

Course Syllabus for SIADS 631: Experiment Design and Analysis

Course Overview and Prerequisites

This course introduces experiment design for laboratory and field experiments. We will discuss the logic of experimentation, and the ways in which experimentation has been -- and could be -- used to investigate social and technological phenomena. Students will learn how to design experiments and analyze experimental data.

Students should have completed at least one undergraduate statistics class at the level of Stats 250.

Instructor and Course Assistants

Instructor: Yan Chen - yanchen@umich.edu

Course Assistant: Linfeng Li - linfeng@umich.edu

Communication Expectations

Contacting instructor and course assistant: Course channel in Slack

Email response time: 24 - 48 hours

Slack response time: 24 - 48 hours

Office hours: **see Course Schedule below**

Required Textbooks

1. Running randomized evaluations: a practical guide /Rachel Glennerster and Kudzai Takavarasha. [See the book's website for purchasing options](#). This book is at the right technical level for our class.
2. Field Experiments: Design, Analysis, and Interpretation /Alan S. Gerber and Donald P. Green. [See the book's website for additional resources](#). Note this is a technically more difficult and more precise book. It is listed here for those who would like to learn the material in greater depth.

Technology Requirements unique to this course

None

Accessibility

[Screen reader configuration for Jupyter Notebook Content](#)

Learning Outcomes

1. Use experiment as a method for causal inference
2. When designing experiments, know when to use blocking versus clustering for random assignment and subsequent data analysis
3. When designing an experiment, know basis power calculation
4. When implementing an experiment, know how to handle spillovers and non-compliance; know how to correct for multiple testing
5. Develop awareness of the areas of applications for laboratory and field experiments -- experiments as measurement of individual preferences, as policy interventions, as evaluation method

Course Schedule

This session **begins on Tuesday, October 29, 2019** and **ends on Monday, November 25, 2019**.

Unless specified in the course, weekly assignments will be **due on Mondays at 11:59 pm** (time zone = Ann Arbor, Michigan = Eastern Time).

Schedule of Weekly Office Hours via Zoom (time zone = Ann Arbor, Michigan = Eastern Time):

- Mondays 3pm-4pm (Chen)
- Wednesdays 9am-10am (Li)
- Begins on Wednesday October 30

Grading

Course Assignments	Percentage of Final Grade
<i>Week 1 Activity - MobLab</i>	4%
<i>Week 1 Quiz</i>	6%
<i>Week 1 Assignment</i>	15%
<i>Week 2 Activity - MobLab</i>	4%
<i>Week 2 Quiz</i>	6%
<i>Week 2 Assignment</i>	15%
<i>Week 3 Activity - MobLab</i>	4%
<i>Week 3 Quiz</i>	6%
<i>Week 3 Assignment</i>	15%
<i>Week 4 Activity - MobLab</i>	4%
<i>Week 4 Quiz</i>	6%
<i>Week 4 Assignment</i>	15%
	100%

Note: All assignments are required to earn credit for this course.

[\(temporary document with Student Handbook information references\)](#)

Letter Grades, Course Grades, and Late Submission Policy

Refer to the [MADS Assignment Submission and Grading Policies](#) section of the UMSI Student Handbook (access to Student Orientation course required).

For this course, the late submission policy is 15% reduction if assignment is turned in one day late, 30% reduction if two days late, 50% if reduction three days, and a zero (0) if four or more days late.

Academic Integrity / Code of Conduct

Refer to the [Academic and Professional Integrity](#) section of the UMSI Student Handbook (access to Student Orientation course required).

Accommodations

Refer to the [Accommodations for Students with Disabilities](#) section of the UMSI Student Handbook (access to the Student Orientation course required).

Use the [Student Intake Form](#) to begin the process of working with the University's Office of Services for Students with Disabilities.

Help Desk(s): How to get Help

- Degree program questions or general help - umsimadshelp@umich.edu
- Coursera's Technical Support (24/7) - <https://learner.coursera.help/>

Library Access

Refer to the [U-M Library's information sheet](#) on accessing library resources from off-campus. For more information regarding library support services, please refer to the [U-M Library Resources](#) section of the UMSI Student Handbook (access to the Student Orientation course required).

Student Mental Health

Refer to the University's [Resources for Stress and Mental Health website](#) for a listing of resources for students.

Student Services

Refer to the [Introduction to UMSI Student Life](#) section of the UMSI Student Handbook (access to the Student Orientation course required).