

# STAT 448/848

# 2026-2027

# Multivariate Data Analysis

# T2

## Instructor:

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## Course Details

STAT 448 CRN 32904  
STAT 848 CRN 21836

## Schedule:

Term 2  
M, W, F 12:30 – 1:20 pm

## Tentative Topics:

Some of the topics covered will include:

- descriptive statistics and graphical techniques
- Matrix algebra and random vectors
- Multivariate normal distribution
- Inferences about a mean vector
- Comparing two and several population means
- Multivariate Linear Regression models
- Principal component analysis,
- Factor analysis
- canonical correlation
- Discrimination and classification
- Clustering (if time permits)

## Course Objective:

Upon completion of this course, a student will be able to

- apply the graphical tools to visualize multivariate data;
- use some basic matrix algebra for statistical use and be able to use it to understand the multivariate methods;
- understand and use multivariate analysis for one, two, and several population inference on mean vectors;
- understand the general concepts of linear regression and use the multivariate linear regression methods;
- understand and apply techniques for analysis of covariance structures (principal component analysis, factor analysis, canonical correlation);
- use classification and discrimination methods and interpret the results properly.
- use appropriate statistical software (R) to implement the methods covered in the course.

## Students Who May Be Interested:

Undergraduate and graduate students in Statistics, Computer Science, Agriculture, and Plant Science.