



# STATISTICS 403-3

## Intermediate Sampling and Experimental Design

Spring 2006  
DAY COURSE

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*Students requiring accommodations as a result of disability, must contact the Centre for Students with Disabilities 604-291-3112 or csdo@sfu.ca*

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**Instructor:** [Dr. S. Thompson](#) (SC K10564)

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### **Prerequisites:**

STAT 302 or STAT 350. Students with credit for STAT 410 or 430 may not take STAT 403 for further credit. Statistics minor, major and honors students may not use this course to satisfy the required number of semester hours of upper division Statistics. However, they may include the course to satisfy the total number of required hours of upper division credit.

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### **Textbook:**

There is no formal text assigned for this course.

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### **Calendar Description:**

A practical introduction to useful sampling techniques and intermediate level experimental designs.

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### **Outline:**

Sampling and experimentation are major components of much modern research, and STAT 403 will develop practical expertise in these areas. This new course is required by students in the proposed Environmental Science program who choose as an area of concentration, one of biology, chemistry, or pollutant transport. Particular emphasis will be placed on environmental applications.

The course is designed to take students beyond the basic concepts introduced in earlier courses, and to generate familiarity with intermediate-level designs that are commonly deployed. Successful graduates would, for example, be able to work with the sampling schemes currently being used to monitor shell fish populations on the B.C. North Coast. They should also have gained practical experience designing experiments that involve more than one level of grouping of experimental units ( e.g., nested designs), or that assess the impact of more than one factor in reasonably creative ways (e.g., split-plot designs).

The prerequisite for the course is STAT 302, a course in regression analysis and basic experimental design. STAT 403 will extend and thereby also reinforce this base. Emphasis will be on practical aspects of sampling and experimentation. Students will become actively involved in designing, running, and analyzing actual surveys and experiments.

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### **Grading:**

- Exercises - 25%
- Design and Analysis Project, workshop/tutorial participation - 25%
- Two term tests - 25%
- Comprehensive Final Exam - 25%

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*Students should be aware that they have certain rights to confidentiality concerning the return of course papers and the posting of marks. Please pay careful attention to the options discussed in class at the beginning of the semester. Students are reminded that Academic Honesty is a cornerstone of the acquisition of knowledge. Scholarly integrity is required of all members of the University. Please consult the General Guidelines of the calendar for more details.*

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Revised September 2005