



## Training and Student Information

### Biostatistics Courses

#### Statistics 642: Statistical Methods for Epidemiology

[printable pdf page](#)

This course is intended for statistics or biostatistics students interested in methods for the design and analysis of epidemiology studies.

#### Statistics 642 Spring 2007 Course Materials

##### [Syllabus](#)

##### [Lecture 1](#)

##### [Lectures for Chapter 2, Volume 1](#)

##### [Lecture Handout #3](#)

##### [Lecture 4 Handout](#)

##### [Lecture Handout 5, Chapter 5, Breslow and Day](#)

[Educational Resources](#)

[M.S and PhD Programs](#)

[Biostatistics Training](#)

[Medical Informatics Training](#)

[Certificate Programs](#)

[Summer Programs for Undergraduates](#)

[Courses](#)

[Student Award Winners](#)

[Training Grants](#)

#### Course Description:

This course will cover statistical methods for design, conduct, and analysis of epidemiologic studies such as case-control and cohort studies. Topics include overview of designs for research studies; epidemiologic study design; rates and risk; measures of association; classical contingency table methods; logistic and Poisson regression; and proportional hazard regression. Examples from the literature and data from a number of well-known epidemiologic studies will be used for illustration of the concepts involved. Additional topics will be discussed time permitting at the end of the semester.

#### Topics include:

- Epidemiologic Study Design
- Analysis of Case-Control Studies
  - Measure of Association
  - Classical Methods for 2x2 Tables
  - Conditional and Unconditional Logistic Regression
- Analysis of Cohort Studies
  - Rates, Standardized Rates, SMR
  - Poisson Regression

## o Longitudinal Data

**Prerequisite:**

STAT 609 and 610 or equivalent strongly recommended, but not required.

**Course Requirements:**

A series of homework assignment will be given throughout the course. These assignments will be graded and counted toward the final course grade. There will be one each of in-class or takehome mid-term and final examinations.

**Schedule:** T/TH 9:30-10:45 PM

**Location:** 133 SMI (note change from originally scheduled room)

**Course Text and Materials:**

Lectures will be primarily drawn from Breslow and Day, *Statistical Methods in Cancer Research: Volume I, "The Analysis of Case-Control Studies"* and *Volume II, "The Design and Analysis of Cohort Studies"*. Volume I is available at the bookstore and is strongly recommended; handouts from the text will not be provided. Volume II is out of print; handouts of the text will be provided for relevant lectures. Other texts available at the bookstore are encouraged and will be helpful in understanding the statistical methodology, but are not required. Copies of journal articles on historically important epidemiologic studies and statistical methods will also be made available, as needed.

Course materials not distributed in class will be available in the statistics 642 directory on the following URL: <http://www.biostat.wisc.edu/People/faculty/fine.htm>

- *Statistical Methods in Cancer Research: Volume I - The Analysis of Case-Control Studies*. N. Breslow and N. Day, I.A.R.C., Lyon (1980).
- *Statistical Methods in Cancer Research: Volume II - The Design and Analysis of Cohort Studies*. N. Breslow and N. Day, I.A.R.C., Lyon (1987).



[Internal Use](#)	[Site Map](#)	[Search](#)				
[Overview](#)	[People](#)	[Training](#)	[Research](#)	[Seminars](#)	[Employment](#)	[Links](#)
[Biostatistics Program](#)	[Clinical Trials Program](#)	[Medical Informatics Program](#)	[Biomedical Computing](#)			

[webfeedback@biostat.wisc.edu](mailto:webfeedback@biostat.wisc.edu)

Copyright © 2006 The Board of Regents of the  
University of Wisconsin System