO):
Students will be able to use performance monitoring, feedback, and reinforcement systems.

Task List Item:
I-5 Use performance monitoring, feedback, and reinforcement systems.

Student Learning Outcomes (SLOs):
All
SLO 1
Students will describe performance monitoring systems.

SLO 2
Students will describe feedback systems.

SLO 3
Students will describe reinforcement systems.

SLO 4
Students will distinguish among performance monitoring, feedback, and reinforcement systems.

Students will break up into four groups. Each group will be assigned either stimulus fading, or a response prompt procedure.

Group 1
SLO 5
Students will develop a novel example(s) of performance monitoring systems to increase a sustainability-related behavior(s).

SLO 6
Students will implement a performance monitoring system(s) to increase a sustainability-related behavior(s).

Group 2
SLO 7
Students will develop a novel example(s) of feedback systems to increase a sustainability-related behavior(s).

SLO 8
Students will implement feedback system(s) to increase a sustainability-related behavior(s).

Group 3
SLO 9
Students will develop a novel example(s) of reinforcement systems to increase a sustainability-related behavior(s).

SLO 10
Students will implement reinforcement system(s) to increase a sustainability-related behavior(s).

Activities:
Homework - SLOs 1-4 (I)
Before starting the project, students will read the assigned readings. Students should also read any other assigned supplementary text performance monitoring, feedback, and reinforcement systems.

Paper - SLOs 1-4 (I)
Students will describe and distinguish among performance monitoring, feedback, and reinforcement systems. Students will turn in a paper on their responses.

Group Project - SLOs 5-10 (I)
Each group will create a performance monitoring, feedback, or reinforcement system to increase a sustainability-related behavior(s). Groups will implement the procedures they developed for their targeted sustainability-related behavior(s). Students will collect raw data, appropriately graph the data, write a report of their procedures, and write a reflection paper of their experience, what they learned, and what they would do differently in a future iteration of the project.

Assessment:
Paper (SLOs 1-4)

Group Project (SLOs 5-10)

Readings:

Required Readings

Frazier, P. & Leslie, J. (2014). Feedback and goal-setting interventions to reduce electricity use in the real world. *Behavior and Social Issues, 23*, 20-34.

Pandey, N., Diller, J. W., & Miller, L. S. (2016). E-mailed prompts and feedback messages to reduce energy consumption: Testing mechanisms for behavior change by employees at a green university. *Journal of Organizational Behavior Management, 36*(4), 332-345.

Staats, H., van Leeuwen, E., & Wit, A. (2000). A longitudinal study of informational interventions to save energy in an office building. *Journal of Applied Behavior Analysis, 33*(1), 101-104.

Recommended Readings

Hayes, S. C. & Cone, J. D. (1981). Reduction of residential consumption of electricity

through simple monthly feedback. *Journal of Applied Behavior Analysis, 14*(1), 81-88.

Kohlenberg, R., Phillips, T., & Proctor, W. (1976). A behavioral analysis of peaking in residential electrical-energy consumers. *Journal of Applied Behavior Analysis, 9*(1), 13-18.

Palmer, M. H., Lloyd, M. E., & Lloyd, K. E. (1977). An experimental analysis of electricity conservation procedures. *Journal of Applied Behavior Analysis, 10*(4) 665-671.

Schultz, N. R., Kohn, C. S., & Musto, A. (2017). Examination of a multi-element intervention on college students' electricity consumption in on-campus housing. *Behavioral Interventions, 32*, 79-90.

Winett, R. A., Neale, M. S., & Grier, H. C. (1979). Effects of self-monitoring and feedback on residential electricity consumption. *Journal of Applied Behavior Analysis, 12*(2), 173-184.

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General BA & Teaching

Cihon, T. M. , Kieta, A. , & Glenn, S. (2017). Teaching behavior analysis with behavior analysis: The evolution of the teaching science lab at the University of North Texas. *European Journal of Behavior Analysis.* DOI: 10.1080/15021149.2017.1404393

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Vargas, J. (2009) *Behavior analysis for effective teaching.* New York, NY: Routledge.

Interteach References

Boyce, T. E., & Hineline, P. N. (2002). Interteaching: A strategy for enhancing the user-friendliness of behavioral arrangements in the college classroom. *The Behavior Analyst, 25*(2), 215-226.

Querol, B. I. D., Soldner, J. L., & Rosales, R. (2015). A comprehensive review of Interteaching and its impact on student learning and satisfaction. *Scholarship of Teaching and Learning in Psychology, 1*(4), 490-411. doi: http://dx.doi.org/10.1037/stl0000048

Rosales, R., Soldner, J. L., Zhang, L. (2018). An evaluation of the pair discussion component Of interteaching. *The Psychological Record, 68*(1), 71-79. Doi: http://dx.doi.org/10.1007/s40732-018-0269-0

Precision Teaching References

Binder, C. (1988). Precision Teaching: Measuring and attaining exemplary academic achievement. *Youth Policy, 10*(7), 12-15.

Binder, C., & Watkins, C. L. (1990). Precision Teaching and Direct Instruction: Measurable superior instructional technology in schools. *Performance Improvement Quarterly, 3*(4), 74-96.

Binder, C. (1996). Behavioral fluency: Evolution of a new paradigm. *The Behavior Analyst, 19*(2), 163-197.

Lindsley, O. R. (1991). From technical jargon to plain english for application. Journal of Applied Behavior Analysis, 24(3), 449-458. doi: 10.1901/jaba.1991.24-449

Lindsley, O. R. (1992). Precision teaching: Discoveries and effects. *Journal of Applied Behavior Analysis, 25*(1), 51-57. doi: https://doi.org/10.1901/jaba.1992.25-51

SAFMEDS References

Adams, O., Cihon, T. M., Urbina, T., & Goodhue, R. J. (2017). Comparative effects of cumulative and unitary SAFMEDS terms in an introductory undergraduate behavior analysis course. *European Journal of Behavior Analysis.* Doi: https://doi.org/10.1080/15021149.2017.1404394

Beverley, M., Hughes, J. C., & Hastings, R. P. (2009). What's the probability of that? Using SAFMEDS to increase undergraduate success with statistical concepts. *European Journal of Behavior Analysis, 10*, 183-195.

Cihon, T. M., Sturtz, A., & Eshleman, J. (2012). The effects of instructor-provided or student-created flashcards with weekly, one-minute timings on unit quiz scores in Introduction to Applied Behavior Analysis courses. *European Journal of Behavior Analysis, 13*(1), 47-57. doi: https://doi.org/10.1080/15021149.2012.11434404

Eshleman, J. W. (1985). Improvement pictures with low celerations: An early foray into the use of SAFMEDS. *Journal of Precision Teaching, 6*(3), 54–63.

Mason, L. L. , Rivera, C. J. , & Arriaga, A. (2017). The effects of an avoidance contingency on postsecondary student SAFMEDS performance. *European Journal of Behavior Analysis.* DOI: 10.1080/15021149.2017.1418125

Stockwell, F., & Eshleman, J. (2010). A case study using SAFMEDS to promote fluency with skinner's verbal behavior terms. *Journal of Precision Teaching and Celeration, 26,* 33–40.

Microtheme References

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