

課程綱要 Course Syllabus

開課系所 Class/Department：城市治理英語碩士學位學程

課程中文名稱 Title of course in Chinese：量化資料分析

課程英文名稱 Title of course in English：Quantitative Data Analysis

授課教師 Instructor：王千岳

應修系級 Major：都市治理碩士學程

選修類別 Type of Credit：■ 必修 Required 選修 Elective

全半學年 Whole or Half Academic Year： 全學年 Whole ■ 半學年 Half

學分 Credit(s)：2 時數 Hour(s)：2 hours per week

教師網址 Instructor's Website：

<http://www.ntpu.edu.tw/up/?p=2237&lang=en-us>

<http://www.ntpu.edu.tw/up/?p=1927&lang=zh-tw>

先修科目 Prerequisites：

教學目標 Course Objectives：

The course is designed to help students to understand what Quantitative Data Analysis is. It covers broad knowledge from Probability and Distribution Theory to Multivariable Regression Analysis.

內容綱要 Course Outline：

1. Probability and Distribution Theory
2. Estimation and Inference
3. Large Sample Distribution Theory
4. Linear Algebra and Calculus (Optional. It depends on students' background)
5. The Nature of Linear Regression Analysis
(Assumptions of the Linear Regression Model)
6. Two-Variable Regression Analysis: Some Basic Ideas
7. Multivariable Regression Analysis (Using STATA Software)
8. Hypothesis Tests and Model Selection

學生核心能力權重 Student's Core Competence Index:

*校定核心能力：八項加總為 100%，不需每項均填寫，惟至少需填一項

項 目 Item	創意思考與問題解決 Creative thinking and Problem-solving	綜合統整 Comprehensive integration	溝通協調 Communication and Coordination	團隊合作 Teamwork
權 重 Weight	70%	30%	%	%
項 目 Item	誠信正直 Honesty and Integrity	尊重自省 Self-Esteem and Self-reflection	多元關懷 Caring for Diversity	跨界宏觀 Interdisciplinary Vision
權 重 Weight	%	%	%	%

*系定核心能力及權重：(請依照系所訂定之核心能力及課程權重簡述如下)

教學進度 Teaching Schedule：

週別 Weekly Schedule	教學預定進度 Tentative teaching schedule	教學方法與教學活動(可複選) Teaching Methods and activities
Week 1	Introduction	講授 Lecture、討論 Discussion、實習 Practicum、 其他 Others
Week 2	Probability and Distribution	Lecture

	Theory	
Week 3	Probability and Distribution Theory	Lecture
Week 4	Estimation and Inference	Lecture
Week 5	Estimation and Inference	Lecture
Week 6	Large Sample Distribution Theory	Lecture
Week 7	Linear Algebra and Calculus	Lecture
Week 8	Linear Algebra and Calculus	Lecture
Week 9	Mid-term exam	
Week 10	The Nature of Linear Regression Analysis	Lecture
Week 11	Two-Variable Regression Analysis	Lecture
Week 12	Multivariable Regression Analysis	Lecture
Week 13	Multivariable Regression Analysis	Lecture
Week 14	Multivariable Regression Analysis	Lecture
Week 15	Multivariable Regression Analysis	Lecture
Week 16	Hypothesis Tests and Model Selection	Lecture
Week 17	Hypothesis Tests and Model Selection	Lecture
Week 18	Multivariable Regression Analysis Using STATA	Practicum

評量方式 Evaluation Methods : (各項成績請填百分比; 合計 100%)

平時成績 Regular grades 30 %	期中成績 Mid-term grades 20 %	期末成績 Final grades 50 %
<input checked="" type="checkbox"/> 出席率 Participation <input type="checkbox"/> 數位學苑作業與討論 Digital classroom assignment and discussion <input type="checkbox"/> 課堂討論 Class discussion <input checked="" type="checkbox"/> 平時作業 Regular assignment <input type="checkbox"/> 平時考試 Regular test <input type="checkbox"/> 其他 Others : _____	<input checked="" type="checkbox"/> 期中考 Mid-term <input type="checkbox"/> 書面報告 Written report <input type="checkbox"/> 口頭報告 Oral report <input type="checkbox"/> 其他 Others : _____	<input type="checkbox"/> 期末考 Final <input checked="" type="checkbox"/> 書面報告 Written report <input type="checkbox"/> 口頭報告 Oral report <input type="checkbox"/> 其他 Others : _____

指定用書 Required Texts : Econometric Analysis (7th edition) by William Greene (2012)

參考書目 Reference Books : Applied Statistics Using Stata: A Guide for the Social Sciences by Mehmet Mehmetoglu (2016)

※備註：開課單位新增課程時，如無授課教師得暫以文字敘述教學進度與評量方式。