

**PubH 6350 001**  
**Epidemiologic Methods 3: Lab**  
**Fall 2016**

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<b>Credits:</b>	1
<b>Meeting Days:</b>	Mondays
<b>Meeting Time:</b>	3:35 – 5:30 p.m.
<b>Meeting Place:</b>	Mayo D199
<b>Instructor:</b>	Pamela Schreiner, PhD, Professor
<b>Office Address:</b>	Room 490 WBOB
<b>Office Phone:</b>	612-626-9097
<b>Fax:</b>	612-624-0315
<b>E-mail:</b>	<a href="mailto:schre012@umn.edu">schre012@umn.edu</a>
<b>Office Hours:</b>	Mondays, 12 – 1 p.m.
<b>TA:</b>	Cynthia Yoon, MPH

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**I. Course Description**

This course is the companion course to PubH 6343, Epidemiologic Methods 3. It is a hands-on SAS programming course that will use data from PubH 6343 to provide applied understanding of the SAS code presented in class examples. Students will be encouraged to purchase and install the student version of PC-SAS; if this is not possible due to lack of a laptop computer, computers will be provided for use in class. In addition, students will learn how to create a Powerpoint slide presentation appropriate for a scientific presentation at a national meeting.

**Acknowledgments**

The contents of PubH 6350 were developed with the contributions of Drs. Jim Pankow and Pam Schreiner.

**II. Course Prerequisites**

The course is required for all M.P.H. students in Epidemiology and was designed as a companion course to PubH 6343, either concurrently or previously, or its equivalent with permission of the instructor. PubH 6420 (1 credit), Introduction to SAS Programming, or PubH 6325 (1 credit), Data Processing with PC-SAS, are also prerequisites. For those wanting a more in-depth SAS programming class, PubH 6470 (3 credits), SAS Procedures and Data Analysis, is an excellent option. Prerequisites include PubH 6342 (Epidemiologic Methods II) and PubH 6451 (Biostatistics II). Permission of the instructor is needed for substitutions or exemptions.

### III. Course Goals and Objectives

Upon completion of this course the student should be able to:

- Connect the applied methods taught in PubH 6343 with the actual data using the appropriate study designs and analytic techniques
- Conduct basic SAS programming for epidemiologic methods presented in PubH 6343
- Understand why the specific procedures taught are used and be able to interpret the results in an epidemiologic as well as a statistical context
- Understand how to examine crude data for outliers, data errors and distributional assumptions
- Be able to debug SAS code when programs do not run correctly
- Prepare a scientific presentation with appropriate content for introduction/background, methods, results and discussion

### IV. Methods of Instruction and Work Expectations

The class will meet every other week for two hours. Code will be presented in conjunction with the current topics in PubH 6343, homeworks reviewed, and practice time scheduled.

### V. Course Text and Readings

Optional: The Little SAS Book: A Primer, Fourth Edition (Perfect Paperback), Lora Delwiche and Susan Slaughter. Other resources such as <http://support.sas.com/> and <http://www.ats.ucla.edu/stat/sas/> are helpful.

PC-SAS software, student version.

### VI. Course Outline/Weekly Schedule

WEEK	DATE	TOPIC
2	12 Sept	Introduction to SAS datasets and linear regression
		HW1 assigned: Data cleaning and linear regression
4	26 Sept	Tabular methods: creating levels, analyzing associations
		HW2 assigned: Tabular methods for cross-sectional data; HW1 due
		Introduction to presentations
6	10 Oct	Logistic regression: Basics, confounding, independent predictors, and effect modification
		HW3 assigned: Logistic regression basics; HW2 due
8	24 Oct	Logistic regression: Methods for indicator coding and tests of statistical significance

		HW4 assigned: Practice with indicator variables in logistic regression; HW3 due
		Hand in presentation topic/research question

10	7 Nov	Ordinal and polytomous regression
		HW5 assigned: Multinomial regression; HW4 due

11	14 Nov	Incidence density coding: Poisson regression
		HW6 assigned: Poisson regression practice; HW5 due
		Discussion of draft presentations and concerns

13	28 Nov	Incidence density coding: Cox regression and Kaplan-Meier plots
		HW7 assigned: Cox regression modeling; HW6 due

15	12 Dec	Student Powerpoint presentations
		Last homework due during final exam period

## VII. Evaluation and Grading

Letter grades and associated points are awarded in this course as follows below. These will appear in the student's official transcript. See <http://www1.umn.edu/usenate/policies/gradingpolicy.html> for details.

*Pass/Fail Grading:* An alternative to traditional A-F scale grades is the S/N grading scale. The "S" grade does not carry points but credit will count toward completion of student's degree if permitted by college or program. An "N" is given for student's exercising the S/N grading option but who fail to meet minimum course requirements. Students may change grading options without written permission as specified by the University and without penalty during the initial registration period or during the first two weeks of the semester. The grading option may not be changed after the second week of the term. Epidemiology MPH majors are required to take this course for a letter grade.

The maximum number of points a student can earn is 100. There are seven programming assignments, each worth 10 points. The final presentation is worth 20 points, based on content and appropriate structure. The presentations will be made on the last day of class with PowerPoint, and the slides (and code) turned in as a handout for critique and grading. The remaining 10 points will be for class attendance, with 1 point given for attending each of the seven labs and 3 points for attending the final presentations.

