

# Introduction to Mathematical Statistics

## Course Syllabus

- Course Information:  
Term: 1<sup>st</sup> Semester 2021  
Time: T3T4R4  
Room: 綜合三館 834
- Instructors: Cheng-Yu Sun (孫誠佑, main instructor) and Nan-Jung Hsu (徐南蓉)
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Nan-Jung Hsu  
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- Textbook: *Introduction to Mathematical Statistics (4<sup>th</sup> ed.)* by Hogg and Craig.  
Publisher: Macmillan Publishing Co., Inc.
- Office hour: TBA
- Outline:
  1. Review: Basic on Probability
  2. Joint/Marginal/Conditional Distributions
  3. Expectation
  4. Sampling Distribution and Limiting Distribution
  5. Central Limit Theorem
  6. Maximum likelihood
  7. Fisher Information
  8. Sufficiency and UMVUE
  9. Bayesian Estimation
  10. Interval Estimation
  11. Hypothesis Testing
  12. Contingency Tables
  13. Linear Regression

- Grading:

Your grade will be determined by assignments (30%), a midterm exam (30%), and a final exam (40%).

- Course Pre-requisites: Calculus