Offering a Balanced Diet at the Learning Buffet

Today’s Special: A Course in Environmental Statistics

Educational Objectives ▼
Master fundamentals of:
> Statistical data analysis
> Environmental engineering laboratory and field methods
> Oral, written, visual, and multimedia technical communication skills

Approach ▼
> Provide multiple learning venues (see figure)
> Focus on one topic per week
> Integrate traditional, hands-on, and computer-based learning (see legend)

Sponsors ▼
> Cherne Foundation
> Dow Foundation
> National Science Foundation CCLI, Grant: DUE9950506
> Michigan Tech

More Information ▼
Prof. Kurt Paterson
Michigan Technological University Civil & Environmental Engineering Houghton, MI 49931-1295 USA
paterson@mtu.edu (906) 487-3495

http://bigmac.cee.mtu.edu/emma.html

Statistical methods
(one per week)
> Bias, precision
> Smoothing
> Distributions
> Confidence
> Detection limits
> Standard conformance
> Assessing differences
> Analysis of variance
> Experimental design
> Error propagation

Environmental fundamentals
(one from each per week)
> Engineered or natural systems
> Environmental biology, chemistry, or physics
> Water, wastewater, air, or solid waste
> Environmental, health, or social impacts

Skills
(all every week)
> Communication
> Computer
> Teamwork
> Laboratory

Learning Tools
- Communication
- Computer
- Teamwork
- Laboratory
- Presentation
- Reports
- Feedback
- Data analysis
- Interpretation
- Work synthesis
- Analytical methods
- Sampling strategies
- Data collection
- Experimental design
- Error propagation
- Statistical data analysis
- Environmental engineering laboratory and field methods
- Oral, written, visual, and multimedia technical communication skills

Legends:
- lecture
- textbook
- software
- web media
- laboratory instrumentation
- group work