

REMINDER: Syllabi are to be used to evaluate general content, are not binding, and may/may not include updates for the upcoming semester.

# DATA ANALYSIS IN CIVIL ENGINEERING

Mississippi State University  
Spring 2013

## CLASS

Monday and Wednesday at 3:30 to 4:45 pm  
McCain 125

## FACULTY

Seamus Freyne, Ph.D., P.E., M.ASCE  
Civil and Environmental Engineering Department  
Available at 11:00 to 11:50 am on class days  
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## COURSE ABSTRACT

Ours is fast becoming the statistical age, as every discipline is increasingly data intensive, and this is made possible by many new sources of data. Useful information can be extracted from sometimes massive and diverse data sets to accelerate discovery and innovation to the benefit of society. This course builds on an introductory statistics course and counts as three credits at the graduate level.

## TEXTBOOKS AND REFERENCE

*A Second Course in Statistics: Regression Analysis* by W. Mendenhall and T. Sincich, 7/e, 2011  
*The Signal and the Noise: Why So Many Predictions Fail, but Some Don't* by N. Silver, 2012

*Statistics for Engineering and the Sciences* by W. Mendenhall and T. Sincich, 5/e, 2006

## LEARNING OBJECTIVES

- Review introductory statistics
- Understand how statistics can mislead
- Build regression models
- Use both quantitative and qualitative variables
- Examine regression residuals
- Forecast with time series models
- Employ the principles of experimental design
- Use a statistical program of choice
- Research a topic of interest
- Keep up with recent events in data analysis and civil engineering

## ASSESSMENT

Citizenship	0%	Attendance Attentiveness Professionalism
Assignments	40%	Usually weekly
Quizzes	20%	About every three weeks On recent material
Project	20%	An individual effort
Final Exam	20%	Comprehensive in scope Monday, 4/29 at 3:00 pm

## GRADES

The grade standards are traditional though leniency adjustments may be made

A	90% and above
B	80% to 90%
C	70% to 80%
D	60% to 70%
F	Below 60%

## EXPECTATIONS AND POLICIES

- Work consistently and smartly
- Come to class regularly and on time
- Ask questions if you do not understand
- Be respectful and supportive of others
- Do not come to class in any MSU rivals' apparel
- Do not eat in class
- Put away smartphones
- Only use those calculators approved by NCEES
- If you miss class, ask a friend to share the lecture material
- Inform me in advance of any quiz/exam you will miss if you have a legitimate excuse
- Settle questions about scores on any quiz/exam within three days of when the work is returned
- Promptly see me if you have any concerns or special circumstances
- Avoid violations of the MSU Student Honor Code