**Developmental Research Methods**

Spring 2019

DEP 5796-U01

**1. Basic Information**

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Class: Tuesdays 1:00pm-3:45pm in DM 252

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**1. Course Description**

Psychological research methods are what distinguishes psychological science from other forms of inquiry. This course will introduce graduate students to a variety of advanced design and analytic techniques in developmental psychology. It is designed to build on the research skills obtained in other fundamental research methods and statistics courses. The material you will learn in this course will allow you to design, implement, analyze, and critically evaluate developmental psychological science research.

This course is discussion-based, experiential, and practical, being intended to prepare you to advance your own program of research, succeed in completing the methods portions of your qualifying exams, and to think like a developmental psychologist in all your professional endeavors. We will focus on three major themes: 1) Theoretical: How do we understand development? What is the scope of developmental science, and how do we understand the nature of developmental change?; 2) Methodological: We will cover issues in design, measurement, and causal inference; 3) Statistical: We will discuss statistical approaches appropriate for addressing developmental research questions. In addition to broadly surveying a host of methods (from survey to randomized experiments to Event Frequency Measurement to multilevel modeling), examples and readings will span the life course and topics of developmental inquiry.

**2. Course Materials**

1. Shadish, W. R., Cook, T. D., & Campbell, D.T. (2002). *Experimental and quasi-experimental designs for generalized causal inference* (2nd Edition). Boston: Houghton-Mifflin.

This text is in part a revision of two earlier books on research methods (Campbell & Stanley, 1966; Cook & Campbell, 1979), and most closely a revision of the Campbell and Stanley (1966) classic. It is a culmination of an entire tradition in social science methodology, including the evolution of our understanding of experimental methods.

2. Laursen, B., Little, T. D., & Card, N. A. (2012). *The handbook of developmental research methods*. New York, NY: Guilford.

This text contains a comprehensive collection of information necessary for developmental researchers from study design and data collection through data analysis. The handbook spans the familiar through the cutting edge (Staples, 2014).

Additional required empirical readings and chapters will also be included throughout the course, to supplement and exemplify concepts from the chapters. These additional readings can be found in the course Dropbox folder.

**3. Assignments and Grade**

1) Attendance, Participation, and Readings (25%)

You are required to read all chapters assigned for each meeting in advance of the meeting, to attend every meeting, and to actively participate in every meeting. There will be reading requirements for all class sessions. You should expect it to take several hours to read the material for each session. It’s VERY important that you come prepared to discuss reading materials and to participate in discussion and peer feedback sessions. *You may miss one class session without penalty for any reason. After your first absence, for each class you miss 2 points (2% of your total grade) will be subtracted from your participation grade, unless the absence is due to a documented personal or family emergency that you discuss with me.*

2) Weekly Application (30%)

For 6 out of 9 weeks of your choosing, you will submit a thoughtful, well-cited description of how a research method from that week (e.g., randomized experiment, moderated mediation, interrupted time-series design, event frequency measurement) can be applied to address and answer a question in your own research area (e.g., dating violence among adolescents, spatial language processing in childhood, handedness in adults). Note that you are working backwards here; starting with the available methods from that week, you will consider what questions of interest you can answer in your research area using that method. Normally, you first devise a question of interest, then predictions, and then select the most appropriate method. Your description of the research question, and the design you will use to answer it from that week’s readings, should not be more than one page long.

The goal of the weekly application assignment is (a) is to make sure students come to class not only having completed the readings, but having fully integrated the readings into their current knowledge set, (b) to expand students’ knowledge set and methodological skill by thinking about how questions in their specialty area can be addressed using a variety of methodologies, and (c) helping students understand the importance of matching research questions with appropriate methods, irrespective of practical concerns. There will be 6 weeks where students need to complete weekly application assignments, and each will be worth 5% of the students’ grade.

To submit your weekly application, please bring paper copies to class. You will need to print and bring one copy for every student (including yourself) as well as for the Professor.

