

管院博士班課程大綱

Ph.D. Program Syllabus

2019.12.16 修訂

系所 Department	資管所 IM	必選修 compulsory/elective	選修 Elective
課程名稱 Course title	110_1_5307137_01 結構方程模式之原理與應用 Principles and Applications of Structural Equation Models (全英語授課/English-taught) Class size up to 12 students	學分數 Credit(s)	3
學年/學期 academic year/Semester	選擇一個項目。 110-1 學期 Fall semester 2021	上課地點 Classroom	COM 608
講授教師 Instructor	Eldon Y. Li 李有仁	上課時間 Time	Monday 6:10 PM~9:00 PM
教師辦公室&諮詢時間 Instructor office number & office hour	管院 618, time TBD	教師聯絡資訊 Instructor Contact	Phone: 0916733800 Email: miseli@ccu.edu.tw
助教 Teaching assistant	TBD	助教 聯絡資訊 TA contact	Email: TBD
先修課程 Pre-requisite courses	Ph.D. 1 st year or higher standing and basic knowledge in statistics.		
課程目標 Course Objective	<p>This course introduces the students to the structural equation models (SEM) and their applications. The students are required to review and analyze top journal papers reporting SEM applications. Six homework assignments allow students to practice SEM software. The course will be conducted in English. Therefore, all presentations, discussions, and research reports must be in English.</p> <p>At the end of the course, students will be able to acquire:</p> <ol style="list-style-type: none"> (1) Common understanding and language in SEM analysis: Ability to communicate with peers with special terminologies and a common body of knowledge. (2) Research and analytical abilities: Ability to read, criticize and present journal articles; to analyze data with SEM and explain research results. (3) Critical thinking ability: Ability to address questions and construct models; to apply models to management decision making. (4) Academic ethics; ability to publish SEM results in major international academic journals and conferences. 		
AACSB 學習品質保證學習目標 Assurance of Learning (AOL) Learning goals *請先選填為主要或次要學習目標(Major or minor learning goal)，再選擇對應之學習目標			
主要學習目標 Major learning goal 目標 2：創造力與創新 LG2:Creativity and Innovation	次要學習目標 Minor learning goal 目標 1：知識整合 LG1:Knowledge Integration	選擇一個項目。 選擇一個項目。	

教材 Teaching materials	1. Hair Jr., J.F., Black, W.C., Babin, B.J., Anderson, R.E. (2019). <i>Multivariate Data Analysis</i> , 8th Ed. Boston, MA: Cengage Group .	
網址 Course website	http://eli.johogo.com/Class/CCU/ http://www.mvstats.com/	
教科書/參考書 Textbooks/Reference	2. Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). <i>A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)</i> . 2 nd Edition, ISBN: 9781483377445, Los Angeles, CA: Sage publications . 3. Kline, R. B. (2015). <i>Principles and Practice of Structural Equation Modeling</i> . 4 th edition, New York: Guilford Press . 4. Raudenbush, S. W., & Bryk, A. S. (2002). <i>Hierarchical Linear Models: Applications and Data Analysis Methods</i> . 2nd Edition, Thousand Oaks, CA: Sage Publications .	
評量方式(請填百分比) Assessment	課堂參與 Participation	10%
	作業 Homework 4%×10	40%
	報告 Oral Presentations (10%×2=20%):	20%
	其他 Research Report	30%
其他說明 Other description	<p>PEDAGOGY: The pedagogy of this course is a mix of lectures, seminars, and activities. The students each will read 10 chapters from which each must submit 10 homework exercises and orally present one chapter in class. The instructor will lecture on other research tools for students to prepare individually for their future research projects.</p> <p>COURSE PLANNING: During the semester, each student is required to make two oral presentations, one for the assigned chapter, one for the research report. In each class session of 160 minutes, two presentations will be scheduled, and each lasts for 40-50 minutes, leaving 20-30 minutes for discussion.</p> <p>COURSE POLICIES: Although no attendance will be taken, meaningful class participation will be a factor in determining your grade. As in all classes, the more you put into a class, the more you get out of it. We encourage sharing your ideas during class discussions. You are responsible for all material presented in class, even if you are absent. If you miss a class, you must get notes from someone else in the class and designate someone to pick up any handouts for you. If you plan to attend class, you must be on time and remain for the entire lecture. Turn off any pagers or cellular phones. We are working hard in teaching this class and expect you to work hard. Attending class is one thing; what you do while you are there is another. Of course, we expect you to be attentive and not disruptive. Being disruptive includes reading newspapers or other books, talking to others working on other course assignments, etc.; if these things are more important than our discussion, you should plan to do them somewhere else, not in class. Being attentive implies staying awake, taking notes, and participating in classroom discussions. If you are working on something else, you are not participating in this class. Finally, according to school regulation, anyone who misses 6 class sessions will not receive any grade for the class, i.e., the grade score will be “0”.</p> <p>GRADE COMPONENTS:</p>	

Oral Presentations (20%)

- Each student will make 2 oral presentations, one for the chapter assignment and one for the research report.
- During the presentation, you will have 40-50 minutes to present the chapter to the class. No overtime is allowed during the presentation.
- The presentation counts 10% of your course grade. If you do not have the PowerPoint handouts of the paper ready by the time of your presentation, you will lose the entire grade.
- The key to a successful presentation is to present the materials without using any note cards. You should list all the agenda items (i.e., headings only) on the PPT slides. Then, handout only carefully selected material to the audience. Do not let the audience feel that you are not prepared or did not do your homework beforehand.
- You are required to read all the chapters being presented in each class. The instructors might ask you to answer the questions regarding the issues in the chapter during the presentation. The quality of your answer will be considered for the class participation grade.

