國立台灣科技大學 114學年 第2學期　課程大綱

Spring 2026 NTUST Course Outline

授課教師：林希偉

Instructor:Shi-Woei Lin

課程名稱：統計學(二)

Course Title：Statistics (2)

2026/11/3

課程代號： IM3004301 Course Code 學分數： 3 Credits	必選修：必修/半學年 Required/Electve:Required/Half Yr. 先修課程： Prerequisites
節次教室： Time/Location	T2(MA-101) T3(MA-101) T4(MA-101)
專業核心能力： Core Professional Competencies	
課程網址： Course Website	https://moodle2.ntust.edu.tw/
課程宗旨： Course Objectives	This course is designed to help students understand the basic statistical concepts and analyses for facilitating management decisions. You will also learn to think critically about how statistics is used by others and how it impacts your day to day life. We will emphasize more on applying different statistical techniques, but sometimes we will still work on the derivation of the theories and formulas. The course focuses on sampling distribution, estimation, hypothesis testing, analysis of variance, chi-square tests, and regression analysis. We hope that at the end of this series of courses, you will be able to view decision-making problems that you will face in other courses or in your daily life from a statistical perspective. 這門課的目的是在學習如何使用基本的統計學的概念與分析的方法來幫助我們解決管理決策上的問題。雖然課程的內容將較著重在觀念的釐清與常用統計方法的應用，而不在於複雜的計算，但是我們還是會利用部份的授課時間來探討一些重要定理的推導，希望你對於一些重要的統計觀念不但能知其然，也能知其所以然。這是一個系列（兩學期）的統計課程中的第二部份，課程的內容含蓋抽樣分配、估計、假設檢定、變異數分析、卡方檢定與迴歸分析。
課程大綱： Outline of Lectures	

1 Course Introduction
2 Fundamental Sampling Distributions
3 Fundamental Sampling Distributions
4 One-Sample Interval Estimation Problems
5 One-Sample Interval Estimation Problems
6 One- and Two-Sample Tests of Hypotheses
7 One- and Two-Sample Tests of Hypotheses
8 Spring Break
9 Mid-term Exam
10 Analysis of Variance
11 Analysis of Variance
12 Goodness-of-Fit Test, Independence Test, Test for Homogeneity
13 Goodness-of-Fit Test, Independence Test, Test for Homogeneity
14 Simple Linear Regression and Correlation
15 Simple Linear Regression and Multiple Regression
16 Final Exam
17 (Online) Analysis of Variance
18 (online) Multiple Linear Regression

週次 課程主題
1 (2/18) 課程介紹
2 (2/25) 抽樣分配
3 (3/04) 抽樣分配
4 (3/11) 單一樣本與兩樣本估計問題
5 (3/18) 單一樣本與兩樣本估計問題
6 (3/25) 單一樣本與兩樣本假設檢定
7 (4/01) 單一樣本與兩樣本假設檢定
8 (4/08) 期中考試
9 (4/15) 變異數分析
10 (4/22) 變異數分析
11 (4/29) 卡方檢定
12 (5/06) 卡方檢定
13 (5/13) 簡單線性迴歸
14 (5/20) 簡單線性迴歸
15 (5/27) 多元迴歸分析
16 (6/03) 期末考試
17 (線上) 變異數分析
18 (線上) 多元線性迴歸

授課方式： Method of Instruction	講授 Lecture：60% 分組討論 Group discussion：10% 案例研討 Case study：5% 操做練習 Practical exercises：25% 講授 Lecture：Flip classroom teaching format is used in this course. Students need to watch 80~100 minute video lectures before (physically) attending each week's class.%
教科書： Textbooks	Walpole, Myers, Myers, and Ye (2012) Probability and Statistics for Engineers and Scientists, Ninth Edition, Prentice Hall.
參考書目： References	This course provides supplementary handouts, which have been placed on the course website. Students can download and print them according to their own needs. In addition, there is also one corresponding one-page handout coming with each video lecture. Students are also suggested to download and print those handouts from the Internet.
修課須知： Notice	The dates and information on the syllabus are approximate and are subject to change. Announcements will be made in class and sent to you via e-mail. You are responsible for checking this e-mail regularly.
評量方式： Grading	Class Attendance and Participation (5%) Homework (10%) Quizzes (20%) Mid-term Exam (20%) Final Exam (25%) Term Project (20%)

備註說明： Notes	(1) This is an important college level course and requires the appropriate amount of work to be completed. (2) Students are mature adults who can be responsible for their actions. (3) The instructor's office hours (or some review sessions) can be an excellent resource for you, but should not be considered as a substitute for class.