

Fall 2026

INTRODUCTION TO EPIDEMIOLOGY AND STUDY DESIGN

流行病學及研究設計導論

Instructor: 邱靜如 教授

Time: Thu, 3-5 pm

Office: 生醫卓群大樓3F, Room: 13320

Classroom: 生醫卓群大樓 13210

Office Hour: Thu 11-12 am

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Course Description

This course provides an introduction to basic principles and concepts of epidemiology relating to the design and interpretation of epidemiological studies. Through this course students are expected to understand and be able to demonstrate understanding of the basic principles underlying different study designs, including cohort, case-control and intervention studies and assess their strengths and limitations. The teaching approach adopted the philosophy of flipped classroom with Moocs and the PBL (problem based learning) teaching style. Students are encouraged to come to class prepared to discuss the assigned readings. The introduction of the course can also be found at: <https://www.youtube.com/watch?v=xTx6ZCIIa6M>

No.	DATE	TOPICS	VEDIO/REFERENCE	IN-CLASS ACTIVITIES
Basic Research Method				
1	Sep 10	Course overview & An overview of research methods		Pre-learning experience survey 、grouping
2	Sep 17	Research questions, hypothesis, and methods wondering		Self-learning
3	Sep 24	Philosophy of Science, Rules for Cause	2-1 Philosophy of science-1 (12') 2-1 Philosophy of science-2 (12') 2-2 Rules for cause-1 (7') 2-2 Rules for cause-2 (13') 2-2 Rules for cause-3 (9')	Questions? Pop Quiz!
4	Oct 1	Use of Secondary Data & Basic measurement stuff	2-3 Use of secondary data (14') 3-1 Basic measurement stuff (22')	Questions? Pop Quiz!
5	Oct 8	Kinds of Scales & Data Quality	3-2 Kinds of scales and data quality-1 (8') 3-2 Kinds of scales and data quality-2 (14') 3-2Kinds of scales and data quality-3 (15') 3-2Kinds of scales and data quality-4 (13')	Questions? Pop Quiz!
6	Oct 15	Mills' Model & Confound	4-1 Mills' model & Causal realities(25') 4-2 Confound (Covariates)-1(18')	Questions? Pop Quiz!
7	Oct 22	Confound Solutions, Factorial Design & Interaction	4-2 Confound (Covariates)-2 (10') 4-2 Confound (Covariates)-3 (9') 4-3 Factorial design-1 (16') 4-3 Factorial design-2 (11')	Questions? Pop Quiz!

8	Oct 29	Correlation & Linear Regression	5-1 Statistical control with multiple regression(19') 5-2 Hierarchical/Sequential multiple regression-1 (12') 5-2 Hierarchical/Sequential multiple regression-2 (12')	Questions? Pop Quiz!
9	Nov 5	GSA & project discussion		
10	Nov 12	Confound, Mediation & Moderation	5-2 Hierarchical/Sequential multiple regression-3 (18') 5-2 Hierarchical/Sequential multiple regression-4 (7') 5-3 Confound, Mediation & Moderation-1 (13') 5-3 Confound, Mediation & Moderation-2 (14')	Questions? Pop Quiz!
11	Nov 19	期 中 考		
Designs & Evaluations				
12	Nov 26	Journal club 1		
13	Dec 3	Journal club 2		
14	Dec 10	Remote class : Research Methods and English Communication (1)		Guest speaker: Savana
15	Dec 17	Remote class : Research Methods and English Communication (2)		Guest speaker: Savana
16	Dec 24	Proposal Presentation 1		
17	Dec 31	Proposal Presentation 2		
18	Jan 7	Course wrap-up		outing

Course Requirements & Evaluation

Pop quiz	33pts 4、5、5、3、3、3、10
Mid-term	30pts
Research questions, hypothesis, and methods wondering	10pts
Journal club	10pts
Proposal Presentation	10pts
Course participation/discussion	7 pts

