

Mathematical Statistics II 304029001 Syllabus

Fall 2026

A. Instructor Information.

- Instructor: Huang, Tzee-Ming
- Email: tmhuang@nccu.edu.tw
- Office hours: Monday 8:00-10:00 and by appointment

B. Textbook and reference.

- Textbook. Introduction to Mathematical Statistics (8th Edition) by Hogg, McKean, and Craig.
- Reference. Introduction to Probability and Mathematical Statistics by Bain.

C. Course Objective(s).

D. Grading Policy.

- Optional work: $x\%$, where $0 \leq x \leq 30$ is determined by homework scores.
- Midterm Exam: $(50 - 0.5x)\%$
- Final Exam: $(50 - 0.5x)\%$
- The Midterm Exam covers material taught during Week 1 – Week 7, and the Final Exam covers material taught during Week 9- Week 15.
- The Midterm Exam and Final Exam are closed book and closed notes exams.
- Most exam problems are modified from basic homework problems.

E. Tentative Class Schedule.

Week	Content	Reading chapter(s)
1	Conditional distributions and expectations (Sec. 2.3)	2
2	Independence, covariance and correlation (Sec. 2.4-2.5)	2
3	Multivariate normal distributions (Sec. 3.5)	3
4	Convergence in Probability, Convergence in Distribution (Sec. 5.1, 5.2)	5
5	Approaches for Parametric Estimation (Sec. 6.1, 6.4)	6
6	Approaches for Parametric Estimation (Sec. 6.2)	6
7	Sufficiency, Order Statistics, Basu theorem (Sec. 4.4, 7.1, 7.2, 7.9)	4, 7
8	Midterm Exam	
9	Sufficiency and completeness, MVUE (Sec. 7.3, 7.4)	7
10-11	Confidence Intervals (Sec. 4.2)	4
12	Tests of Hypotheses (Sec. 4.5, 4.6)	4
13-14	Optimal Tests of Hypothesis (Sec. 8.1, 8.2)	8
15	Goodness of fit tests	
16	Final Exam	

- The topics in the above tentative class schedule are subject to modification. Up-to-date reading schedule will be posted after the class starts on the course web site at

https://stat.walkup.tw/teaching/math_stat_under/F26/homepage.html

F. **Expected time for studying outside class.** Students are expected to spend 3–6 hours on this course (for reviewing/previewing the course material) outside class every week.