Instructor: Prof. Mary C. Christman, 406 McCarty C, 392-1946, mcxman@ufl.edu

Instructor Office Hours: T-Th Period 4, or by appointment

TA: Yun Zhu, 401 McCarty C, 392-1946, yzhu@stat.ufl.edu

TA Office Hours: T-Th Period 6, or by appointment

Course Description: Sample Survey Design covers introduction and application of sampling strategies used for estimation. Sampling designs that will be covered include simple random sampling, stratified sampling, single and multistage cluster sampling, systematic sampling, transect sampling, sequential sampling methods, and adaptive sampling. We will cover comparisons of methods, conditions under which different strategies are better (or worse), design issues, sampling for multiple outcomes, and spatial sampling.

The main emphasis of the course is on understanding the statistical methodology and its use and misuse. In addition, it will cover concepts of sampling for estimation versus sampling for modeling purposes. The course will include application to survey methods such as is done in the social sciences and to field sampling as is done in ecological and environmental research.


If you buy an earlier edition, you are responsible for ensuring that any material or assignments are matched to the 6th edition.

Web Site: http://www.stat.ufl.edu/CourseINFO.htm
Handouts, assignments, and solutions may be found on the class website.

Homework: Homework will be assigned weekly each Thursday and is due the following Thursday. Homework will be assigned every week but only the 10 best grades will be retained. As a result, LATE HOMEWORK IS NEVER ACCEPTED (NO EXCEPTIONS!). Please submit hardcopies of all homework assignments.

Exams: There will be 2 exams: a midterm and a final. Students may bring one 8.5x11 inch page of equations/related material and a calculator to each exam. No other material (notes, books, neighbor’s exams, cell phones, etc) is permitted at either exam. The dates of the exams are:
Midterm  October 17  8:30 to 9:30 am
Final       December 15  7:30 to 9:30 am

Project: There will be one project to be completed during the semester. This will be a five page paper on one of the following topics:

(a) A review of a sampling design not covered in class. For example, transect sampling. I will provide a list, or you can suggest your own.
(b) A data analysis of a real data set. I would expect a sophisticated analysis, a critique of the design, and a discussion on how to improve what was done.
(c) A review and summary of a paper from the literature. I will provide a list, or you can suggest one of your own.

Your project must be approved by me, so you must submit a 1-page plan for your project to me no later than Friday October 27. The final project is due no later than Tuesday December 5. All deadlines must be respected.

Computing: It is assumed that students have access to the internet for purposes of email and web browsing. In addition, homework or the project might require familiarity with computing software that does statistical computations. Examples include Excel, SAS, SPSS, JMP, R, Splus, or Matlab.

Grading: Grades are based on all material to be handed in and the two exams. The points are:

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<th>Component</th>
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<td>Homework</td>
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<td>Project</td>
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<td>Midterm</td>
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<td>Final</td>
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Letter grades are determined using the following:

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Policies and Additional Information:

1. Office Hours. Office hours are listed above. Help outside these times are by appointment only. Call or email to schedule an appointment.

2. Occasionally, additional materials or other notes (interesting websites, pointers to recent interesting articles, etc.) will be placed on the class web site. Check often to ensure you are not missing anything important!

3. The class Email account will be used occasionally to answer questions or possibly to send out additional information to everyone. Be sure your campus email address is current in the system because we will be using the listserv created
by ISIS.

4. There will be 2 exams, each covering material since the last exam. We will not be available to answer questions on exam materials for the 24 hrs before an exam. You are permitted a single 8.5x11” sheet of paper with as much information as you can write on it. Please do not add additional sheets overlapping. The “cheat sheet” is to be handed in with the exam. You may not use a computer unless explicitly allowed. I encourage you to ask the proctors any questions regarding clarification or interpretation of exam questions but please do not ask us about your answer.

5. The homework answers will be posted to the website. We will try to post answers quickly.

6. **Missed Exams.** If you must miss an exam (very few excuses are permitted) let me know as soon as possible before the scheduled exam. It is unlikely a make-up exam will be offered unless the student was ill or had an acceptable conflicting event. Acceptable conflicting events are field work for research or presentations at meetings. No other conflicts will be accepted. Please do not ask for a change in date due to reunions, weddings, parties, etc. The request will definitely NOT be granted!

7. Late homework will not be accepted and will be recorded as a 0 grade. If you are going to miss a class or have a scheduling conflict, return the assignment before the due date! It is the responsibility of the student to work all of the assigned homework problems independently (which means by yourself, on your own). The experience gained from doing these problems is invaluable and necessary for the understanding of the material we shall be covering. Please note that obtaining help from fellow students or others on a homework assignment is considered cheating by the University and will not be allowed unless explicitly stated.

8. Please do not ask us to alter your grade on an exam or homework unless we made a calculation mistake (added the total wrong, or took points off a correct answer, etc). If you think this is what happened then you should provide the exam and a written explanation of the reason you believe we made a mistake to me within a day of the return of the exam. No verbal explanations will be accepted.

9. We do not give extra credit, so please do not ask. Plan ahead and study so that it does not become an issue.

**University Policies:**

**Academic Dishonesty:** All members of the University Community share the responsibility to challenge and make known acts of apparent academic dishonesty. Acts of academic dishonesty will not be tolerated and will be referred to the Student Honor Council. Information regarding University policies about academic dishonesty and the University’s honor code may be found at:
Academic accommodations: If you have a documented disability and wish to discuss academic accommodations with me, please contact me as soon as possible. Information on Disability Resources can be found at [http://www.dso.ufl.edu/drp/services/](http://www.dso.ufl.edu/drp/services/)

**Tentative Topics**

- Simple Random Sampling with and without replacement
- Introduction to Unequal Probability Sampling
- Stratified Random Sampling
  - For population means and proportions
  - For subdomain means and proportions
- Single Stage Cluster Sampling
  - Equal vs unequal cluster sizes
  - Estimation of cluster mean versus population mean
- Systematic Sampling
  - Variance estimation methods
- Multistage Cluster Sampling
  - Subsampling clusters
  - Transect sampling
- Sequential Sampling Techniques
- Adaptive Sampling