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COURSE OUTLINE

SOC SCI 2UR3

Single Subject Research Design

Day of the Week: Mondays, 7-10pm

Location: ETB 235/236

**McMaster University
Faculty of Social Sciences**

Instructor: Erica Konrad, M.A., BCBA

Office: KTH 208

Extension: n/a

**Office Hours: By appointment via
In-person/phone**

Course Description:

This course presents an introductory examination to single subject design and its applications in the field of applied behaviour analysis.

Course Objectives:

Upon completion of this course, students will be able to:

1. Identify the features of different types of single subject design and their application.
2. Explain the differences between various types of single subject designs.
3. Explain how treatment effectiveness is determined through single subject designs.
4. Develop a research-based proposal for using single subject design.

Developing Transferable Skills

You will work on developing academic skills that are transferable to your other university courses as well as to the workforce. These skills include:

- critical reading and thinking;
- communication (oral, written and visual);
- self and peer evaluation;
- research skills; and
- group work skills.

Required Textbooks:

ISBN	Textbook Title & Edition	Author & Publisher
ISBN-13: 978-0130623218 ISBN-10: 0130623210	Single case research designs in educational and community settings. Pearson, 2011.	O'Neill R.E., McDonnell J.J., Billingsley F.F., & Jenson W.R. Pearson; Upper Saddle River, NJ

Supplemental Text:

Bailey, J. S., & Burch, M. R. (2017). *Research methods in applied behavior analysis 2nd Edition*. Pearson. ISBN: 9781138685260

Evaluation Components:

Assessment Activity	% of Grade	Date Due
Research Papers (X1)	30%	Part 1 (Introduction and Methods): February 12, 2018 Part 2 (Results and Discussion): April 2, 2018
Weekly Quizzes (X10)	20%	Weekly
SAFMEDS (summary 5%; in-person test 5%)	10%	April 9, 2018
TCPS 2: Core Modules	10%	February 5, 2018
Final Exam (Cumulative)	30%	TBA

Quizzes (X10):

Content for the quizzes will be derived the readings for the upcoming lectures. Quizzes are not cumulative. Quizzes must be completed online, prior to lecture, each week.

Research Paper:

This project will be completed in groups of 2-3. The purposes of this assignment is for students to gain experience in (a) designing a study using single-case methodology,

and (b) writing a research paper. The approximate page length of a journal brief report article. Projects must be APA-formatted. The project should use either a withdrawal design, a variation of the multiple baseline design, changing criterion design, or a variation of the alternating treatments design.

You will choose a topic and look into the literature for at least 5 peer-reviewed articles on the topic. You will propose a single-subject design study for a fictitious problem in class, during seminar. The papers should demonstrate synthesis and evaluation of key course concepts related to single-case research design.

Say All Fast a Minute Every Day Shuffled (SAFMEDS) project:

The purpose of this assignment is to provide students with experience of collecting data on their own behavior, and fluent performance with behavior analytic terms. You will be provided with a list of key behaviour analytic terms and definitions. You will record your daily practice of defining the terms everyday (See term/Say Definition).

Procedure:

1. Conduct timed trials on the key terms:
 - a. Hold up the card showing you only the target word and state the definition as quickly and as precisely as you can.
 - b. Record number of correct and incorrect responses. Calculate your rate (per minute) of correct and incorrect responding and record the results.
 - a) Repeat steps “a” and “b” for at least 15 days.
 - c. Make at least 2 modifications in instructional delivery to increase your rate of responding.
2. Plot your data in excel daily
3. Provide a summary (1 page) of your results answering the following questions:
 - a) How did you perform on this task over the course of your training? Interpret your results in terms based on your data. Describe the level and trend of each phase.
 - b) Describe any changes you made to the methods, in order to facilitate learning
4. Submit your data and summary, with chart pasted into a word file of results to your instructor on the last day of class, via Dropbox.

5. In order to receive full grades, you must reach the required criterion of correct responses within a minute timing, in class, demonstrated to your instructor. You can request to test out at any class during the semester.

