

COURSE DETAIL

MATHEMATICAL STATISTICS

Country

Korea, South

Host Institution

Korea University

Program(s)

Korea University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Statistics

UCEAP Course Number

110

UCEAP Course Suffix**UCEAP Official Title**

MATHEMATICAL STATISTICS

UCEAP Transcript Title

MATHEMATICAL STATS

UCEAP Quarter Units

4.50

UCEAP Semester Units

3.00

Course Description

This course develops and interprets the mathematical foundations of statistics including theories of stochastic variables, variable transformations, sample distribution, estimation, and hypothesis testing.

Students explore calculus and probability theory necessary to analyze data and draw statistical inferences about the population. Thus, there is a major focus on deriving statistical estimators which are functions of data and a focus on studying their statistical properties. The course covers point and interval estimation methods which are widely used in academia and industry. After establishing statistical procedures to obtain inference about the population, we apply them to real problems by using Excel. If time permits, we will talk about linear regression models and Bayesian methods, which are both essential in quantitative finance, actuarial science, medical science, etc. Please note that the lectures are in-depth regarding mathematical proofs of theorems in the textbook; students should expect the class to be theoretical and rigorous.

Prerequisites: An undergraduate level understanding of calculus and probability. Students should have a solid understanding of integral with one variable (calculus with two variables will be very helpful for advanced topics) and integral by parts.

Language(s) of Instruction

English

Host Institution Course Number

STAT232

Host Institution Course Title

MATHEMATICAL STATISTICS

Host Institution Course Details

<https://infodepot.korea.ac.kr/lecture1/lecsystemPlanViewNew.jsp?year=2025&term...>

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed

2025-2026

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