ESM 206 - STATISTICS & DATA ANALYSIS FOR ENVIRONMENTAL SCIENCE AND MANAGEMENT

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Tentative topics by date
4 jan Distributions (slk)
6 jan Data Visualization (slk)
11 jan Sampling Design (slk)
13 jan Inference & hypothesis testing (slk)
18 jan Linear Regression (slk)
20 jan ANOVA (slk)
25 jan ANOVA (slk)
27 jan Power Analysis (slk)
1 feb Nonlinear regression (seh)
3 feb Logistic Regression (seh)
8 feb Multiple Regression (seh)
10 feb Model Selection for Multiple Regression (seh)
15 feb Non-parametric methods (slk)
17 feb BACI and related higher order analytical designs (slk)
22 feb ANCOVA (seh)
24 feb Regression & Experimental Design (seh)
1 mar Randomization & Bootstrapping (seh)
3 mar Multivariate Distance & Mantel Tests (seh)
8 mar Intro to Multivariate Analysis & Visualization (seh)
10 mar Efficient Data Management (seh)

Readings
There is no text to buy. You may at times find helpful readings in Helsel & Hirsch: http://pubs.usgs.gov/twri/twri4a3/html/pdf_new.html
Generally, we will suggest or require readings from the primary literature or other resources online, and will link them from the course website a week or so in advance.

**Class format**
Lectures meet twice per week in Bren 1414:
Tuesday & Thursday 1:00 – 2:15pm

Assignments and grading
Learning to actually do statistical analysis requires practice, so we will provide problems to work on in the lab sections. These will include both exercises in running specific analyses and interpreting the results, and exercises where you have to decide what sort of analysis to do.

In approximately Weeks 4 & 9, you will receive a “microexam” to take home, which will be several problems, typically requiring that you both make some conceptual decisions and then run an analysis.

The practice problems in the lab may be worked in groups, and you may ask anyone for help.

However, you must work on the microexam on your own - you can use books, readings and online resources, but you cannot talk to your peers about the problem or ask anyone for help.

In class, we will do occasional written or oral question & answer; the point is that "retrieval" of information through writing or speaking helps to solidify concepts during learning.

Contact
We spend very little time on campus. Both our offices are downtown, just 2 blocks from the Carrillo bus transit center ([http://www.sbmtd.gov/Lines/Line_24x.htm](http://www.sbmtd.gov/Lines/Line_24x.htm)) . We can set up meetings at our offices downtown, or potentially on campus before class. **Email** is the best way to reach us; please put **ESM206** in the subject line. Neither of us checks voicemail very frequently.