TCPS 2: Core Modules:

The purpose of completing these modules is to provide students with a broad overview of conducting human subject research. The online tutorial is an introduction to the 2nd edition of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2). It consists of eight modules focusing on the guidance in TCPS 2 that is applicable to all research regardless of discipline or methodology. Students must provide proof of completion via email. The modules can be accessed here:

<http://tcps2core.ca/>

Final Exam (cumulative)

The final exam is cumulative and will include content covered in class and in the readings over the course of the semester.

COURSE SCHEDULE

Date	Topic, Lecture Details & Homework	Chapter	BACB Content Areas
Week 1 January 8, 2018	<p>Introduction</p> <ul style="list-style-type: none"> Introduction to course and course requirements <p>O'Neil et al. (2011): Chapter 1: Historical Background and Development of Single Case Research Methods</p>	1	B-01, B-02, B-03, FK-47, FK-48
Week 2 January 15, 2018	<p>Social Validity and Selecting Variables</p> <p>O'Neil et al. (2011): Chapter 2: Defining What to Measure and How to Measure It</p> <p>Bailey & Burch (2002): Step 1: Select Your General Topic, Find a Good Setting & Choose Appropriate Participants Step 2: Narrow Down Your Research Question</p> <p>Wolf M. M. (1978). Social validity: the case for subjective measurement or how applied behaviour analysis is finding its heart. <i>J. Appl. Behav. Anal.</i> 11, 203 10.1901/jaba.1978.11-203</p> <p>QUIZ 1</p>	2	B-01, B-02, H-01, H-02, H-03, H-04, H-05, J-15
Week 3 January 22, 2018	<p>Basic principles of experiments</p> <p>O'Neil et al. (2011): Chapter 3: Internal and External Validity and Basic Principles and Procedures of Single Case Research (SCR) Designs</p> <p>QUIZ 2</p>	3	A-01, A-02, A-03, A-04, A-05, A-06, A-07, A-08, A-09, A-10, A-11, A-12, A-13, B-01, B-02, B-03, FK-47, FK-48, J-15
Week 4 January 29, 2018	<p>Visual Displays</p> <p>O'Neil et al. (2011): Chapter 4: Making Sense of Your Data: Using Graphic Displays to Analyze and Interpret It</p> <p>QUIZ 3</p>	4	H-01, H-03, H-04, H-05, I-05, FK-47, FK-48, J-15
Week 5 February 5, 2018	<p>O'Neil et al. (2011): Chapter 6: Withdrawal and Reversal Designs</p> <p>Supplemental Reading: Barrish HH, Saunders M, Wolf MM., (1969). <i>Good Behavior</i></p>	6	B-01, B-02, B-03, B-04, C-01, C-02, C-03, I-01, I-02, I-01, I-04, I-05, J-15

