

Research Frontiers of Management

1. 课堂讲授学时 **Lecture Hours: 16**
2. 课堂实验学时 **Laboratory Hours: 16**
3. 课下研讨学时 **Colloquial Hours: 0**
4. 学生课下投入学时 **Individual Study Hours: 32**
5. 学分 **Credits: 2**
6. 开课学年学期

Occurrence: SummerCourse

7. 先修课程 **Prerequisite(s):**

Probability Theory and Mathematical Statistics, Calculus, Linear Algebra*

(*Recommended, not required as prerequisite)

8. 课程概要 **Course Description:**

This course covers recent development in empirical and theoretical research methods in economics and management. The course contains three modules, including 1) microeconometrics and causal inference, 2) experiment and survey methods, and 3) big data and machine learning. Students are expected to master and apply the techniques to independent research after the class.

Keywords: Causal Inference, Field Experiments, Multimodal Big Data, Machine Learning, Policy Evaluation.

9. 课程预期学习成果 **Course Outcomes:**

By the end of this course, the student will be able to:

(1) Apply the potential outcomes framework and causal inference methods to estimate policy treatment effects.

(2) Design and implement field experiments and discrete choice experiments for policy evaluation.

(4) Develop a complete research design that combines causal identification strategies with multimodal data analysis to evaluate real-world policies.

(4) Critically evaluate empirical studies in economics and management, and present independent research findings in a professional academic format.

10. 教学内容与学时分配 Course Content, Laboratories and Laboratory Hours, Colloquial Hours:

(1) Microeconometrics and Causal Inference 1: Potential Outcome Model (8 Class Hour)

- ✓ Classroom (by Dr. Pengfei Liu): 4 hours
- ✓ Laboratory and Discussion (by Chinese instructor): 4 hours

(2) Microeconometrics and Causal Inference 2: Panel Data and DID (8 Class Hour)

- ✓ Classroom (by Dr. Pengfei Liu): 4 hours
- ✓ Laboratory and Discussion (by Chinese instructor): 4 hours

(3) Microeconometrics and Causal Inference 3: Matching and RD (8 Class Hour)

- ✓ Classroom (by Dr. Pengfei Liu): 4 hours
- ✓ Laboratory and Discussion (by Chinese instructor): 4 hours

(4) Big Data and Machine Learning 1: Theory (8 Class Hour)

- ✓ Classroom (by Dr. Pengfei Liu): 4 hours
- ✓ Laboratory and Discussion (by Chinese instructor): 4 hours

11. 考核与成绩评定

Grading:

Assignmen: 20%

Inclass Quizzes: 20%

Group pre: 20%

Final assignment: 40%

12. 教材，参考书 Text & Reference Book:

- (1) Angrist, Joshua D., and Jörn-Steffen Pischke. Mostly Harmless Econometrics: An Empiricist's Companion. Princeton University Press, 2008.

(2) Cunningham, Scott. Causal Inference: The Mixtape. Yale University Press, 2021.

(3) Imbens, G. W., & Rubin, D. B. *Causal Inference for Statistics, Social, and Biomedical Sciences*. Cambridge University Press. (2024 reprint edition)

13. 编写教师 Course Lecturer:

刘鹏飞，王博

编写教师 Course Lecturer（签字）: