

COURSE DETAIL

MATHEMATICAL STATISTICS II

Country

Korea, South

Host Institution

Yonsei University

Program(s)

Yonsei University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Statistics

UCEAP Course Number

111

UCEAP Course Suffix**UCEAP Official Title**

MATHEMATICAL STATISTICS II

UCEAP Transcript Title

MATHEMATICAL STAT 2

UCEAP Quarter Units

4.50

UCEAP Semester Units

3.00

Course Description

This course covers the properties and applications of maximum likelihood estimation (MLE), including its consistency, asymptotic normality, and efficiency, and applies these concepts to real-world statistical problems. Students analyze hypothesis testing frameworks, covering the Neyman-Pearson lemma, likelihood ratio tests, and their implementation for single-parameter and multi-parameter models and study the principles of sufficiency and completeness in statistical inference and use the factorization theorem to identify sufficient statistics for various distributions. Students also explore confidence interval construction methods, focusing on pivotal quantities, and evaluate their properties such as coverage probability and efficiency and we apply advanced inferential techniques to solve problems involving exponential families, sequential analysis, and decision-theoretic approaches, linking theory to practice.

Prerequisites: Mathematical Statistics I, Linear Algebra, Calculus

Language(s) of Instruction

English

Host Institution Course Number

STA3109

Host Institution Course Title

MATHEMATICAL STATISTICS II

Host Institution Course Details

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed

2025-2026

[Print](#)