

STAT 550 - TECHNIQUES OF STATISTICAL CONSULTING
2011-2012

Term 2, T & Th 2:30-3:50, LSK 301

Instructor: Rollin Brant, LSK 308d

Description: The overall objective of this course is to train students to apply their statistical knowledge, to develop the skills required to work with non-statisticians either as consultant or collaborator, and to communicate effectively, both orally and in writing, with non-statisticians.

Specific objectives are to provide simulated and real exposure to the process of statistical consultation and thereby to develop:

- the techniques required to attain a clear understanding of a client's needs,
- the oral and written skills that facilitate communication with clients,
- the ability to write succinct, comprehensive and understandable reports,
- a working knowledge of the aids, hard and soft, required in consultation,
- an understanding of the processes involved in solving statistical problems,
- an awareness of the knowledge base that underlies statistical consulting.

Most course activities will be organized around a series of case studies based on former and current projects from our Statistical Consulting and Research Laboratory (SCARL), consulting projects of Statistics faculty, and other sources. For each case study, the practical problem will be presented and students will be required to participate in:

- formulation of problems in practical contexts,
- written and oral presentations of proposed approaches,
- data management, data exploration and model building,
- written and oral presentations of results of analyses,
- critical and interactive discussion of all aspects of the case study.

Lectures on special topics arising from the case studies will be arranged as necessary. Occasional lectures by others (e.g., guest consultants) may also be arranged.

Corequisite: STAT 404, or its equivalent.

Practical Prerequisites: A substantial background in the statistical sciences, good oral and written communication skills, and an interest in statistical consultation.

Recommended Reading:

C. Chatfield (1995). *Problem Solving: A Statistician's Guide*, 2nd edition. Chapman & Hall.
J. Derr (2000). *Statistical Consulting: A Guide to Effective Communication*. Brooks/Cole.

Additional References: A list will be provided in the first class.

Notes:

1. STAT 550 is **required** of all Statistics graduate students, although students with equivalent coursework or consulting experience may apply for an exemption.
2. STAT 550 is graded on a Pass/Fail basis. To earn a Pass, students must demonstrate they have attained the objectives outlined above.
3. STAT 550 (and 551) develop the skills required for employment as a SCARL RA and for success in jobs involving applied work in statistics (including academic positions).