



IE 5067 – Analytical Mind with Secondary Data (次級資料分析與運用)

2 credits, Spring 2026

12:20 PM - 15:10 PM Thursday

綜合教學大樓 402 教室

Class website: <https://cool.ntu.edu.tw/courses/58631>

Contact Information:

- Professor Wayne Fu
- Office Location: 國青 105 室
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- Office Hours: 3:30 PM - 4:30 PM Thursday

Course Description:

Through readings and discussions, the course introduces applications of secondary data and related research methodologies that complement analytical research in addressing business challenges. It covers basic concepts, common data structures, and empirical approaches, as well as the issues that these approaches tend to address. The course is for research-oriented graduate students, particularly suitable for students with basic knowledge of analytical modeling and an interest in the multi-method research approach.

Prerequisites: students who has basic knowledge about analytical model and analysis, common optimization techniques, and linear regression. If you are unsure what to read in preparation for a specific topic, please feel free to ask the instructor.

Required Materials and/or Technology:

Required Textbook:

Wooldridge, J. M. (2016). *Introductory Econometrics: A Modern Approach*. 7th Edition. South-Western Cengage Learning.

Heiss, F., & Brunner, D. (2020). *Using Python for Introductory Econometrics*. 2nd Edition. Eigenverlag.

Optional Textbook:

James, G., Witten, D., Hastie, T., Tibshirani, R., & Taylor, J. (2023). *An Introduction to Statistical learning: With Applications in Python*. Springer International Publishing.

Software:

Python (v3.12.5, conda-forge), JupyterLab (v.4.2.5)



Course Format:

The class approaches this in three ways. First, the lecture will use a small portion of class time to cover basic knowledge. It is more for the purpose of review, as students are expected to finish the preassigned materials. The reading materials include textbook chapters and journal articles from top management journals. Second, students should read and synthesize articles in advance and present the outcomes in class. This activity is expected to be highly interactive, as the lectures and peers may discuss all possible aspects during the presentation. Third, students will be guided on the application of a variety of approaches in Python to analyze data in the project they proposed. Students will also practice research question formation and quantitative analysis with a topic and data of their choice to construct the methods and results portion of a research project targeting an academic journal. In sum, the course format is more similar to a research seminar with individual contributions rather than a lecture-based course.

Course Communication:

You MUST have access to the course COOL website. I will primarily use the website announcement function to communicate with the whole class. It is a student's responsibility to follow announcements and take action accordingly. I arrange course contents by topics and organize them using the modules function on the website so students can access materials easily. Course contents include lecture slides, journal articles, and Python code, which will all be uploaded to their corresponding modules. Again, it is the student's responsibility to retrieve them in advance. For individual matters, I recommend emailing me directly. You are also welcome to use the message function in COOL, although I found it is hardly real-time.

Tentative Course Outline:

Date	session	Topics or Activities	Format
Week 1 - 2/26	1	Introduction	In-person
Week 2 - 3/5	2	Why empirical analysis and secondary data?	In-person
Week 3 - 3/12	3	Basic methods	In-person
Week 4 - 3/19	4	Data structure	In-person
Week 5~9 - 3/26~4/23		Student project proposal	Remote
Week 10 - 4/30	5	Proxy	In-person
Week 11 - 5/7	6	Panel models	In-person
Week 12 - 5/14	7	Advance topic 1	In-person
Week 13 - 5/21	8	Advance topic 2	In-person
Week 14 - 5/28	9	Advance topic 3	In-person
Week 15 - 6/4		Presentation	In-person
Week 16 - 6/11		Presentation	In-person

Note: this is a tentative outline. I will publish a schedule table on COOL and update it throughout the semester. Please refer to the table for assigned reading materials.



Grading Weight:

The final score is calculated using the weight of each area specified in the following table:

<u>Evaluation Area</u>	<u>Weight</u>
Quiz	15%
Project report (presentation)	35%
Project report	25%
Class participation	25%
	<u>100%</u>

Student Project Proposal:

Students will first come up their proposal on how to apply the knowledge relevant to this course (empirical analysis) on a topic of their choice. The topic can be based on the student's personal interest, an ongoing research project, or an extension of a published analytical research article.

Project Presentation:

Student will present their project in a 25-minute presentation. The activity is to practice students' presentation skills in a short time. In addition, the content will focus on topic introduction and approaches rather than findings (title: how you gain the interest of your class peers and demonstrate your competency in 25 mins).

Participation and Attendance:

During in-person sessions, I will have quizzes popped up randomly. I also consider students' participation in classes. Questioning and sharing thoughts are all considered and evaluated. For waiving attendance records, standard attendance policies is followed.

Score/Grade Appeals. It is important to recognize that a grade reflects others' judgment of your work. In this sense, all grading is subjective. Of course, any grade you receive is subject to appeal. However, score changes are at the discretion of the instructor and may be up or down based upon a complete review of the work in question. Changing a few points on an assignment rarely makes a difference in the final grade. Time is much better spent discussing and clarifying the content presented in the course.