The University utilizes plus and minus grading on a 4.000 cumulative grade point scale in accordance with the following:

A (92.5-100)	4.000 - Represents achievement that is outstanding relative to the level necessary to meet course requirements
A- (90.0-92.4)	3.667
B+ (87.5-89.9)	3.333
B (82.5-87.4)	3.000 - Represents achievement that is significantly above the level necessary to meet course requirements

B- (80.0-82.4)	2.667
C+ (77.5-79.9)	2.333
C (72.5-77.4)	2.000 - Represents achievement that meets the course requirements in every respect
C- (70.0-72.4)	1.667
D+ (67.5-69.9)	1.333
D (62.5-67.4)	1.000 - Represents achievement that is worthy of credit even though it fails to meet fully the course requirements
S	Represents achievement that is satisfactory, which is equivalent to a C- or better.

For additional information, please refer to: <http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html>.

### **Course Evaluation**

The SPH will collect student course evaluations electronically using a software system called CourseEval: [www.sph.umn.edu/courseeval](http://www.sph.umn.edu/courseeval). The system will send email notifications to students when they can access and complete their course evaluations. Students who complete their course evaluations promptly will be able to access their final grades just as soon as the faculty member renders the grade in SPHGrades: [www.sph.umn.edu/grades](http://www.sph.umn.edu/grades). All students will have access to their final grades through OneStop two weeks after the last day of the semester regardless of whether they completed their course evaluation or not. Student feedback on course content and faculty teaching skills are an important means for improving our work. Please take the time to complete a course evaluation for each of the courses for which you are registered.

### **Incomplete Contracts**

A grade of incomplete "I" shall be assigned at the discretion of the instructor when, due to extraordinary circumstances (e.g., documented illness or hospitalization, death in family, etc.), the student was prevented from completing the work of the course on time. The assignment of an "I" requires that a contract be initiated and completed by the student before the last official day of class, and signed by both the student and instructor. If an incomplete is deemed appropriate by the instructor, the student in consultation with the instructor, will specify the time and manner in which the student will complete course requirements. Extension for completion of the work will not exceed one year (or earlier if designated by the student's college). For more information and to initiate an incomplete contract, students should go to SPHGrades at: [www.sph.umn.edu/grades](http://www.sph.umn.edu/grades).

### **University of Minnesota Uniform Grading and Transcript Policy**

A link to the policy can be found at [onestop.umn.edu](http://onestop.umn.edu).

## **VIII. Other Course Information and Policies**

### **Grade Option Change** (if applicable):

For full-semester courses, students may change their grade option, if applicable, through the second week of the semester. Grade option change deadlines for other terms (i.e. summer and half-semester courses) can be found at [onestop.umn.edu](http://onestop.umn.edu).

### **Course Withdrawal:**

Students should refer to the Refund and Drop/Add Deadlines for the particular term at [onestop.umn.edu](http://onestop.umn.edu) for information and deadlines for withdrawing from a course. As a courtesy, students should notify their instructor and, if applicable, advisor of their intent to withdraw.

Students wishing to withdraw from a course after the noted final deadline for a particular term must contact the School of Public Health Office of Admissions and Student Resources at [sph-ssc@umn.edu](mailto:sph-ssc@umn.edu) for further information.

**Student Conduct Code:**

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: *Student Conduct Code*. To review the Student Conduct Code, please see:  
[http://regents.umn.edu/sites/default/files/policies/Student\\_Conduct\\_Code.pdf](http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf).

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

**Use of Personal Electronic Devices in the Classroom:**

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference:  
<http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>.

**Scholastic Dishonesty:**

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: [http://regents.umn.edu/sites/default/files/policies/Student\\_Conduct\\_Code.pdf](http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf)) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see:  
<http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html>.

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <http://www1.umn.edu/oscai/integrity/student/index.html>. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class-e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

**Makeup Work for Legitimate Absences:**

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see:  
<http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html>.

**Appropriate Student Use of Class Notes and Course Materials:**

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor

interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: <http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>.

**Sexual Harassment:**

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: <http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf>

**Equity, Diversity, Equal Opportunity, and Affirmative Action:**

The University will provide equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: [http://regents.umn.edu/sites/default/files/policies/Equity\\_Diversity\\_EO\\_AA.pdf](http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf).

**Disability Accommodations:**

The University of Minnesota is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center Student Services is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact DRC at 612-626-1333 or [drc@umn.edu](mailto:drc@umn.edu) to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DS and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the DS website, <https://diversity.umn.edu/disability/>.

**Mental Health and Stress Management:**

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: <http://www.mentalhealth.umn.edu>.

**The Office of Student Affairs at the University of Minnesota:**

The Office for Student Affairs provides services, programs, and facilities that advance student success, inspire students to make life-long positive contributions to society, promote an inclusive environment, and enrich the University of Minnesota community.

Units within the Office for Student Affairs include, the Aurora Center for Advocacy & Education, Boynton Health Service, Central Career Initiatives (CCE, CDes, CFANS), Leadership Education and Development – Undergraduate Programs (LEAD-UP), the Office for Fraternity and Sorority Life, the Office for Student Conduct and Academic Integrity, the Office for Student Engagement, the Parent Program, Recreational Sports, Student and Community Relations, the Student Conflict Resolution Center, the Student Parent HELP Center, Student Unions & Activities, University Counseling & Consulting Services, and University Student Legal Service.

For more information, please see the Office of Student Affairs at <http://www.osa.umn.edu/index.html>.

**Academic Freedom and Responsibility: for courses that do not involve students in research:**

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.\*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college (Dr Kristin Anderson, SPH Dean of Student Affairs), or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

*\* Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".*

**Student Academic Success Services (SASS): <http://www.sass.umn.edu>:**

Students who wish to improve their academic performance may find assistance from Student Academic Support Services. While tutoring and advising are not offered, SASS provides resources such as individual consultations, workshops, and self-help materials.

*Template update 8/2014*