STAT 6326

Sampling Theory

Spring 2006

Time:	MW 7 – 8^{15} pm
Room:	CB 1.112
Instructor:	Dr. Michael Baron
Office:	ECSN 3.912
Phone:	972-UTD-6874 (972-883-6874)
Office hours:	TuTh 10-10:50 am; Th 6-7 pm; or by appointment
Text:	**Steven Thompson. Sampling, 2nd edition. Wiley, 2002.**
Supplemented by:	William G. Cochran. Sampling Techniques, Wiley, 1977
	Des Raj. Sampling Theory. McGraw-Hill, 1968
	Bradley Efron. The Jackknife, the Bootstrap and Other Resampling Plans. CBMS-NSF series, SIAM, 1982

Course outline:

1. Sampling from a finite population. Estimation theory. Estimating ratios, totals, subpopulation means (Chapters 1–5). Bias reduction and jackknife; resampling (lecture notes).

2. Unequal probability sampling. Hansen-Hurwitz estimator. Horvitz-Thompson estimator (Chapter 6). Use of auxiliary data (Chapter 7).

3. Sampling designs. Stratified, cluster, multistage, double sampling; optimal allocation (Chapters 10–14). Network sampling (Chapter 15).

4. Detectability and density estimation methods (Chapter 16–18). Estimating variances of estimates, and bootstrap (lecture notes).

5. Spatial sampling. (Chapters 20–21). Adaptive sampling (Chapters 23–24, if time permits).

The final grade is based on:

Homework	0 %	Homework will be assigned but will not be collected or graded. A serious and steady effort to work out all the homework problems is highly recommended.
Quizzes	30%	Short weekly quizzes closely related to the material of the latest homework assignment. **Quizzes are closed-book; one cheat-sheet is allowed.**
Midterm	30%	A $1\frac{1}{4}$-hour midterm exam is on **March 2**. **Exams are open-book, -notes, -etc.**
Final	40%	A $2\frac{1}{2}$-hour final exam covers the second part of the course, but it is cumulative indirectly. Scheduled **April 25 at 7^{00}pm**.

90–100 % = A, 75–90 % = B, 55–75 % = C.