Homework (40%):

You are required to read all chapters for the presentation day before you come to class. Furthermore, you must read and submit the 10 homework exercises and turn in by email, including the chapter you will be presenting. Each exercise counts 4% of your course grade. The 10 chapters in the book of *Multivariate Data Analysis* (Hair *et al.*, 2019) are:

Chapter 3: Exploratory Factor Analysis (p. 121)

Chapter 4: Cluster Analysis (p.189)

Chapter 5: Multiple Regression Analysis (p. 259)

Chapter 6: MANOVA: Extending ANOVA (p. 371)

Chapter 7: Multiple Discriminant Analysis (p. 471)

Chapter 9: Structural Equation Modeling: An Introduction (p. 603)

Chapter 10: SEM: Confirmatory Factor Analysis (p. 658)

Chapter 11: Testing Structural Equation Models (p. 699)

Chapter 12: Advanced SEM Topics (p. 726)

Chapter 13: Partial Least Squares Structural Equation Modeling (PLS-SEM) (p. 759)

Research Report (30%):

You are required to submit a research report containing 6 papers using the SEM method. The papers need not be relevant to your research interest. The due date is one week after the last day of class. An oral presentation will be scheduled. The report contains two sections for each paper: (1) the structured abstract and (2) the tables and figures of SEM analysis.

The structured abstract should contain the following sections: (click here for the [writing guidelines from Emerald Publishing](#)):

1. Purposes
2. Methods
3. Findings
4. Limitations
5. Contributions to literature
6. Practical implications
7. Social implications
8. Originality

Class Participation (10%):

You are expected to attend each class on time with the assigned readings prepared in advance and contribute to the class discussion either by starting the discussion or building on the contribution of others to move the discussion forward. The sharing of your experience and insights is a key part of the learning process. However, to build on the contribution of others requires you to listen and consider the timing of your participation.

The quality and frequency of your contribution will be taken into account in the grading scheme and will include the quality of your responses when cold-called. You will be evaluated after every class session using the following criteria. Please note that contributions are NOT equivalent to only attending class or talking in class. The quality of what is said and your listening and responding to others are important criteria of my evaluation.

Excellent Participation (A): (1) regularly initiates class discussions; (2) contributes consistently to class discussions; (3) regularly gives an indication of substantial knowledge and insights; (4) frequently facilitates others in clarifying and developing their viewpoints; (5) regularly builds on the thinking of others and integrates that thinking into own contributions to produce a larger synergistic understanding of the issues being discussed.

Good Participation (B): (1) frequently initiates class discussions; (2) contributes consistently to class discussions; (3) regularly gives an indication of substantial knowledge and insights; (4) occasionally facilitates others in clarifying and developing their viewpoints.

Fair Participation (C): (1) occasionally initiates class discussions; (2) contributes occasionally to class discussions; (3) gives an indication of some knowledge and insights; (4) almost never responds constructively to the contribution of others.

Poor Participation (D): (1) never or almost never initiates class discussions; (2) never or almost never contributes to class discussions; (3) is late for, does not attend, or is not prepared for three or more classes; (4) actively inhibits or impedes the course of discussion; (5) exhibits defensive behavior such as aggression or withdrawal rather than being thoughtful and considerate of others' ideas.

Failing Participation (F): (1) never or almost never initiates class discussions; (2) never or almost never contributes to class discussions; (3) is late for, does not attend, or is not prepared for six or more classes; (4) actively inhibits or impedes the course of discussion; (5) exhibits defensive behavior such as aggression or withdrawal rather than being thoughtful and considerate of others' ideas.

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*請尊重智慧財產權，不得非法影印教師指定之教科書籍。

課程規劃表 Course Schedule

週次 week	日期 Date	內容 Description	教材章節 Textbook
1	9/13	Summer break	Summer break
2	9/20	Holiday - Mid Autumn Festival	No class
3	9/27	Introduction and discussion Video: SEM with AMOS	Reading assignments
4	10/4	SEM Software reviews	SPSS, AMOS, PLS, HLM
5	10/11	Overview of multivariate methods Video: Hypothesis testing	MDA: Chapter 1
6	10/18	Exploratory factor analysis Cluster analysis SPSS exercises	MDA: Chapters 3 & 4
7	10/25	Multiple regression analysis MANOVA: Extending ANOVA SPSS exercises	MDA: Chapters 5 & 6
8	11/1	Multiple discriminant analysis Structural equation modeling: an introduction SPSS exercises	MDA: Chapters 7 & 9
9	*11/8	Midterm exam week	No class
10	11/15	AMOS exercises	Hair <i>et al.</i> (2017) book
11	11/22	SEM: Confirmatory factor analysis Testing structural equation models AMOS analysis	Ch. presentations 1 & 2 MDA: Chapters 10 & 11
12	11/29	PLS analysis	Hair <i>et al.</i> (2017) book
13	#12/6	Library research	ICEB Nanjing, China
14	12/13	Advanced SEM topics Partial least squares structural equation modeling PLS exercises	Ch. presentations 3 & 4 MDA: Chapters 12 & 13:
15	12/20	Hierarchical linear models HLM exercises	Raudenbush & Bryk (2002) book
16	12/27	Report presentations 1 & 2	Report presentations 1 & 2
17	1/3	Report presentations 3 & 4	Report presentations 3 & 4
18	*1/10	Final exam week	No class
19	1/17	* * * Research report due	

* Midterm and final exam week; No class.

No class on this date due to ICEB 2021 conference attendance. Students not participating in the conference should conduct library research for their research papers.