

國立東華大學
教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	應用統計分析			學年/學期 Academic Year/Semester	115/1
課程名稱(英文) Course Name in English	Applied Statistical Analysis				
科目代碼 Course Code	GSLMM0030	系級 Department & Year	碩士	開課單位 Course-Offering Department	運籌管理研究所
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)		3.0/3.0	
授課教師 Instructor	/Octavina				
先修課程 Prerequisite					

課程描述 Course Description

Applied Statistical Analysis introduces statistical methods for analyzing data and supporting evidence-based decision-making in business and management. The course emphasizes the practical application and interpretation of statistical techniques. Topics include descriptive statistics and data visualization, sampling and sampling distributions, interval estimation, hypothesis testing, statistical inference for one and two populations, chi-square tests, analysis of variance (ANOVA), experimental design, and regression analysis. The course also introduces selected advanced applications, including structural equation modeling, time series forecasting, and decision analysis. Through examples, exercises, and hands-on activities, students will develop the ability to select appropriate statistical methods, analyze data using statistical software, interpret results, and communicate statistical findings in a meaningful managerial context.

課程目標 Course Objectives

Establish students' abilities for the knowledge and understanding of statistics and applications in the management domain.

系專業能力 Basic Learning Outcomes		課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.'s Education Objectives
A	基礎供應鏈與運籌管理知識 Foundations on supply chain and logistics management	
B	供應鏈與運籌之系統管理知識 Knowledge on managing systems in supply chain and logistics	○
C	供應鏈與運籌之分析工具知識 Knowledge on logical and analytical tools for supply chain and logistics	●
D	語文表達能力 Language and communication 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: "Lying with Statistics"	
2	Data, Tabular, and Graphic Methods	Chapter 1, 2
3	Numerical Descriptive Measures	Chapter 3

4	Teacher' s Day (Holiday)	
5	Sampling and Sampling Distribution, Interval Estimation	Chapter 7, 8
6	Hypothesis Testing (One-Population and Two-Population)	Chapter 9, 10
7	Statistical Inference Concerning Variance, Goodness-of-fit and Chi-Square Tests	Chapter 11, 12
8	Taiwan Retrocession Day (Holiday)	
9	期中考試週 Midterm Exam -- Quiz 1	
10	Analysis of Variance (ANOVA)	Chapter 13
11	Experimental Design	
12	Regression Analysis	Chapter 14
13	Inference with Regression Models	Chapter 15
14	Introduction to Structural Equation Model	
15	Forecasting with Time Series Data	Chapter 18
16	Introduction to Data Mining	
17	期末考試週 Final Exam -- Quiz 2	

彈性 教學 規劃 Flexible Teaching Plan	請勾選(至少需勾選1 個項目): Please tick the box(es). (At least one item is required.): ☒ 問題討論 Problem-based Discussion ☐ 翻轉教學 Flipped Classroom ☐ 展演實作 Performance / Practical Presentation ☐ 校外參訪 Off-campus Visit ☐ 講座活動 Lecture / Seminar ☐ 線上作業 Online Assignments ☐ 自主學習 Self-directed Learning ☐ 課業輔導 Academic Support ☐ 實驗操作 Experiment Operation ☐ 遠距教學(同步) Distance Learning (Synchronous) ☐ 遠距教學(非同步) Distance Learning (Asynchronous) ☐ 其他(請填寫) Others (Please specify.): 備註: 本校學期週數自115 學年度起調整為17 週, 為符合1學分18 小時之原則, 請教師規劃安排彈性教學。 Note: From the 115th academic year, the semester will be 17 weeks. Please include flexible teaching activities to meet the required 18 hours per credit.
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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: In-class Workshop

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(含出缺席) General Performance (Attendance Record)									
期中考成績 Midterm Exam									
期末考成績 Final Exam									
作業成績 Homework and/or Assignments									
其他 Miscellaneous (_____)									
評量方式補充說明 Grading & Assessments Supplemental instructions									
In-class assignments + participation: 20% Homework (~4): 40% Quiz 1: 20% Quiz 2: 20%									
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.)									
Main textbook Jaggia, S., & Kelly, A. (2025). Business statistics: Communicating with numbers (5th ed.). McGraw Hill.									
Supplementary materials - Camm, J. D., Cochran, J. J., Fry, M. J., Ohlmann, J. W., Anderson, D. R., Sweeney, D. J., & Williams, T. A. (2024). Statistics for business and economics (15th ed.). - Groebner, D. F., Shannon, P. W., & Fry, P. C. (2024). Business statistics: A decision-making approach (11th ed.). Pearson. - Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate data analysis (8th ed.). Cengage. - Montgomery, D. C. (2019). Design and analysis of experiments (10th ed.). John Wiley & Sons. - Navarro, D. J., & Foxcroft, D. R. (2022). Learning statistics with JASP: A tutorial for psychology students and other beginners (Version 0.16). University of New South Wales. Learning Statistics with JASP									
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.)									
其他補充說明 (Supplemental instructions)									
Software JASP (download here: https://jasp-stats.org/download) will be used as the primary statistical software for demonstrations and in-class activities throughout the course. Students are encouraged, but not required, to use JASP. Other statistical software, such as R, Python, or SPSS, may also be used, provided that students are able to perform the required analyses and appropriately interpret the results. Please note that software demonstrations and step-by-step instructions provided in class will primarily be based on JASP. As statistical software will be used regularly for exercises and in-class activities, students are strongly encouraged to bring a laptop to every class meeting.									