



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	統計學(一)AA		學年/學期 Academic Year/Semester	108/1
課程名稱(英文) Course Name in English	Statistics (I)			
科目代碼 Course Code	IB_2140AA	系級 Department & Year	學二	開課單位 Course-Offering Department
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)	3.0/3.0	
授課教師 Instructor	/林金龍			
先修課程 Prerequisite				
課程描述 Course Description				
<p>H. G. Wells, an English author and historian, predicted over 100 years ago that quantitative reasoning will be as necessary for effective citizenship as the ability to read. He could not have been more correct especially for students in business and economics today who need to acquire the knowledge to organize, analyze, extract and then transform data to present the information. These basic statistical skills and methods are essential for making proper business and personal decisions.</p> <p>This course is the first semester of a one-year undergraduate statistics. It aims at equipping the students with the ability to describe data sets using graphs and numerical summaries, to use probability rules in problem solving, to supply inferential statistical techniques in decision making for business and real life situations. Topics studied include descriptive measures for empirical data, theory of probability, probability distributions, sampling distributions of statistics from large and small samples, estimation theory, hypothesis testing, correlation, and regression.</p> <p>One can never really master statistics without getting his/her hand dirty with real data. Analyzing real data using some statistical package is considered as an essential part of this course. I shall give empirical data analysis during the lectures and assign computer-related home work. For this purpose, I shall teach and ask students to learn and use R, a powerful statistical and yet free package. It can be downloaded from</p> <p>http://www.r-project.org</p>				
課程目標 Course Objectives				
<p>本課程以教授同學基本統計概念、統計原理及進行資料分析之統計程序為主，期能培養同學對統計學的基礎觀念，並熟悉進行統計推論之原理與程序。</p>				
院基本素養與核心能力 College Basic Learning Outcomes				課程目標與院基本素養與核心能力 Correlation between Course Objectives and Basic Learning Outcomes
A	完備的高學與管理基礎知識。Sound basic knowledge of business and management			●

B	運用理性分析與創新思維從事問題解決。Ability to utilize rational and creative critical thinking in problem solving	●
C	專業外語能力。Professional foreign language skills	○

圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated

授課進度表 Teaching Schedule & Content

週次Week	內容 Subject/Topics	備註Remarks
1	Introduction to statistics and R	
2	Describing data frequency tables, frequency distributions and graphic presentation	
3	Describing data: numerical measure	
4	Describing data: displaying and exploring data	
5	A survey of probability concepts (1/2)	
6	A survey of probability concepts (2/2)	
7	Discrete probability distributions (1/2)	
8	Discrete probability distributions (2/2)	
9	期中考試週 Midterm Exam	
10	Sampling methods and the central limit theorem (1/2)	
11	Sampling methods and the central limit theorem (2/2)	
12	Estimation and confidence intervals (1/2)	
13	Estimation and confidence intervals (2/2)	
14	One-sample tests of hypothesis (1/2)	
15	One-sample tests of hypothesis (2/2)	
16	Two-sample tests of hypothesis (1/2)	
17	Two-sample tests of hypothesis (2/2)	
18	期末考試週 Final Exam	

教學策略 Teaching Strategies

- 課堂講授 Lecture 分組討論 Group Discussion 參觀實習 Field Trip
- 其他 Miscellaneous: 分析實際統計資料

教學創新自評 Teaching Self-Evaluation

創新教學 (Innovative Teaching)

- 問題導向學習 (PBL) 團體合作學習 (TBL) 解決導向學習 (SBL)
- 翻轉教室 Flipped Classroom 磨課師 Moocs

社會責任 (Social Responsibility)

- 在地實踐 Community Practice 產學合作 Industry-Academia Cooperation

跨域合作 (Transdisciplinary Projects)

- 跨界教學 Transdisciplinary Teaching 跨院系教學 Inter-collegiate Teaching
- 業師合授 Courses Co-taught with Industry Practitioners

其它 other:

學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績 General Performance									
期中考成績 Midterm Exam	30%	✓							
期末考成績 Final Exam	40%	✓							
作業成績 Homework and/or Assignments	30%		✓						含上課出席率
其他 Miscellaneous (_____)									

評量方式補充說明

Grading & Assessments Supplemental instructions

教科書與參考書目 (書名、作者、書局、代理商、說明)

Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

Textbook:

D. A. Lind, W. G. Marchal and S. A. Wathen (2014),
Statistical Techniques in Business and Economics, 16th ed. New York: McGraw Hill
(Imported by Hwa Tai Publishing)

Reference books:

Daniel Navarro (2014), Learning Statistics with R: A tutorial for psychology students and other
beginners

(Version 0.4) available at :\\

<http://health.adelaide.edu.au/psychology/ccs/teaching/lsr/>

Darrell Huff (1954), How to lie with statistics, New York: W.W. Norton & Company

課程教材網址(含線上教學資訊, 教師個人網址請列位於本校內之網址)

Teaching Aids & Teacher's Website(Including online teaching information.

Personal website can be listed here.)

faculty.ndhu.edu.tw/~jlin

其他補充說明 (Supplemental instructions)