# 生物統計學 Biostatistics

| 科號 | | 組別 | | 學分 | 3 | 人數限制 | 30 |
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| 修課年級 | □ 大學部 二 年級以上<br>□ 碩士班一年級以上(含博士班)<br>□ 碩士班二年級以上(含博士班) | | | | | | |
| 上課時間 | T6R7R8 | | | 教室 | 220 + 217 | | |
| 科目中文名稱 | 生物統計學 | | | | | | |
| 科目英文名稱 | Biostatistics | | | | | | |
| 任課教師 | 張筱涵 | | | | | | |

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| 一、課程說明 | This 3-credit course is designed for undergraduate students pursuing a biology major. The course format includes a lecture portion covering statistical concepts that are relevant for analyzing biological data, and a computer laboratory component covering usage of R software to perform the analyses described in lecture. It assumes no previous coding experience in R or any other programming language. |
| 二、指定用書 | Michael C. Whitlock and Dolph Schluter. 2014. *The Analysis of Biological Data (Second Edition)*. Roberts and Company Publishers, Greenwood Village, Colorado. (ISBN-10: 1936221489) |
| 三、教學方式 | Lecture and computer laboratory |
| 四、教學進度 | Week 1: Course overview and introduction to statistics (Chapter 1)<br>Week 2: Data visualization (Chapter 2-3)<br>Week 3: Probability distributions (Chapter 5)<br>Week 4: Inference from samples (Chapter 4)<br>Week 5: Hypothesis testing (Chapter 6-7)<br>Week 6: Goodness-of-fit test and contingency analysis (Chapter 8-9)<br>Week 7: Normal distribution and one-sample inference (Chapter 10-11)<br>Midterm<br>Week 8: Comparing two means (Chapter 12)<br>Week 9: Non-parametric tests (Chapter 13)<br>Week 10: Analysis of variance (Chapter 15)<br>Week 11: Correlation and regression I (Chapter 16-17)<br>Week 12: Correlation and regression II (Chapter 17-18)<br>Week 13: Computationally-intensive methods (Chapter 19) and project presentation<br>Week 14: Likelihood and Bayesian analysis and project presentation (Chapter 20)<br>Week 15: Meta-analysis and project presentation (Chapter 21)<br>Final exam |
| 五、成績考核 | Problem sets: 30%; Midterm: 25%; Final: 30%; Project presentation: 15% |