Bemidji State University

ENVR 3800: Environmental Data Analysis

A. COURSE DESCRIPTION

  Credits: 3
  Lecture Hours/Week: 0
  Lab Hours/Week: 0
  OJT Hours/Week: *
  Prerequisites: None
  Corequisites: None
  MnTC Goals: None

  The aim of this course is to expose students to both introductory and advanced analytical methods for environmental applications. The class will provide a primer on introductory inferential statistics (sampling, probability, central tendencies, spread, t-tests and ANOVA) and work towards more advanced analytical applications which are geared towards research questions in Environmental Studies, Geology, and Geography. These techniques include multiple regression, logistic regression, multi-dimensional scaling, regression trees, cluster analysis, survival analysis and basic time series analysis. This class will focus on learning both the theoretical background and application of these methods and discuss the ethical and contextual issues that surround the use of statistical analysis in environmental research.

B. COURSE EFFECTIVE DATES: 01/12/2020 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

  1. Research design
  2. Foundational statistical methods
  3. Environmental Analysis

D. LEARNING OUTCOMES (General)

  1. develop a solid foundation in basic inferential statistics and sampling techniques.
  2. successfully design a research project and appropriately state research and null hypothesis statements.
  3. develop the ability to identify the correct data and statistical test to utilize for any given study.
  4. gain a basic proficiency in multiple statistical software including SPSS, Minitab and R.
  5. explain and apply advanced environmental analytical methods including multiple regression, logistic regression, multi-dimensional scaling, regression trees, cluster analysis, survival analysis and basic time series analysis.
  6. design, carry out, and disseminate results from a study using an advanced environmental analytical method.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

  None

F. LEARNER OUTCOMES ASSESSMENT

  As noted on course syllabus

G. SPECIAL INFORMATION

  None noted