Instructor: Jerry Magloughlin, NR307, 491-1812, 491-5661 (main office), e-mail: jerrym@cnr.colostate.edu
Office hours: T: 9:15-10:00, & TBA. Otherwise by appointment: call, e-mail, or see me after class.
Lecture: Time: 12-1:50 R Room NR301
Prerequisites: A previous statistics course Credits: 3
E-mail: Use e-mail to contact me for short questions; call me, stop by during office hours, or schedule an appointment for longer questions. Because we only meet twice a week, I may send out an occasional email with an announcement or clarification, so be sure you have your email up-to-date with the university.
Review sheets & other helpful materials: May be sent out prior to exams.
Grading and Exams:
- Grading will be based on 3 midterms (20% each), final project (10%), homeworks (20%), and the final (10%). The final is cumulative.
- Grading will be based on percentages; assume 90/80/70/60 as the A/B/C/D cutoffs. Plus/minus with B & A only.
- There is no "extra credit" except for questions on the exams based directly on the text.

Exam Schedule
Exam 1: week 4
Exam 2: week 8
Exam 3: week 12
Final: December 13 9:40-11:40

Special Dates
August 22, 2011 Classes begin
October 17, 2011 Course withdrawal period ends
November 21-25, 2011 Fall Recess
December 9, 2011 Classes end
December 12, 2011 Final examinations week begins

GOALS & GENERAL
In this course we will stress computational understanding of how common statistical methods work, and when and how they should be applied to Geosciences data, as well as reasonable, quantitative scientific thinking. Sampling, assumptions, data transformation, and practical, problem-solving applications will be emphasized. Use of Excel and SPSS will be required. These programs are available in the college computer laboratories on the first and second floors of the Natural Resources building. If you do not already have one, you should obtain a computer account and an e-mail address immediately. This can be accomplished in the NR computer lab on the first or second floor. If you have a suitable data set for use with your final project, that’s ideal, but otherwise we will supply you with one to work on, or you can propose a scheme for collecting suitable data.

ON LINE SOURCES OF INFORMATION
An excellent on-line textbook is found at: http://www.statsoft.com/textbook/stathome.html

OTHER TEXTS

TENTATIVE LECTURE OUTLINE (NOT NECESSARILY IN THIS ORDER)

1. Introduction; Use and Abuse of Statistical Data Analysis; the Scientific Method
2. Data Collection and Preparation (types of data; populations and samples; sampling strategies).
3. Statistics with One Variable (exploratory data analysis, probability, normal distribution, statistical inference, ANOVA)
4. Statistics with Two Variables (correlation and regression)
5. Non-Parametric Statistics
6. Analysis of Directional Data (circular statistics)
7. Analysis of Time-Series Data (Markov chains; series of events; time series analysis)
8. Analysis of Geographically Distributed Data (distribution of points, graphical display, trend surface analysis, surface estimation [including general surface estimation techniques and kriging])
9. Multivariate Methods (introduction to matrix algebra, multiple linear regression, discriminate function analysis, factor analysis, cluster analysis)
10. Student final projects & brief presentations.

Statistics lab and consulting on campus for faculty and grad students:
http://www.stat.colostate.edu/consulting/stat_lab.html

“Far better an approximate answer to the right question, which is often vague, than an exact answer to the wrong question, which can always be made precise.” --John Tukey, 1962, Ann. Math. Stat. 33: 13

"To consult the statistician after an experiment is finished is often merely to ask him to conduct a post-mortem examination. He can perhaps say what the experiment died of." --R.A. Fisher
Regarding academic integrity:

- This course will adhere to the Academic Integrity Policy of the Colorado State University General Catalog (Page 7) and the Student Conduct Code.

- Academic integrity as it applies to course components (homework, written assignments, lab work, group projects, quizzes, and exams; the use of class notes, study sheets, and solution manuals; appropriate uses of sources, Internet or otherwise; receiving assistance from others; and the use of prior work).

- If in doubt—ask. I will never take anyone to task for asking about what is and what is not acceptable behavior. I realize that many of you may encounter new situations that deserve guidance. See: http://learning.colostate.edu/integrity/index.cfm for positive guidance on academic integrity.

- Academic integrity is important to me. Among many other things, its presence or absence shapes my perception of you as a person and a potential professional in this field, and these things, of course, shape potential letters of recommendation I might write for you in the future.

- Consequences of academic misconduct can include failures on exams or assignments, failure for the course (potentially with no recourse for removing it), up to expulsion from the university.

- University prescribed procedures will be followed when academic misconduct is suspected.

- You may be, at any time in this course, be required to sign an honor pledge: "I will not give, receive, or use any unauthorized assistance."

- Article III of the Colorado State University Student Conduct Code, found at http://www.conflictresolution.colostate.edu/conduct-code. You are henceforth considered bound by this code. This information begins thus:

**Article III: Proscribed Conduct**

**A. Conduct—Rules and Regulations**

Any student or student organization found to have committed or to have attempted to commit the following misconduct is subject to disciplinary sanction.

1. Academic misconduct including but not limited to: cheating, plagiarism, unauthorized possession or disposition of academic materials, falsification, or facilitation of acts of misconduct. Plagiarism includes the copying of language, structure, images, ideas, or thoughts of others and is related only to work submitted for credit. Disciplinary action will not be taken for academic work in draft form. Specific procedures for cases of academic misconduct are also described in the Academic Integrity Policy in the General Catalog, the Graduate Student Bulletin, the Faculty Manual, the Honor Code of the Professional Veterinary School, or the Honor Code of the School of Public Health as applicable.

2. Knowingly furnishing false information to any University official, faculty member, office, organization or on any University applications. Intentionally initiating or causing to be initiated any false report; any warning or threat of fire, explosion, or any other emergency.