

 國立東華大學  
教學計劃表 Syllabus

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| 課程名稱(中文)<br>Course Name in Chinese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 應用統計分析方法                                                                                                      |                             |    | 學年/學期<br>Academic Year/Semester    | 114/2         |
| 課程名稱(英文)<br>Course Name in English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Applied Statistic analysis                                                                                    |                             |    |                                    |               |
| 科目代碼<br>Course Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NRESM0440                                                                                                     | 系級<br>Department & Year     | 碩士 | 開課單位<br>Course-Offering Department | 自然資源與環境學系     |
| 修別<br>Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 選修 Elective                                                                                                   | 學分數/時間<br>Credit(s)/Hour(s) |    | 3.0/3.0                            |               |
| 授課教師<br>Instructor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | /李俊鴻                                                                                                          |                             |    |                                    |               |
| 先修課程<br>Prerequisite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                               |                             |    |                                    |               |
| 課程描述 Course Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                               |                             |    |                                    |               |
| <p>Applied Statistical Methods covers the fundamental understanding of statistical methods necessary to deal with a wide variety of practical problems. We focusing on presents the topics covered in a manner that stresses clarity of understanding, interpretation, and method of application.</p> <p>This is an introductory course for students in NRES and CES. In this course the students will learn the principles and methods of statistical analysis, but will also put them into practice using a range of real-world data sets. The objective is to provide a basic understanding of data analysis using statistics and to use computational tools on problems of applied nature. Moreover, we also can use this method to analyze the research questions on ecotourism, tourist attractions, environmental education, protected area management, human-wildlife conflicts, and the endangered species conservation et al.</p> |                                                                                                               |                             |    |                                    |               |
| 課程目標 Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                               |                             |    |                                    |               |
| <p>This is an introductory course for students in NRES and CES. In this course the students will learn the principles and methods of statistical analysis, but will also put them into practice using a range of real-world data sets. The objective is to provide a basic understanding of data analysis using statistics and to use computational tools on problems of applied nature. Moreover, we also can use this method to analyze the research questions on ecotourism, tourist attractions, environmental education, protected area management, human-wildlife conflicts, and the endangered species conservation et al.</p>                                                                                                                                                                                                                                                                                                       |                                                                                                               |                             |    |                                    |               |
| 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 applied statistical method                                                                    |                             |    |                                    |               |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Introduction to statistical/data analysis software, Data definition<br>Descriptive statistics and Correlation |                             |    |                                    | SPSS & LIMDEP |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Individual report I- Data definition, Descriptive statistics and Correlation                                  |                             |    |                                    |               |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Hypothesis test and One-way ANOVA                                                                             |                             |    |                                    |               |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Individual report II-Hypothesis test and One-way ANOVA                                                        |                             |    |                                    |               |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Multiple Regression Analysis (1)<br>Logistic Regression: Regression with a Binary Dependent Variable(1)       |                             |    |                                    |               |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Multiple Regression Analysis (2)<br>Logistic Regression: Regression with a Binary Dependent Variable(2)       |                             |    |                                    |               |

|    |                                                                                                        |  |
|----|--------------------------------------------------------------------------------------------------------|--|
| 8  | Individual report III-Regression with a Binary Dependent Variable                                      |  |
| 9  | Exploratory Factor Analysis<br>Cluster analysis, Cross table & Chi-square test                         |  |
| 10 | Individual report IV<br>Exploratory Factor Analysis<br>Cluster analysis, Cross table & Chi-square test |  |
| 11 | Conjoint Analysis<br>Structural Equations Modeling Overview<br>Importance-Performance Analysis         |  |
| 12 | Individual report V<br>Importance-Performance Analysis                                                 |  |
| 13 | Contingent valuation and Choice Experiment 1                                                           |  |
| 14 | Contingent valuation and Choice Experiment 2                                                           |  |
| 15 | Individual report VI<br>Choice Experiment                                                              |  |
| 16 | Overall discussion                                                                                     |  |
| 17 | Final Report 1                                                                                         |  |
| 18 | Final Report 2                                                                                         |  |

#### 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:

#### 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:

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| 學期成績計算及多元評量方式 Grading & Assessments                                                                                                                   |                    |                    |          |          |          |          |          |          |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|----------|----------|----------|----------|----------|----------|----|
| 配分項目<br>Items                                                                                                                                         | 配分比例<br>Percentage | 多元評量方式 Assessments |          |          |          |          |          |          |    |
|                                                                                                                                                       |                    | 測驗<br>會考           | 實作<br>觀察 | 口頭<br>發表 | 專題<br>研究 | 創作<br>展演 | 卷宗<br>評量 | 證照<br>檢定 | 其他 |
| 平時成績(含出缺席)<br>General Performance<br>(Attendance Record)                                                                                              | 20%                |                    | ✓        | ✓        |          |          |          |          |    |
| 期中考成績 Midterm Exam                                                                                                                                    |                    |                    |          |          |          |          |          |          |    |
| 期末考成績 Final Exam                                                                                                                                      | 20%                |                    | ✓        | ✓        | ✓        |          |          |          |    |
| 作業成績 Homework and/or<br>Assignments                                                                                                                   | 60%                |                    | ✓        | ✓        |          |          |          |          |    |
| 其他 Miscellaneous<br>(_____)                                                                                                                           |                    |                    |          |          |          |          |          |          |    |
| 評量方式補充說明<br>Grading & Assessments Supplemental instructions                                                                                           |                    |                    |          |          |          |          |          |          |    |
|                                                                                                                                                       |                    |                    |          |          |          |          |          |          |    |
| 教科書與參考書目(書名、作者、書局、代理商、說明)<br>Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)                                            |                    |                    |          |          |          |          |          |          |    |
| Joseph F. Hair Jr. William C. Black Barry J. Babin Rolph E. Anderson, 2014, "Multivariate Data Analysis, " 7th ed., Prentice-Hall                     |                    |                    |          |          |          |          |          |          |    |
| 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)<br>Teaching Aids & Teacher's Website(Including online teaching information.<br>Personal website can be listed here.) |                    |                    |          |          |          |          |          |          |    |
| <a href="https://scholar.google.com/citations?user=N3A3en0AAAAJ&amp;hl=en">https://scholar.google.com/citations?user=N3A3en0AAAAJ&amp;hl=en</a>       |                    |                    |          |          |          |          |          |          |    |
| 其他補充說明 (Supplemental instructions)                                                                                                                    |                    |                    |          |          |          |          |          |          |    |
|                                                                                                                                                       |                    |                    |          |          |          |          |          |          |    |