

Department of Public Health Sciences and Epidemiology  
PH 658  
**Computer Applications in Epidemiology**  
Spring 2007

Meeting Place: Biomed TD207 (computer lab), Wed 11:00 – 1:30 PM

Instructor Information:

Name Peter Holck, PhD, MPH  
Phone: 956 6263  
Fax:  
Email: [holck@hawaii.edu](mailto:holck@hawaii.edu)  
Web: [www2.hawaii.edu/~holck](http://www2.hawaii.edu/~holck)  
Office Hours: Following class, or by appointment, or when available in Biomed D104G

Course Description: The course will expose the student to several different software packages useful in conducting Epidemiological studies, presentations, and data analysis. On occasion the course will incorporate statistical methods taught in PH 655 and PH 656 to illustrate the applicability of the software tools utilized. While expertise in any one software package will not likely result from this course, the foundation and basic understanding of several programs will be covered to allow the student to choose that most appropriate for his/her use, and to permit more advanced self-learning of the program. The course emphasizes hands-on experience with ample homework assignments that require extensive use of software covered in class, and independent thinking to extend concepts taught in class.

Course Learning Objectives: The course exposes the student to three types of software: database management and data manipulation software; utility tools for transferring and handling data; and statistical packages allowing complex analysis of data. The student will complete the class with intermediate ability in utilizing database management and utility tools, and basic understanding and use of statistical package software. More advanced use of statistical package software is limited by the prerequisites for the course, and limited course time. The course emphasizes applied homework problems so the student can develop confidence in processing, managing, and analyzing data..

Recommended Texts: Microsoft Access Data Analysis: Unleashing the Analytic Power of Access (paperback) Alexander, 2006

Introductory Statistics with R (paperback) Peter Dalgaard, 2003

The Little SAS Book: a Primer (paperback) Lora Delwiche, Susan Slaughter, 2003

Course Schedule: *Likely* topics and order to be covered (subject to change/enhancement):

1. Microsoft Excel
  - a. General
  - b. Database tools
  - c. Statistical tools
2. Microsoft Access
  - a. General
  - b. Queries
  - c. Forms
  - d. Reports
3. Utilities
  - a. FTP

- b. Telnet
- c. UHunix
- d. Text editors
- 4. EpiInfo
  - a. Data Analysis
- 5. R
  - a. General
  - b. Packages
  - c. Data importing, manipulation
  - d. Analysis
- 6. SAS
- 7. SPSS (possibly)

Course Policies:

- Homework assignments must be received when due to receive full credit. Partial credit for late homework will be severely restricted
- Plagiarism will result in a failing ("F") grade for the assignment. Students should familiarize themselves with the university of Hawai'i Student Conduct Code. Public Health students have been expelled from the University for failing to adhere to these policies; thus please take these policies seriously.
- Extra credit questions will occasionally be supplied on homework assignments, but will only contribute minor points.

Description of Course Assignments: Nearly every week and a new homework assignment will be posted on the class website (above), usually due one week later.

Grading Scale for Class Assignments:

Grading Points	Percentage
Class participation	5%
Homework Assignments	95%

Grading Scale: I will be using the "+ -" grading system

Specialization/MPH Competencies Addressed: Among the competencies addressed in this class are:

- E3 – Demonstrate proficiency in computer based data collection, management, and analysis using major statistical software and fundamental strategies for biostatistical analysis.
- E6a – Critically assess epidemiologic data and literature, Devise sampling protocols and design questionnaires.
- AS2 – Determine appropriate use of data and statistical methods.
- PHS4 – Use advanced computer skills as appropriate