

**PHUN 301****Quantitative Public Health****Fall 2017**

**Time/Room:** T,TH 1-2:15 HP 101 (Section 1)  
T,TH 3-4:15 HM 223 (Section 2)

**Instructor:** Michael (Mike) Sekula  
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Office: HP 109  
Office Hours: T, TR 11:00-12:30  
Or by appointment

**TA:** John Craycroft  
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Office Hours: By appointment

**Textbook:** Essentials of Biostatistics in Public Health, 3<sup>rd</sup> Edition, Lisa M. Sullivan

**Prerequisites:** A previous course in probability is helpful but not required, and no background in statistics is assumed.

**Course Description:**

This course is an introduction to the concepts and theory behind quantitative analysis methods used in public health. The content focuses on how and why different statistical methods are used with minimal emphasis on statistical calculations. This does not mean, however, that calculations are not performed. Topics in the first half of the course revolve around understanding how different types of data are presented, and describing the fundamental ideas behind probability and probability models. The second half concentrates on identifying and interpreting statistical tests. The skills of critical thinking, communication, and teamwork are promoted and cultivated throughout this course.

**Course Objectives:**

By the completion of this course, students are able to:

1. Explain the role of biostatistics in public health and medical research.
2. Summarize collected data using descriptive statistics, tables, and figures.
3. Explain the key features of the binomial and normal distribution models.
4. Identify and apply statistical methods in the public health environment.
5. Interpret p-values and confidence intervals from public health related studies.
6. Create hypothesis tests for population parameters.
7. Analyze results from regression analysis found in public health and medical literature.

**Grading:**

A final grade for this course is determined based on in-class work, homework, one midterm exam, and one final exam.

**Classwork (20%)**

“Lectures” typically consist of a combination of in-class iClicker questions, independent work, group work, and/or discussions. In-class work (classwork) is often collected simply as an informal assessment of student performance. Some classwork, however, is collected and formally graded. The lowest classwork grade is dropped and extra credit points are awarded throughout the semester for consistent and/or exemplary non-graded work. Missed classwork can be made-up for 80% credit (or 100% if a documentable reason is provided for missing class). Late classwork must be turned in within 1 week of the class missed.

**Homework (30%)**

Assignments are announced during class and posted to Blackboard by noon on Friday of that same week. Homework is due by noon the following Friday, a week later. All assignments MUST be submitted through Blackboard, and the lowest score is dropped. You are encouraged to work together on the homework, but you must turn in your own work. You are held responsible for verifying the integrity of your submissions.

Late homework is accepted as follows:

Within 24 hours of due date/time (Saturday by noon) for 90% credit.

Within 24-48 hours of due date/time (Sunday by noon) for 80% credit.

Within 48-72 hours of due date/time (Monday by noon) for 70% credit.

After 72 hours NO HOMEWORK WILL BE ACCEPTED

**Midterm Exam (20%)**

The midterm for both sections of this course is October 5<sup>th</sup>. This is an in-class exam that evaluates your understanding for all content covered in-class by September 28<sup>th</sup>. Extra time is provided to students requiring such an accommodation, as determined by the Disability Resources Center. If you cannot make it to this midterm, you must let me know BEFORE the exam is given. No make-up exams are given without a documentable reason for missing the exam.

**Final Exam (30%)**

The final for this course is scheduled for December 6<sup>th</sup> (Section 2) and December 8<sup>th</sup> (Section 1). Please double (and triple check) the final exam calendar, as the day and time for both of these exams are different from the normal weekly schedule. This final is a comprehensive exam that evaluates your competency for all content covered in this course. Extra time is provided to students requiring such an accommodation, as determined by the Disability Resources Center. If you cannot make it to this midterm, you must let the instructor know BEFORE the exam is given. No make-up exams are given without a documentable reason for missing the exam.

**Grading Scale:**

<b>A+</b>	<b>A</b>	<b>A-</b>	<b>B+</b>	<b>B</b>	<b>B-</b>	<b>C+</b>
[97-100]	[93-97)	[90-93)	[87-90)	[83-87)	[80-83)	[77-80)
<b>C</b>	<b>C-</b>	<b>D+</b>	<b>D</b>	<b>D-</b>	<b>F</b>	
[73-77)	[70-73)	[67-70)	[63-67)	[60-63)	[0,60)	

**Technological Uses and Expectations:**

Unless stated otherwise, the use of computers and other technology during lecture is not permitted. Lecture notes and homework are posted to Blackboard, and all homework **MUST** be submitted through Blackboard.

**Attendance Policy:**

Attendance is not mandatory, but keep in mind that 20% of the final grade comes from in-class work. Students should make every effort to come to class and are held responsible for any content they miss. Exams cannot be made up without a documentable reason for missing the class time.

**Students with Disabilities:**

The University of Louisville is committed to providing access to programs and services for qualified students with disabilities. If you are a student with a disability and require accommodation to participate and complete requirements for this class, notify me immediately and contact the Disability Resource Center (Robbins Hall, 852-6938) for verification of eligibility and determination of specific accommodations.

**Religious Holy Days and Observances:**

Federal law and university policy prohibit discrimination on the basis of religious belief. It is the policy of the University of Louisville to accommodate students, faculty, and staff who observe religious work-restricted holy days. Students who observe work-restricted religious holy days must be allowed to do so without jeopardizing their academic standing in any course. Faculty are obliged to accommodate students request(s) for adjustments in course work on the grounds of religious observance, provided that the student(s) make such request(s) in writing during the first two (2) weeks of the term. Deans and department chairs must investigate and resolve student complaints arising from alleged faculty failure to make reasonable accommodations under these guidelines.

**Inclement Weather:**

This course adheres to the University's policy and decisions regarding cancellation or delayed class schedules. Adjustments are made to the class schedule as necessary to take into account any delays or cancellations of this class. Local television and radio stations broadcast University delays or closings. The U of L web site ([www.louisville.edu](http://www.louisville.edu)) and telephone information line (502-852-5555) also broadcast delays or closings.

**Academic Dishonesty:**

Academic dishonesty is prohibited at the University of Louisville. It is a serious offense because it diminishes the quality of scholarship, makes accurate evaluation of student progress impossible, and defrauds those in society who must ultimately depend upon the knowledge and integrity of the institution and its students and faculty.

**Tentative Course Schedule:**

The schedule is subject to change throughout the semester if necessary.

Week	Date	Topic	Chapter	Notes
1	8/22 8/24	Introduction to QPH Basics of Data Analysis	1	
2	8/29 8/31	Dichotomous/Ordinal/Nominal Variables	4	
3	9/5 9/7	Continuous Variables/Descriptive Statistics	4	
4	9/12 9/14	Probability Basics	5	
5	9/19 9/21	Probability Models (Part 1)	5	
6	9/26 9/28	Probability Models (Part 2)	5	
7	10/3 10/5	Midterm Review Midterm		
8	10/10 10/12	Confidence Intervals	6	NO CLASS
9	10/17 10/19	Introduction to Hypothesis Testing	7	
10	10/24 10/26	Comparing Means	7	
11	10/31 11/2	Comparing Proportions	7	
12	11/7 11/9	Correlation and Regression (Part 1)	8	
13	11/14 11/16	Correlation and Regression (Part 2)	8	
14	11/21 11/23	Data Visualization (Part 1)	12	NO CLASS
15	11/28 11/30	Data Visualization (Part 2) Study Designs	12 2	
16	12/5	Final exam review		Optional
FINALS	12/6 12/8	Section 2 (11:30-2) Section 1 (2:30-5:00)		

**Final Note:**

This syllabus is a living document and adjusts/adapts to best meet the needs of the students.