

1. Catalog Description

STAT 465 Statistical Communication and Consulting (4)

Blending of the theoretical and practical aspects of statistical consulting. Development of tools necessary to conduct effective consulting sessions, present oral arguments and written reports, work collaboratively to solve problems, and utilize professional publications in statistics. 2 lectures, 2 activities. Prerequisite: Successful completion of at least one STAT 400-level course and senior standing.

2. Required Background and/or Experience

Successful completion of at least one STAT 400-level course and senior standing.

3. Expected Outcomes

The student should be able to:

- a. understand the characteristics of an effective consultant, a satisfied client, and a successful consulting session.
- b. plan and implement a consulting session
- c. facilitate effective communication with a client
- d. ask appropriate questions in a consulting session
- e. deal effectively with a variety of consulting situations
- f. be aware of issues involving statistical ethics
- g. find creative solutions to consulting problems, both individually and as part of a team
- h. effectively present oral and written arguments
- i. utilize professional publications and resources in statistics and other related fields.

4. Text and References

Possible Texts :Derr, J., *Statistical Consulting: A Guide to Effective Communication*, Duxbury, 2000.
Spurrier, J., *The Practice of Statistics: Putting the Pieces Together*, Duxbury, 2000.
Trumbo, B., *Learning Statistics with Real Data*, Duxbury, 2002.

5. Minimum Student Materials

None.

6. Minimum University Facilities

Classroom with chalkboards and audiovisual equipment.
Classroom containing videotaping and videoviewing equipment.
Computer access for each student is needed.
The Statistics Studio Classroom is preferred for this course.

7. Expanded Description of Content

CONTENT	NUMBER OF LECTURES
1. An Introduction to Statistical Consulting	2
a. What is statistical consultation?	
b. Who does statistical consultation?	
c. Who are the clients of a statistical consulting session?	
2. Research in the Field of Statistical Consulting	6
a. Published textbooks	
b. Published articles	
c. Interviews with practicing statistical consultants	
3. Developing Consulting Skills	8
a. Client expectations	
b. Peer expectations	
c. The ideal statistical consultant	
d. Choosing a consulting technique	
e. Developing an effective “bed-side” manner	
f. Non-verbal communication	
g. Asking good questions	
h. Business aspects of consulting	
i. Negotiating a satisfactory exchange	
j. Dealing with difficult situations and difficult clients	
k. Communicating about statistics	
l. Working as part of a larger research team	
m. Assessing your consulting skills	
4. Principles of Professional Practice	4
a. Ethical issues in statistical consulting	
b. Utilizing professional publications and resources in statistics and other related fields	
5. Practice Implementing the Many Phases of a Study	8
a. Problem identification	
b. Study design	
c. Data collection	
d. Data management	
e. Preliminary analyses	
f. Follow-up analyses	
g. Development of conclusions	
h. The written report	
i. The oral presentation	
6. Consulting Opportunities	8
a. Observation of statistical consultants in action	
b. Role playing of consulting sessions	
c. Participating as part of a research team	
d. Leading a consulting session	
e. Watching yourself lead a consulting session	
f. Evaluating your skills when leading a consulting session	
TOTAL	36

8. Method of Evaluating Outcome

There is a need for two distinct sets of assessment methods.

For the lecture part of the course, assessment will be primarily based on essay examinations, quizzes, and homework assignments. Typically, there will be at least one midterm examination during the quarter, and a comprehensive final examination. Students will be required to show their work, and will be graded not only on the correctness of their answers, but also on their understanding of the concepts and techniques. Occasionally, quizzes may be used to provide a spot-check of student learning. Homework may be used to promote student understanding. All of the assessment methods listed above (written examinations, quizzes, and homework) will be used for Course Content topic numbers 1-4.

Much of the course (especially Course Content topics 5 and 6) will require that students participate in and produce consulting scenarios, role-plays, team-based activities, projects, papers, oral presentations, and consulting experiences. For these activities, an additional set of assessment methods is required. The instructor will judge the level of student preparation, the degree of participation, and the ability to effectively implement desired consulting skills.