Required Reference

Ching-Ju Chiu, MOOCS Handout

Ching-Ju Chiu,老年學導論,chapter2,五南出版 2015年

Optional Readings

1. Rothman, Kenneth J., Sander Greenland, and Timothy L. Lash. *Modern epidemiology*. Vol. 3. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins, 2008.
2. 流行病學 邱弘毅總校閱 華格那企業出版 2015 年
3. 調查研究方法 Floyd J. Fowler, Jr. 著 五南 2011 年
4. 研究方法：基礎理論與技巧 蔡毓智譯 雙葉 2013 年
5. 研究方法 梁世武編著 合記 2005 年
6. 臨床研究導讀 Kenneth F. Schulz 著 2008 年
7. 臨床論文解析 楊宗翰編譯 2013 年
8. 社會工作研究法 簡春安, 鄒平儀著 巨流 2016年

磨課師影片連結(中文版)

2-1 Philosophy of Science - 1 https://youtu.be/o6_Jvx-40nc	3-2 Kinds of scales and data quality -2 https://youtu.be/isCdJYLe__k	4-3 Factorial design-2 https://youtu.be/OsWQn284zbw
2-1 Philosophy of Science - 2 https://youtu.be/ypUSHIgcYoQ	3-2 Kinds of scales and data quality -3 https://youtu.be/8tfnd_VwCtQ	5-1 Statistical control with multiple regression https://youtu.be/Kn3MVEBuU34
2-2 Rules for Cause - 1 https://youtu.be/PeMIPkhj6QY	3-2 Kinds of scales and data quality -4 https://youtu.be/DfflhtBKln0	5-2 Hierarchical/Sequential multiple regression-1 https://youtu.be/gaC1oxuS2N8
2-2 Rules for Cause - 2 https://youtu.be/ltH7hM_ET7A	4-1 Mills' model & Causal realities https://youtu.be/ltw0zNb93i0	5-2 Hierarchical/Sequential multiple regression-2 https://youtu.be/VrGMosjgrMc
2-2 Rules for Cause - 3 https://youtu.be/CNbzhqMIY6I	4-2 Confound (Covariates)-1 https://youtu.be/JTlKtM2vI2Q	5-2 Hierarchical/Sequential multiple regression-3 https://youtu.be/49wKqSx2DxM
2-3 Use of secondary data https://youtu.be/3M7xe2zCCVg	4-2 Confound (Covariates)-2 https://youtu.be/nMq0iPBT7cg	5-2 Hierarchical/Sequential multiple regression-4 https://youtu.be/kD-q40lx-o8
3-1 Basic measurement stuff https://youtu.be/4KEvnveZK1o	4-2 Confound (Covariates)-3 https://youtu.be/RHvogCE88i8	5-3 Confound, Mediation & Moderation-1 https://youtu.be/3hgQf_lAaBg
3-2 Kinds of scales and data quality -1 https://youtu.be/BiJdYmgEw5E	4-3 Factorial design-1 https://youtu.be/OeuZizLY3PQ	5-3 Confound, Mediation & Moderation-2 https://youtu.be/5QyVsKTVzIc

Moocs on-line course Link (English version)

2-1 Philosophy of Science - 1 https://reurl.cc/x7nN3N	2-2 Rules for Cause https://reurl.cc/RzxY9z	2-3 Use of secondary data https://reurl.cc/4oZLIr
3-2 Kinds of scales and data quality https://reurl.cc/qLQGp3	3-2 Kinds of scales and data quality -3 https://youtu.be/8tfnd_VwCtQ	4-1 Mills' model & Causal realities https://reurl.cc/qLQGa3
4-2 Confound (Covariates)-1 https://reurl.cc/gDKRxz	4-2 Confound (Covariates)-2 https://reurl.cc/zYxqo0	4-3 Factorial design https://reurl.cc/r5MEXZ
5-1 Statistical control with multiple regression https://reurl.cc/VLkYeA	5-2 Hierarchical/Sequential multiple regression https://reurl.cc/XE7A93	5-3 Confound, Mediation & Moderation https://reurl.cc/M8q3Lv