3) Presentations (25%)

During the second half of the semester, students will be responsible for giving presentations on a major study they are currently conducting (it can be at any point in the process- from conceptualization to journal submission). Students will present their current study in two ways:

1. The ideal way the study would be run, if resources and time were unlimited. Based on what you learned in class, what is the ideal test of your most ambitious questions? What would your dream study/studies look like? This proposal needs to be expansive and idealistic, as well as justified. For example, it is not enough to say “I would include both White and African American children if money were unlimited.” Why these particular groups? And why would this extension be useful or not? Consider using multi-level longitudinal designs, representative cross-cultural samples, ecological assessments, multiple control groups, etc.
2. The actual way the study will (or has been run). What compromises did you need to make in the face of practical problems? What are you now unable to conclude due to methodological limitations? How are your findings more tentative and circumscribed than you would ideally like? What can you do to maximize the validity, reliability, generalizability, power, and casual inferences, etc. in your actual study/studies?

In your presentation you will need to reference and use as many concepts and readings from the class as can possibly apply to your presentation and your study. You will also need to engage your classmates with interesting questions, and make conceptual, factual, and theoretical links between the readings from the semester. You may present in any format you like –with handouts, with PowerPoint slides, by writing on the board, using class exercises, etc. Please submit all final presentation materials to the Professor for use in her evaluation of this class assignment.

4) Final Exam (20%)

Your final exam will involve you completing one comprehensive-exam style question in person in class. You will have three questions from which you can choose one, and 1.5 hours to complete the question. All questions will be on a topic we covered in class, but the exact questions will not be known to students in advance.

## Grading

Grades for this class are assigned in the following manner. These assignments will also be discussed in detail in class.

Attendance, Participation, and Readings 25 points total (25%)

Weekly Questions 30 points total (30%)

Presentation 25 points total (25%)

Final Exam 20 points total (20%)

100 points total (100%)

**4. Short Course Outline**

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| Meeting Date | Topic | Readings | Assignment |
| **Meeting 1**  Tuesday, January 8 | Intro to Developmental Methods |  |  |
| **Meeting 2**  Tuesday,  January 15 | Validity and Reliability | **4 readings**  **Chapter 2,** Shadish, Cook, & Campbell (2002)  **Chapter 3,** Shadish, Cook, & Campbell (2002)  **Morera & Stokes (2016)** and **Rae & Olson (2018)** \**in additional readings folder* | Weekly application 1 |
| Tuesday,  January 22 | CANCELLED | CANCELLED for MLK Jr. Day | CANCELLED |
| **Meeting 3**  Tuesday,  January 29 | Correlational, survey, and internet research | **3 readings**  **Chapter 10,** Laursen, Little, & Card (2012)  **Privitera (2017)** and **Ruvalcaba & Eaton (2019)** \**in additional readings folder* | Weekly application 2 |
| **Meeting 4**  Tuesday,  February 5 | Experiments | **3 readings**  **Chapter 1,** Shadish, Cook, & Campbell (2002)  **Chapter 8,** Shadish, Cook, & Campbell (2002)  **Ledgerwood (2018)**: New developments in research methods \**in additional readings folder* | Weekly application 3 |
| **Meeting 5**  Tuesday,  February 12 | Quasi-experiments | **4 readings**  **Chapter 4,** Shadish, Cook, & Campbell (2002)  **Chapter 5,** Shadish, Cook, & Campbell (2002)  **Chapter 6,** Shadish, Cook, & Campbell (2002)  **Minton (1975)** \**in additional readings folder* | Weekly application 4 |
| **Meeting 6**  Tuesday,  February 19 | Practical Problems | **4 readings**  **Chapter 9,** Shadish, Cook, & Campbell (2002)  **Chapter 10,** Shadish, Cook, & Campbell (2002)  **Chapter 14,** Shadish, Cook, & Campbell (2002)  **Sampson, Raudenbush, & Earls (1997)** \**in additional readings folder* | Weekly application 5 |
| **Meeting 7**  Tuesday,  February 26 | Longitudinal Designs and Causal Inference | **4 readings** and guest lecture from Matt Valente  **Chapter 1,** Laursen, Little, & Card (2012)  **Chapter 2,** Laursen, Little, & Card (2012)  **Hofer & Piccinin (2010)** and **Valente et al. (2017)** \**in additional readings folder* | Weekly application 6 |
| **Meeting 8**  Tuesday,  March 5 | Longitudinal Data Collection and Analysis | **3 readings**  **Chapter 8,** Laursen, Little, & Card (2012)  **Chapter 14,** Laursen, Little, & Card (2012)  **Paustian-Underdahl, Eaton, Mandeville, & Little (2019)** \**in additional readings folder* | Weekly application 7 |
| Tuesday,  March 12 | SPRING BREAK | SPRING BREAK | SPRING BREAK |
| **Meeting 9**  Tuesday,  March 19 | Mediation, Moderation, and nonindependence | **3 readings**  **Chapter 18,** Laursen, Little, & Card (2012)  **Chapter 30,** Laursen, Little, & Card (2012)  **Muller, Judd, & Yzerbyt (2005)** \**in additional readings folder* | Weekly application 8 |
| **Meeting 10**  Tuesday,  March 26 | Ecologically-based and Event Frequency Methods | **4 readings** andguest lecture from Adela Timmons on ecological momentary assessment  **Chapter 4,** Laursen, Little, & Card (2012)  **Chapter 5,** Laursen, Little, & Card (2012)  **Timmons et al. (2017) and Klasnja et al. (2015)** \**in additional readings folder* | Weekly application 9 |
| **Meeting 11**  Tuesday,  April 2 | Student presentation 1 | Student presentation 1 | Student presentation 1 |
| **Meeting 12**  Tuesday,  April 9 | Student presentation 2 | Student presentation 2 | Student presentation 2 |
| **Meeting 13**  Tuesday,  April 16 | Final Exam in class | Final Exam in class | Final Exam in class |
| Tuesday,  April 23 | FINALS WEEK  NO CLASS | FINALS WEEK  NO CLASS | FINALS WEEK  NO CLASS |

