

國立中正大學課程大綱

National Chung Cheng University Syllabus

課號 course code	3405062	全英文授課 EMI	☒ 是 yes ☐ 否 no
課程名稱 (中文) course name (Chinese)	初等統計學		
課程名稱 (英文) course name (English)	Introductory Statistics		
學年 academic year /semester	2026 Fall	學分 credits	3
學系 (所) department	Department of Adult and Continuing Education	必選修 required/selected	☐ 必修 required ☒ 選修 elective
上課時間 class hours	Wednesday, 14:10-17:00	上課地點 classroom	College of Education Hall II 557 R
教師 instructor	Yu-Shu Chen	教師 email Instructor's email	tasmj3000@gmail.com
助教 teaching assistant	Pei-Yan Lin	助教 email TA's email	patty950715@gmail.com
先修科目或 先備能力 prerequisites	None		
課程概述 course descriptions	Statistics is the science of collecting, organizing, analyzing, and interpreting data to make informed decisions under uncertainty. This course covers basic descriptive and inferential statistics, including measures of central tendency, dispersion, skewness, and kurtosis. Parametric hypothesis testing related to one-sample z-test and t-test, independent and dependent samples t-test, ANOVA, repeated measures ANOVA, chi-square, correlation, and simple regression are included. Nonparametric tests include Wilcoxon test for one sample, Wilcoxon test, Mann-Whitney U test, Kruskal-Wallis test, Friedman test, and Spearman correlation. The purpose of this course is to help you gain a basic understanding of applied statistical methods as well as to help you develop data analysis skills necessary for the analysis, interpretation, and use of data in education and the behavioral sciences. During the semester, students will be expected to conduct a survey, select an appropriate statistical method, calculate or conduct the analysis of the data, and interpret the results.		
學習目標 learning objectives	On completion of this course the student should be able to: ● demonstrate knowledge and a critical understanding of statistical methodologies ● understand and apply a range of statistical techniques based on the main theories and concepts which comprise the syllabus, including the central limit theorem		

	- perform inference on parameter estimates, including constructing confidence intervals and testing hypotheses on the values of parameters - show an awareness of how different statistical models and techniques can be applied to problems of HRD, adult and elderly education. - communicate meaningfully and productively with others on matters relating to and/or requiring the use of statistical methods - Gain an understanding of GAI tools and apply GAI for data analysis and result interpretation.
教科書及參考書 textbooks and references	Textbook - Morgan, G. A., Barrett, K. C., Leech N. L., & Gloeckner, G. W. (2020). <i>IBM SPSS for Introductory Statistics: Use and Interpretation</i> (6th ed.). New York, NY: Routledge. References - Leech, N. L., Barrett, K. C., & Morgan, & G. A. (2014). <i>IBM SPSS for intermediate statistics: Use and interpretation</i> (5th ed.). Routledge. - Howell, D. C. (2012). <i>Statistical methods for psychology</i> (8th ed.). Stamford, CT: Cengage Learning. - Welkowitz, J., Cohen, B., & Ewen, R. (2011). <i>Introductory Statistics for the Behavioral Sciences</i> (7th ed.). Wiley. Software The following software (programs) will be explored during the course: - IBM SPSS (Statistical Package for Social Sciences). - Microsoft Excel. Note: Please respect copyrights and intellectual property rights.

教學要點概述 Teaching Overview	
教材編選 teaching materials	☒ self-editing ☐ by publishers ☐ others
教學方法 teaching method	☒ lecture ☒ small group discussion ☒ hands-on/demonstrations ☐ PBL ☐ case study ☐ online learning ☐ experimentation ☐ others
評量方法 evaluation	☒ participation 30% ☐ quiz 0% ☒ assignment 70% ☐ hand-on practice 0% ☐ midterm report 0% ☒ final report 10% ☐ midterm 0% ☐ final exam. 0% ☐ project 0% ☒ others
Attendance and Participation	

