

Course Title: **ABSC 725: *Research Methods and Application***

Instructor(s): Charles R. Greenwood, Ph.D., Professor of Applied Behavioral Science
Blake Hansen, M.S., GRA

KU Spring Academic Calendar

http://www.registrar.ku.edu/~registr/pdf/enrollment/calendar_date_4092.pdf)

Class Meeting: Class will start Monday January 26;
Mondays at 12:30-3:30 at the Juniper Gardens in Kansas City, KS (650
Minnesota, 2nd Floor)

Spring Break March 16, 2009 to March 22, 2009

Last Class May 4, 2009

Last Day of Finals May 15, 2009 (Projects Due to Instructor)

Office Hours: By Appointment, (913-321-3143, ext 203; greenwood@ku.edu)

Location/Parking: Juniper Gardens Children's Project is located in downtown Kansas
City, KS at 650 Minnesota Avenue (7th and Minnesota)

Please park in the free lot directly across the street from the Reardon
Center/Hilton Garden Inn located at 520 Minnesota Avenue.

Walk West on Minnesota Avenue to 7th St. Enter the El Centro Building,
650 Minnesota. Juniper Gardens is located on the 2nd floor. Class will be
held on the first floor in the large conference room. See
<http://www.jgcp.ku.edu/~jgcp/about/location/> for additional travel
directions as needed.

Required Texts Kennedy, C. H. (2005). *Single case designs for educational research*.
Boston, MA/Pearson

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and
quasi-experimental designs for generalized causal inference*. Boston,
MA/Houghton Mifflin.

(Recommend purchasing texts online)

Required Readings (on BlackBoard)

Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current
dimensions of applied behavior analysis. *Journal of Applied
Behavior Analysis, 1*, 91-97.

Campbell, J. F. (2004). Statistical comparison of four effect sizes for
single-subject designs. *Behavior Modification, 28*(2), 234-246.

Horner, R. H., Carr, E. G., Halle, J. W., McGee, G., Odom, S. L., &
Wolery, M. (2005). The use of single-subject research to identify
evidence-based practice in special education. *Exceptional Children*
7 (2), 165-179.

- Parker, R. I., Hagan-Burke, S., & Vannest, K. (2007). Percentage of all non-overlapping data (PAND): An alternative to PND. *Journal of Special Education, 40*(4), 194-204.
- Shernoff, E. S., Kratochwill, T. R., & Stoiber, K. C. (2002). Evidence-based interventions in school psychology: An illustration of the task force coding criteria using single-participant research design. *School Psychology Quarterly, 17*(4), 390-422.
- Wolf, M. M. (1978). Social validity: The case for subjective measurement or How applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis, 11*, 203-213.
- Ziolkowski, R. A., & Goldstein, H. (2008). Effects of embedded phonological awareness intervention during repeated book reading on preschool children with language delays. *Journal of Early Intervention, 31*(1), 67-90.

Explanation of Readings

1. The Kennedy text is a current presentation of single-subject research design focused on applications in education, special education, early intervention, and early childhood.
2. The Shadish text is a contemporary version of the “classic” treatment of experimental and quasi-experimental designs by Cook and Campbell beginning in 1963. It provides the context for single-subject research designs (see section on time-series designs) within the larger domain of all experimentation and pursuit of causal relationships.

Course Description

This course surveys experimental research methods used to identify, describe, understand, and intervene on socially important behavior problems occurring across the life span (e.g., early and middle childhood, adolescence, adult, elderly) and in varied settings (e.g., homes, child-care, schools, classrooms, and communities).

The student will have the opportunity to:

- (a) discuss experimental research methods and concepts (e.g., prediction, control, reliability, validity) in scientific, psychological, educational, and behavior-analytic frameworks;
- (b) learn strategies and tactics regarding experimental methods, direct and indirect measurement, graphical and statistical analysis, and experimental designs (single-subject and group trials); and
- (c) learn and apply ethics and social responsibility in experimental research.

Students will read secondary and primary sources, develop research questions, write and present research proposals.

Course Objectives:

Through readings, discussion, application, written products, and presentations, the student will be able to

1. Articulate ethical issues in research and policies and practices used to protect research participants.
2. Describe and apply appropriate methods and strategies of behavioral measurement
3. Articulate and apply the principles of single-subject research design
4. Describe and contrast single-subject design in the context of the general case of all experimental and quasi-experimental designs
5. Describe the concept of variability in human behavior and its accounting in single-subject research design
6. Describe, contrast pros and cons, and apply different single-subject research designs (e.g., demonstration vs. comparative) given differences in research questions, behaviors/outcomes, subject characteristics, and settings.
7. Demonstrate the ability to apply visual analytic strategies with single-subject data
8. Describe and apply the construct of social validity in single-subject design
9. Write up and defend a reasonable research proposal employing a single-subject design
10. Write up and defend use of a single-subject design study within the context of a 5-year long program of research.

Course Format:

Class sessions will include lecture, discussion, and presentation activities (approximately one half of weekly course time). During the lecture, course content will be introduced and related to topics and issues beyond the text readings. During the discussion, students will engage in activities demonstrating their comprehension of the text and application to their own discipline and research interests. During presentation, students will have the opportunity to learn specific study design applications by other researchers.

Students are expected to attend all class meetings and be fully prepared to discuss the readings for each week (see below).

Course Requirements and Grading:

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| 1. Participation in class discussions | (10 points) |
| 2. Complete KU online Human Subjects Protection Training | (5 points) |
| 3. Performance on 4 quizzes (10 points each on best of 3 quizzes) = | (30 points) |
| 4. Presentation of a Research Proposal or Behavior Change Project to Class | (15 points) |
| 5. Research proposal or Behavior Change Project your own single-subject research project using a single-subject research design (write-ups should be 20 pages plus references and figures) = | <u>(40 points)</u> |
| Total Points = | 100 points |

- Grades will be determined by consideration of the combination of the points from the requirements: A = 90-100 points, B = 80-89, C = 70-79