**5. Detailed Course Outline**

**Meeting 1 (Jan 8)**

**Introduction to Developmental Methods**

**Meeting 2 (Jan 15)**

**Validity and Reliability**

Book Readings:

1. Chapter 2, Shadish, Cook, & Campbell (2002): Statistical conclusion validity and internal validity
2. Chapter 3, Shadish, Cook, & Campbell (2002): Construct validity and external validity

Additional Required Readings (see dropbox link):

1. Morera, O. F., & Stokes, S. M. (2016). Coefficient α as a measure of test score reliability: Review of 3 popular misconceptions. *American Journal of Public Health, 106*(3), 458-460.
2. Rae, J. R., & Olson, K. R. (2018). Test–retest reliability and predictive validity of the implicit association test in children. *Developmental Psychology, 54*(2), 308-330.

**Assignment Due: Weekly application 1**

**Week 3 (Jan 22)**

**CANCELLED for MLK Jr. Day**

**Meeting 3 (Jan 15)**

**Correlational, survey, and internet research**

Book Readings:

1. Chapter 10, Laursen, Little, & Card (2012): Telemetrics and Online Data Collection

Additional Required Readings (see dropbox link):

1. Privitera. G. J. (2017). Survey and Correlational Research Designs. In G. J. Privitera (Ed.), *Research Methods for the Behavioral Sciences* (pp. 225-260, ed. 2). New York: NY, Sage.
2. Ruvalcaba, Y., & Eaton, A. A. (2019). Nonconsensual pornography among U.S. adults: A sexual scripts framework on victimization, perpetration, and health correlates for women and men. *Psychology of Violence.*

**Assignment Due: Weekly application 2**

**Meeting 4 (Feb 5)**

**Experiments**

Book Readings:

1. Chapter 1, Shadish, Cook, & Campbell (2002): Experiments and generalized causal inference
2. Chapter 8, Shadish, Cook, & Campbell (2002): Randomized experiments: Rationale, designs, and conditions conducive to doing them

Additional Required Readings (see dropbox link):

1. Ledgerwood, A. (2018). New developments in research methods. In R. F. Baumeister & E. J. Finkel (Eds.). *Advanced Social Psychology* (2nd Ed.). Oxford University Press.

