Instructor
Dr. Xiaolong (Luke) Zhang

Introduction
This course is intended to introduce SIRLS students to the fundamentals of research methods seen in library and information science. The emphasis will be on the nature, role and value of various research methods. Major topics covered include:

1) Quantitative data analysis (descriptive, hypothesis tests, analysis of variance, etc.)
2) Surveys
3) Experiments
4) Interviews
5) Case studies

Objectives
After this course, students should be able to:

1) Understand the merits of different research methods and identify appropriate strategies for problems in their own working environment;
2) Conduct basic research design, execute research plan, and analyze research data;
3) Evaluate relevant research projects;
4) Identify research results which can be applied to their own library or information centre.

Required Textbook and Readings
Coursepack for the course

Class Participation
Attending class is required. If students cannot come, they should let the instructor know beforehand. Students are expected to engage in class discussion actively.

Homework
Homework should be submitted before each class. Solution sets will be available after. Students are strongly encouraged to form study groups. Learning from peer students is critical. However, discussion should be only limited to homework questions and general approaches to solutions, not specific answers.
Students must write down answers by their own. Standards of must be respected. Students must comply with professional and academic ethics as stated in the University of Arizona’s Code of Academic Integrity.

Exams
There will be a take-home midterm exam.
There will be an open-book, in-class final exam.

Grades
Homework 60%
Midterm 20%
Final 15%
Class participation 5%

A=90-100
B=80-89
C=70-79
D=60-69
F=59 and below

Schedules
Week 1: Class Introduction

Week 2: Research: Reliability, Validity, Types of Research and Ethics
- Online readings on research ethics
Week 3: Quantitative Data Analysis Foundation: Variables, Data Presentation, Measures of Central Tendency
- Gravetter & Wallnau, Chapter 1-3

- Gravetter & Wallnau, Chapter 4-7

Week 5: Research Design: Experimental Design I

Week 6: Research Design: Experimental Design II

Week 7: Survey Design

Week 8: Hypothesis Testing, t tests
- Gravetter & Wallnau, Chapter 8-10
- Take-home mid-term exam

Week 9: Analysis of variance
- Gravetter & Wallnau, Chapter 11, 13-14

Week 10: Estimation, Correlation, and Regression
- Gravetter & Wallnau, Chapter 12, 15

Week 11: Chi-Square
- Gravetter & Wallnau, Chapter 16

Week 12: Qualitative Methods: Interview
- Chalmers, A. (1978) What is this thing called Science? Chapter 8: Theories as

Week 13: Qualitative Methods: Case Studies

**Week 14: Qualitative Data Analysis and Qualitative vs. Quantities,**

**Week 15: Research Report/Proposal Writing and Class Review**
• SSRC: The Art of Writing Proposals
• Readings on writing NSF and NIH grants

**Week 16: In-class final exam**