	<p><i>Game: effects of individual contingencies for group consequences on disruptive behavior in a classroom. Journal of Applied Behavior Analysis. 2:119–124.</i></p> <p>DUE: PROOF OF COMPLETION OF TCPS 2: CORE MODULES</p> <p>QUIZ 4</p>		
<p>Week 6 February 12, 2018</p>	<p>O’Neil et al. (2011): Chapter 7: Multiple Baseline and Multiple Probe Designs</p> <p>Supplemental Reading: Lerman D.C, Sansbury T, Hovanetz A, Wolever E, Garcia A, O’Brien E, et al. (2008). Using behavior analysis to examine the outcomes of unproven therapies: An evaluation of hyperbaric oxygen therapy for children with autism. <i>Behavior Analysis in Practice. 2:1–9.</i></p> <p>Brobst, B., Ward, P. (2002). Effects of public posting, goal setting, and oral feedback on the skills of female soccer players. <i>Journal of Applied Behavior Analysis.35(3):247–257.</i></p> <p>RESEARCH PAPER PART 1 DUE</p> <p>QUIZ 5</p>	7	<p>B-01, B-02, B-03, B-07, B-08, C-01, C-02, C-03, I-01, I-02, I-01, I-04, I-05, J-15</p>
Mid-term Break			
<p>Week 7 February 26, 2018</p>	<p>O’Neil et al. (2011): <i>Chapter 8: Changing Criterion Designs</i></p> <p>Supplemental Reading: Klein, L. A., Houlihan, D., Vincent, J. L., & Panahon, C. J. (2015). Best Practices in Utilizing the Changing Criterion Design. <i>Behavior Analysis in Practice, 1-10.</i></p> <p>Meyers, A. W., Artz, L. M., & Craighead, W. E. (1976). The Effects Of Instructions, Incentive, And Feedback On A Community Problem: Dormitory Noise. <i>Journal of Applied Behavior Analysis, 9(4), 445-457.</i></p> <p>De Luca RV, Holborn SW. (1992). Effects of a variable-ratio reinforcement schedule with changing criteria on exercise in obese and nonobese boys. <i>Journal of Applied Behavior Analysis. 25(3):671–679.</i></p> <p>QUIZ 6</p>	8	<p>B-01, B-02, B-03, B-06, C-01, C-02, C-03, I-01, I-02, I-01, I-04, I-05, J-15</p>
<p>Week 8 March 5,</p>	<p>O’Neil et al. (2011): <i>Chapter 9: Multiple Treatment Designs (MTD)</i></p>	9	<p>B-01, B-02, B-03, B-05, C-01, C-02,</p>

2018	QUIZ 7		C-03, I-01, I-02, I-03, I-04, I-05, J-15
Week 9 March 12, 2018	Functional Analysis Iwata B. A, Dozier C. L. (2008). Clinical application of functional analysis methodology. <i>Behavior Analysis in Practice</i> .1:3–9. QUIZ 8		B-01, B-02, B-03, B-05, C-01, C-02, C-03, I-01, I-02, I-03, I-04, I-05, J-15
Week 10 March 19, 2018	O'Neil et al. (2011): <i>Chapter 10: Alternating Treatment Designs</i> Supplemental Reading: Libby M. E, Weiss J. S, Bancroft S, Ahearn W. H. A., (2008). A Comparison of most-to-least and least-to-most prompting on the acquisition of solitary play skills. <i>Behavior Analysis in Practice</i> . 1:37–43. QUIZ 9	10	B-01, B-02, B-03, B-05, C-01, C-02, C-03, I-01, I-02, I-05, J-15
Week 11 March 26, 2018	Mayer, G. Roy; Sulzer-Azaroff, Beth; Wallace, Michele (2014). <i>Analyzing Behavioral Data with Complex Research Designs</i> , Chapter 25. QUIZ 10		A-01, A-02, A-03, A-04, A-05, A-06, A-07, A-08, A-09, A-10, A-11, A-12, A-13, A-14, B-09, B-10, B-11, J-15
Week 12 April 2, 2018	Bailey & Burch (2002): Ethics Check and Carrying out Research O'Neil et al. (2011): Chapter 5: Common Steps and Barriers You May Have to Deal With in Conducting a Research Study RESEARCH PAPER PART 2 DUE	5	B-01, B-02, FK-47, FK-48, K-01, K-02, K-03, K-04, K-05, K-06, K-07, K-08, K-09, K-10, J-15
Week 13 April 9, 2018	Final Exam Review O'Neil et al. (2011): <i>Chapter 11: Disseminating Your Research Results</i> SAFMEDS ASSIGNMENT DUE	11	Review all above
TBA	Final Exam		

Additional Supplementary Reading:

Carr J. E, Briggs A. M. (2010). Strategies for making regular contact with the scholarly literature. *Behavior Analysis in Practice*. 3, 13–18.

Deochand, N., Costello, M. S., & Fuqua, R. W. (2015). Phase-change lines, scale breaks, and trend lines using Excel 2013. *Journal of applied behavior analysis*.