**Assignment Due: Weekly application 3**

**Meeting 5 (Feb 12)**

**Quasi-experiments**

Book Readings:

1. Chapter 4, Shadish, Cook, & Campbell (2002): Quasi-experimental designs that either lack a control group or lack pretest observations on the outcome
2. Chapter 5, Shadish, Cook, & Campbell (2002): Quasi-experimental designs that use both control groups and pretests
3. Chapter 6, Shadish, Cook, & Campbell (2002): Quasi-experiments: Interrupted time-series designs

Additional Required Readings (see dropbox link):

1. Minton, J. H. (1975). The impact of sesame street on readiness. *Sociology of Education, 48*(2), 141-151.

**Assignment Due: Weekly application 4**

**Meeting 6 (Feb 19)**

**Practical Problems**

Book Readings:

1. Chapter 9, Shadish, Cook, & Campbell (2002): Practical problems 1: Ethics, participant recruitment, and random assignment
2. Chapter 10, Shadish, Cook, & Campbell (2002): Practical problems 2: Treatment implementation and attrition
3. Chapter 14, Shadish, Cook, & Campbell (2002): A critical assessment of our assumptions

Additional Required Readings (see dropbox link):

4. Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277*(5328), 918-924.

**Assignment Due: Weekly application 5**

**Meeting 7 (Feb 26)**

**Longitudinal Designs and Causal Inference**

Book Readings:

1. Chapter 1, Laursen, Little, & Card (2012): Foundational Issues of Design and Measurement
2. Chapter 2, Laursen, Little, & Card (2012): Causal inference, identification, and plausibility

Additional Required Readings (see dropbox link):

3. Hofer, S. M., & Piccinin, A. M. (2010). Toward an integrative science of life-span development and aging. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 65*(3), 269-278.

4. Valente, M. J., Pelham, W. E., III, Smyth, H., & MacKinnon, D. P. (2017). Confounding in statistical mediation analysis: What it is and how to address it. *Journal of Counseling Psychology, 64*(6), 659-671.

**Assignment Due: Weekly application 6**

**Meeting 8 (Mar 5)**

**Longitudinal Data Collection and Analysis**

Book Readings:

1. Chapter 8, Laursen, Little, & Card (2012): Foundational issues in longitudinal data collection
2. Chapter 14, Laursen, Little, & Card (2012): Foundational issues in investigating development as interindividual variation

Additional Required Readings (see dropbox link):

1. Paustian-Underdahl, S., **Eaton, A. A.,** Mandeville, A., & Little, L. (2019). Pushed out or opting out? Integrating perspectives on gender differences in withdrawal attitudes during pregnancy. Journal of Applied Psychology.

**Assignment Due: Weekly application 7**

**Week 10 (Mar 12)**

**CANCELLED for Spring Break**

**Meeting 9 (Mar 19)**

**Mediation, Moderation, and nonindependence**

Book Readings:

1. Chapter 18, Laursen, Little, & Card (2012) Mediation Models for developmental data
2. Chapter 30, Laursen, Little, & Card (2012) Foundational issues in nonindependent data analysis

Additional Required Readings (see dropbox link):

1. Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology, 89*(6), 852-863.

**Assignment Due: Weekly application 8**

**Meeting 10 (Mar 26)**

**Ecologically-based and Event Frequency Methods**

Book Readings:

1. Chapter 4, Laursen, Little, & Card (2012): Time-Scale Dependent Longitudinal Designs
2. Chapter 5, Laursen, Little, & Card (2012): Event Frequency Measurement

Additional Required Readings (see dropbox link):

1. Timmons, A. C., Baucom, B. R., Han, S. C., Perrone, L., Chaspari, T., Narayanan, S. S., & Margolin, G. (2017). New frontiers in ambulatory assessment: Big data methods for capturing couples’ emotions, vocalizations, and physiology in daily life. *Social Psychological and Personality Science, 8*(5), 552-563.
2. Klasnja, P., Hekler, E. B., Shiffman, S., Boruvka, A., Almirall, D., Tewari, A., & Murphy S. A. (2015). Microrandomized trials: an experimental design for developing just-in-time adaptive interventions. *Health Psychol, 34*, 1220–1228.

**Assignment Due: Weekly application 9**

**Meeting 11 (Apr 2)**

**Student presentation 1**

**Meeting 12 (Apr 9)**

**Student presentation 2**

**Meeting 13 (Apr 16)**

**Final Exam in class**