HDE 220: Research Methods in Human Growth and Development

Winter Quarter, 2020

Meeting Time: Mondays 2:10 – 6:00 PM
Location: Hutchison 75

Instructor: Siwei Liu
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Office Hours: By appointment
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Course Description and Goals:
This course is an introduction to research methods and a review of basic statistics for the study of human development. An undergraduate background in social sciences (such as psychology, human development and family studies) and some coursework in statistics and research methods are assumed.

After completing this course, students should be able to:
1) Demonstrate understanding of major methodological issues related to research design, measurement, and statistical analysis
2) Critically evaluate empirical research articles with respects to their developmental conceptualization, design, measurement, and interpretation of results
3) Use statistical software to conduct basic statistical analysis and interpret the results

Evaluation:
Evaluation is based on: (a) Class participation, 30%; (b) Assignments, 40%; and (c) Final paper, 30%.

Class participation: Students are expected to read all assigned readings carefully before class and contribute actively to class discussions.

Assignments: There will be several assignments to be completed outside of class time. Students can discuss assignments with their classmates. However, each student must turn in his/her own write-up.

Final paper: At the end of the quarter, each student will write a final paper in the form of EITHER a research proposal OR an essay. Regardless of content, the paper is limited to 3 pages (single spaced, size 12 text, 1” margins), excluding references. Students will be evaluated in their familiarity of the literature, understanding of research methodology, and critical thinking ability.

- Proposal: Propose a research project on a topic of your choice in human development. The proposal should include five sections: Introduction, Method, Intellectual Merit, Broader Impact, and Feasibility & Timeline. The introduction should include a brief literature review and clearly stated hypotheses. The method section should include descriptions of research design, participants, measures, and data analysis plan. In the intellectual merit section, articulate the potential of the project to advance knowledge in the field. For broader impact, describe the potential of the project to benefit society and contribute to the achievement of specific, desired societal outcomes.

- Essay: Choose a topic in human development and discuss the major methodological considerations in this area of research. The topic can be general (e.g., social-emotional development across the life span) or specific (e.g., depression in ethnic minority adolescents). Discussion of methodology can include issues related to research design, measurement, data analysis, and/or interpretation.
UC Davis Code of Academic Conduct:
Students are expected to follow the UC Davis Code of Academic Conduct, which can be found at http://sja.ucdavis.edu/files/cac.pdf. Students who violate the Code of Academic Conduct are subject to disciplinary sanctions that include censure, probation, suspension, deferred separation or dismissal from the University of California.

Recommended Textbook:

Useful Resources:
UCLA Statistical Consulting Website: http://www.ats.ucla.edu/stat/

Schedule of Topics:
Week 1  Variables, Distributions, and Descriptive Statistics
Reading: Howell (2013). Chapter 2, Describing and exploring data.
Lab: Descriptive statistics

Week 2  Population, Sample, and Hypothesis Testing
Reading: Howell (2013). Chapters 4, Sampling distributions and hypothesis testing.
Reading: Howell (2013). Chapters 5, Basic concepts of probability.
Reading: Howell (2013). Chapters 7, Hypothesis tests applied to means.
Lab: T-tests

Week 3  MLK Day, No Class

Week 4  Hypothesis Testing Done Wrong
Reading: Howell (2013). Chapters 8, Power.
Reading: Howell (2013). Chapters 12, Multiple comparisons among treatment means.
Lab: One-way ANOVA

Week 5  Causality and Experimental Design
Reading: Howell (2013). Chapter 9, Correlation and regression.
Reading: Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). Randomized experiments: Rationale, designs, and conditions conducive to doing them. In Experimental and

Lab: Correlation and regression

Week 6  Quasi-Experimental Design
Reading: Howell (2013). Chapter 15, Multiple regression.
Lab: Multiple regression

Week 7  President’s Day, No Class

Week 8  Moderation and Mediation
Lab: Factorial ANOVA

Week 9  Developmental Designs
Reading: Howell (2013). Chapters 16, Analyses of variance and covariance as general linear models.
Lab: Moderation and mediation

Week 10  Measurement
Lab: TBD