Dixon M. R, Jackson J. W, Small S. L, Horner-King M. J, Mui Ker Lik N, Garcia Y, Rosales R. Creating single-subject design graphs in Microsoft Excel™ 2007. *Journal of Applied Behavior Analysis*. 2009; 42:277–293.

Hanley G. P. (2010). Toward effective and preferred programming: A case for the objective measurement of social validity with recipients of behavior-change programs. *Behavior Analysis in Practice*.3,13–21.

Martin G, Thompson K, Regehr K., (2004). Studies using single-subject designs in sport psychology: 30 years of research. *The Behavior Analyst*. 27, 263–280.

Vanselow, N. R., & Bourret, J. C. (2012). Online interactive tutorials for creating graphs with Excel 2007 or 2010. *Behavior analysis in practice*, 5(1), 40.

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check his/her McMaster email

Assignment Submission Guidelines

Guidelines

Written Assignments: All written assignments are to be typed and double-spaced. Please include a title page with your name, student number and email address, the topic title of the assignment and the date submitted. Please submit a paper copy to the Instructor at the start of class on the due date as well as submit one file copy per group to the appropriate Dropbox in Avenue 2Learn.

Submitting Assignments Electronically: Individual assignments submitted electronically must include your last name in the filename: e.g. Smith_Assignment_5_Article_Assessments.rtf.

Late Submissions: All work is due on the date stated, at the beginning of class, unless other arrangements have been made in advance with the instructor. A late penalty of 5 percentage points per day will apply after the due date (weekends included).

Class Participation and Engagement: Class participation and engagement is an important component of this course (and of active learning). Therefore, we expect all students to be 'active' participants in this course. This means attending all classes, being actively involved in class activities and thoughtful discussion, and completing all assignments. The success of this course depends on you! Students who are most successful in this course fulfill these expectations, and engage in all aspects of the course!

Group Assignments: For all group assignments, ALL students in the group must be contributing members of that assignment. The expectation is that each student will be an active and respectful member of their group, and contribute to the assignment - in a fair and equitable way. Group work is sometimes challenging, but it can also be rewarding in a number of ways, including providing you with opportunities to develop valuable 'working-as-a-team' skills that will serve you well in this and other courses, as well as more broadly in your academic, professional, and personal life.

Policy for Returning Assignments/Posting Grades: In accordance with regulations set out by the Freedom of Information and Privacy Protection Act, the University will not allow the return of graded materials by placing them in boxes in departmental offices or classrooms so that students may retrieve their papers themselves; all tests and assignments must be returned directly to the student.

And since it is important for student learning and skills development that students receive feedback on their assignments as they progress through the course, you can expect to receive feedback (comments and a grade) on each of your examinations and the group assignment in a timely fashion. This will allow you the opportunity to see how you performed on each assignment and time to discuss any questions you might have with your instructor.

The following possibilities exist for return of graded materials:

1. direct return of materials to students in class;
2. return of materials to students during office hours;
3. students attach a stamped, self-addressed envelope when submitting the assignments for return by mail (for final capstone assignment only); and
4. submit/grade/return papers electronically.

Arrangements will be finalized for the return of assignments from the options listed above by the instructor during the first class.

Grades for examinations and the group assignment will be posted in Avenue2Learn. Final grades for the course will be posted on Mosaic.

UNIVERSITY POLICY ON ACADEMIC DISHONESTY:

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at <http://www.mcmaster.ca/academicintegrity>

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

A NOTE ABOUT THE USE OF AVENUE TO LEARN IN THIS COURSE:

In this course we will be using Avenue to Learn for the online components of the course. Students should be aware that when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation, may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

A NOTE ABOUT THE USE OF TURNITIN.COM IN THIS COURSE

In this course we may be using a web-based service (Turnitin.com) to reveal plagiarism. If announced by the Instructor, students will be expected to submit their work electronically to Turnitin.com as well as in hard copy so that it can be checked for plagiarism. Students who do not wish to submit their work to Turnitin.com must still submit a hard copy of their work to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com policy, please go to www.mcmaster.ca/academicintegrity

FACULTY OF SOCIAL SCIENCES E-MAIL COMMUNICATION POLICY

Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including to TAs), and from students to staff, must originate from the student's own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student's responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.