	● I will take attendance every time, and you will be allowed to miss 2 classes without penalty. Three absences will deduct 5 points from your final grade in the course, and four absences will deduct 10 points, and so on. Tardiness is defined as showing up to class more than 10 minutes late. Two tardiness equal one absence. Showing up to class more than 50 minutes late equal an absence. ● Student can get extra credits by collecting stickers. For the first speech in class, you can earn one sticker. The second speech, you must answer the question correctly to earn a sticker. You can earn a maximum of three stickers per class. At the end of the term, three stickers can add one point to the total score. Assignments ● Assignment 1 (10%): Please refer to the sample provided by the professor to create your own resume. ● Assignment 2-5 (40%): This course includes several take-home assignments. Assignment 2 to 5 are group assignments with each group consisting of 2 to 3 students. The purpose of these assignments is to allow students to practice various statistical methods taught in class. ● Assignment 6 (20%): The final report is an individual assignment. Each person must choose one type of distribution (z, t, chi-square, or F), create a PowerPoint presentation, and give a 3-minute oral report. The purpose of this assignment is to help students understand four different statistical distributions and practice their English expression. Classroom rules ● Be punctual ● Be prepared ● Be engaged ● Make contributions to the happy learning climate.																		
教學資源 teaching resources	☒ eCourse 2 ☐ internship website ☐ e-learning materials																		
與 SDGs 目標 的關聯 related to goals of SDGs	<table border="0"> <tr> <td>☐SDG 1 no poverty</td> <td>☐SDG 2 zero hunger</td> </tr> <tr> <td>☐SDG 3 good health and well-being</td> <td>☒SDG 4 quality education</td> </tr> <tr> <td>☐SDG 5 gender equality</td> <td>☐SDG 6 clean water and sanitation</td> </tr> <tr> <td>☐SDG 7 affordable and clean energy</td> <td>☐SDG 8 decent work and economic growth</td> </tr> <tr> <td>☐SDG 9 industry, innovation, and infrastructure</td> <td>☐SDG 10 reduce inequalities</td> </tr> <tr> <td>☐SDG 11 sustainable cities and communities</td> <td>☐SDG 12 responsible consumption and production</td> </tr> <tr> <td>☐SDG 13 climate action</td> <td>☐SDG 14 life below water</td> </tr> <tr> <td>☐SDG 15 life on land</td> <td>☐SDG 16 peace, justice, and strong institution</td> </tr> <tr> <td>☐SDG 17 partnerships for the goals</td> <td>☐ not relevant</td> </tr> </table>	☐ SDG 1 no poverty	☐ SDG 2 zero hunger	☐ SDG 3 good health and well-being	☒ SDG 4 quality education	☐ SDG 5 gender equality	☐ SDG 6 clean water and sanitation	☐ SDG 7 affordable and clean energy	☐ SDG 8 decent work and economic growth	☐ SDG 9 industry, innovation, and infrastructure	☐ SDG 10 reduce inequalities	☐ SDG 11 sustainable cities and communities	☐ SDG 12 responsible consumption and production	☐ SDG 13 climate action	☐ SDG 14 life below water	☐ SDG 15 life on land	☐ SDG 16 peace, justice, and strong institution	☐ SDG 17 partnerships for the goals	☐ not relevant
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教師 相關訊息	● Prof. Yu-Shu Chen ● University of Minnesota, Ph.D. (human resource development)																		

instructor's information	● Research interests: organizational creativity, creativity development, creative problem solving, human resource development, statistical methodology ● Office location: College of Education Hall 314 R ● Office hours: Wednesday, 13:10 to 14:00 p.m. ● Telephone: (05) 2720411 ext. 36114
每週課程內容 Weekly Course Content	
Flipped learning: Please watch the assigned videos for the week before class.	
Week 1 (9/9) ● Topic: Introduction ● Readings: syllabus & handouts (Maths is fun) (CCU cloud SPSS)	
Week 2 (9/16) ● Topic: Research Problems (questionnaires) ● Readings: Morgan et al., chap. 1 & handouts	
Week 3 (9/23) ● Topic: Data coding, Entry, and Transformation ● Readings: Morgan et al., chap.2 & handouts	
Week 4 (9/30) ● Topic: Descriptive Statistics ● Readings: Morgan et al., chap. 3 & handouts	
Week 5 (10/7) ● Topic: Checking Assumptions ● Readings: Morgan et al., chap. 4 & handouts	
Week 6 (10/14) ● Topic: File Management, Recode, Compute ● Readings: Morgan et al. (5th ed.), chap. 5 & handouts	
Week 7 (10/21) Topic: Inferential Statistics Readings: Morgan et al., chap.5 & handouts	
Week 8 (10/28) ● Topic: Chi-Square ● Readings: Morgan et al., chap. 6 & handouts	
Week 9 (11/4) Topic: The Midterm Exam Readings: handouts	
Week 10 (11/11) ● Topic: Nonparametric Associational Statistics (phi, Cramer's V, Kendall's tau-b) ● Readings: Morgan et al., chap.6 & handouts	
Week 11 (11/18) ● Topic: Correlation ● Readings: Morgan et al., chap.8 & handouts	

Week 12 (11/25)

- Topic: Regression
- Readings: Morgan et al., chap.8 & handouts

Week 13 (12/2)

- Topic: Multiple Regression
- Readings: Leech et al., chap.6 & handouts

Week 14 (12/9)

- Topic: t Test
- Readings: Morgan et al., chap.9 & handouts

Week 15 (12/16)

- Topic: Nonparametric Man-Whitney U & Wilcoxon test
- Readings: Morgan et al., chap.10 & handouts

Week 16 (12/23)

- Topic: ANOVA
- Readings: Morgan et al., chap.9 & handouts

Week 17 (12/30)

- Topic: Self-directed learning
- Readings: handouts

Week 18 (1/6)

- Topic: Self-directed learning
- Readings: handouts

成教所核心能力
Core Competencies of ACE

Core competency		Degrees of related to core competency				
		1	2	3	4	5
Specific competency	Project planning	V				
	Teaching development		V			
	Talent development		V			
	Organizational management		V			
General Competence	Communication				V	
	Problem solving					V
	Inter-discipline cooperation	V				
	Creative thinking		V			
	Critical thinking				V	
	International vision				V	
	Wisdom technology				V	