

# BIEN 203. INTRODUCTION TO STATISTICS AND DATA SCIENCE

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Credits: 3

Offered by: Bioengineering (Faculty of Engineering)

Terms offered: Fall 2025, Winter 2026

View offerings for Fall 2025 or Winter 2026 in Visual Schedule Builder.

## Description

Probability, adding and multiplying probabilities, conditional and joint probabilities, variables, independence, confidence intervals, p- values and null models, central limit theorem, law of large numbers, statistical power, data normalization, pseudo-counts, T-tests, U test, ANOVA, Chi-squared test, Fisher's exact test, Kolmogorov- Smirnov test, sampling/ simulated null models, Monte Carlo methods, random walks, multiple-testing correction, data visualization, linear regression, clustering, dimensional reduction, data integration and classification. Analysis of large datasets, use and automation of functions from the Statsmodels and Matplotlib Python modules.

- Corequisites: COMP 208

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