Requests for Relief for Missed Academic Term Work

The University recognizes that students periodically require relief from academic work for medical or other personal situations. This academic regulation aims to manage these requests by taking into account the needs and obligations of students, instructors and administrators. It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course. Any concerns regarding the granting of relief should be directed to the respective Faculty Office. Requests for relief should be made with a commitment to academic integrity in mind. Requests that deviate from this commitment will be handled under the Academic Integrity Policy and Student Code of Conduct, where appropriate.

1. Relief for missed academic work worth less than 25% of the final grade resulting from medical or personal situations lasting up to three calendar days:

- o Use the McMaster Student Absence Form (MSAF) on-line self-reporting tool. No further documentation is required.
- o Students may submit requests for relief using the MSAF once per term.
- o An automated email will be sent to the course instructor, who will determine the appropriate relief. Students must immediately follow up with their instructors. Failure to do so may negate the opportunity for relief.
- o The MSAF cannot be used to meet a religious obligation or to celebrate an important religious holiday.
- o The MSAF cannot be used for academic work that has already been completed/ attempted.
- o An MSAF applies only to work that is due within the period for which the MSAF applies, i.e. the 3-day period that is specified in the MSAF; however, all work due in that period can be covered by one MSAF.
- o The MSAF cannot be used to apply for relief for any final examination or its equivalent. See *Petitions for Special Consideration* above.

2. For medical or personal situations lasting more than three calendar days, and/or for missed academic work worth 25% or more of the final grade, and/or for any request for relief in a term where the MSAF has been used previously in that term:

- o Students must report to their Faculty Office to discuss their situation and will be required to provide appropriate **supporting documentation** (see *Documentation Requirements* below).
- o If warranted, the Faculty Office will approve the absence, and the instructor will determine appropriate relief.

Documentation Requirements

If the reason for a request for relief is medical, the approved *McMaster University Medical Form* covering the relevant dates must be submitted. The student must be seen by a doctor at the earliest possible date, normally on or before the date of the missed work and the doctor must verify the duration of the illness.

If the reason is non-medical, appropriate documentation with verifiable origin covering the relevant dates must be submitted, normally within three working days.

In some circumstances, students may be advised to submit a Petition for Special Consideration (Form A) seeking relief for missed academic work. In deciding whether or not to grant a petition, adequacy of the supporting documentation, including the timing in relation to the due date of the missed work and the degree of the student's incapacitation, may be taken into account. Failure to do so may negate the opportunity for relief.

If the petition is approved, the Faculty Office will notify the instructor(s) recommending relief. It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course.

Access Copyright Regulations:

McMaster University holds a licensing agreement with Access Copyright, the Canadian Copyright Licensing Agency. Information on current regulations for copying for education purposes can be found at the following website: <http://www.copyright.mcmaster.ca/>

Student Accessibility Services (SAS) formerly Centre for Student Development (CSD):

If you have an accommodation letter from SAS, you are required to provide a copy of that letter to your instructor. Please be sure that you arrange academic accommodations through SAS as early as possible in order that the instructor can receive the accommodation letter as early as possible in the term.

What are my responsibilities as a student registered at SAS? Students are responsible to identify themselves to Student Accessibility Services on an annual and regular basis in order to receive accommodations and services. Students are responsible for:

- meeting their SAS Program Coordinator prior to, or at the start of each academic term (September, January and summer sessions);
- providing their SAS Program Coordinator with relevant and professional medical or psychological documentation;
- notifying their SAS Program Coordinator if courses are dropped or added, or if accommodations require a change;

- meeting with individual course instructors to discuss specific needs in relation to the course and their disability; and
- providing the course instructor with their accommodation letter from SAS.
For more information, see the SAS website: <http://sas.mcmaster.ca/>