STAT 353: Environmental Statistics

A. Course Description

Credits: 4

Prerequisites: STAT 201 Statistics I or equivalent. Familiar with statistical software

Lab Hours/ Weeks: Corequisites: None

Lecture Hours/ Week :

MnTC Goals: Goal LS - Upper Division Liberal Studies, Goal 10 - People/Environment

This course covers the intermediate statistical methods in analyzing environmental and biological datasets. This course is built on the knowledge of an introductory statistics and hypothesis testing. The contents of the course include paired T-test, unpaired T-test, F-tests, one-way and two-way ANOVA, multivariate ANOVA, repeated measures, regression, principle component analysis and cluster analysis. Students will learn how to use statistical software to perform all the analyses.

B. Course Effective Dates: 01/12/2015 - Present

C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Understand datasets related to environmental and biological science.
2. Choose an appropriate statistical analysis method for environmental and biological data
3. Perform accurate statistical analysis to real world data in environmental and biological science
4. Use computer software to perform statistical analyses correctly
5. Interpret the data analysis results using a non-technical language to geoscientists, ecologists and biologists
6. Understand the statistical models for environmental data

E. Learning Outcomes (MN Transfer Curriculum)

Goal LS - Upper Division Liberal Studies
None

Goal 10 - People/Environment

1. Propose and assess alternative solutions to environmental problems.
2. Explain the basic structure and function of various natural ecosystems and of human adaptive strategies within those systems.
3. Discern patterns and interrelationships of bio-physical and socio-cultural systems.
4. Describe the basic institutional arrangements (social, legal, political, economic, religious) that are evolving to deal with environmental and natural resource challenges.
5. Evaluate critically environmental and natural resource issues in light of understandings about interrelationships, ecosystems, and institutions.
6. Articulate and defend the actions they would take on various environmental issues.

F. Special Information

None