

**University of Florida**  
**College of Public Health & Health Professions Syllabus**  
**Fall 2014 PHC 6050: Statistical Methods for the Health Sciences I (3 credits)**  
Section: 1611 - HPNP G301 – Monday 4<sup>th</sup> Period, Thursday 3<sup>rd</sup> & 4<sup>th</sup> Periods  
Section: 171F - HPNP G301 – Monday 5<sup>th</sup> Period, Thursday 5<sup>th</sup> & 6<sup>th</sup> Periods  
Section: 06B6 - HPNP G301 – Monday 6<sup>th</sup> Period, Thursday 7<sup>th</sup> & 8<sup>th</sup> Periods  
Delivery Format: Blended Learning Model  
Restricted Course Content and Assessments in E-Learning in Sakai  
Open Course Materials: <http://bolt.mph.ufl.edu/>

---

Instructor Name:	Dr. Amy Cantrell ( <a href="http://users.php.ufl.edu/acantrell/">http://users.php.ufl.edu/acantrell/</a> )
Office:	CTRB 5213
Phone Number:	352-294-5927
Email Address:	<a href="mailto:acantrell@ufl.edu">acantrell@ufl.edu</a>
Office Hours:	by appointment
Preferred Course Communications:	Email through our course in E-Learning

---

Grading Teaching Assistants	Xinlei Mi and Qianyun Li
-----------------------------	--------------------------

---

**Prerequisites and Co-requisites:** We are using Statistical Package for the Social Sciences, SPSS 20 (or higher), in this course. Becoming familiar with a statistical package is an important part of your statistical education. Although it is not required, it is highly encouraged that you have access to SPSS on a device for in class use. The version available at the UF bookstore should be the one mentioned here: <https://software.ufl.edu/student-agreements/> and click on **SPSS for Windows** for SPSS program purchase information and online documents. Computing requirements can be found at <http://mph.ufl.edu/students/computer-requirements/>.

SPSS is also available along with other applications such as Microsoft Office on the free APPS server (see <http://info.apps.ufl.edu/>). We do not have tutorials on working with this system so if you use this you will need to learn some skills on your own regarding how the apps server works with data in SPSS.

If you buy this software from somewhere other than through UF's agreement be aware that you must obtain either the STANDARD GRADUATE PACK (GRADPACK) or PREMIUM GRADUATE PACK. The BASE or other student versions may not have enough functionality for this course. The version available through UF is more complete than the versions you can buy elsewhere.

---

**What is blended learning and why is it important?** A Blended Learning class uses a mixture of technology and face-to-face instruction to help you maximize your learning. Knowledge content that I would have traditionally presented during a live class lecture is instead provided online before the live class takes place. This lets me focus my face-to-face teaching on course activities designed to help you strengthen higher order thinking skills such as critical thinking, problem solving, and collaboration. Competency in these skills is critical for today's health professional.

**What is expected of me?** You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you will struggle to keep pace with the activities occurring in the live sessions, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively participate in the live class. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

Because I post material online, you can go back and review it as many times as needed to feel comfortable with the material prior to the live class. Please keep in mind that you have to allocate your time wisely to take full advantage of the blended learning approach.

---

---

## PURPOSE AND OUTCOME

### Course Overview

Statistical methods for description and analysis provide investigators with useful tools for making sense from data. The pervasiveness of statistics in public health as well as other fields has led to increased recognition that statistical literacy—a familiarity with the goals and methods of statistics—should be a basic component of a well-rounded educational program. In this course, students will develop a statistical vocabulary, learn methods for descriptive data analysis, study the fundamentals of probability and sampling distributions, learn methods for statistical inference and hypothesis testing based on one or two samples, and become familiar with categorical data analysis and linear regression. Data analysis will be conducted in SPSS.

**Course Objectives and/or Goals:** Upon completion of this course, students will be able to

- CO-1: Describe the roles biostatistics serves in the discipline of public health.
- CO-2: Differentiate among different sampling methods and discuss their strengths and limitations.
- CO-3: Describe the strengths and limitations of designed experiments and observational studies.
- CO-4: Distinguish among different measurement scales, choose the appropriate descriptive and inferential statistical methods based on these distinctions, and interpret the results.
- CO-5: Determine preferred methodological alternatives to commonly used statistical methods when assumptions are not met.
- CO-6: Apply basic concepts of probability, random variation, and commonly used statistical probability distributions.
- CO-7: Use statistical software to analyze public health data.
- CO-8: Develop presentations based on statistical analyses for both public health professionals and educated lay audiences. **Instructional Methods:** As an instructor, my primary goal is for each of you to learn as much as possible during the semester!

**Relation to Program Outcomes:** This three-credit course is a required core public health course for certain MPH concentrations and covers the following MPH competencies.

- Monitor health status to identify and solve community health problems.
- Diagnose and investigate health problems and health hazards in the community using an ecological framework.
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
- Conduct research for new insights and innovative solutions to health problems.
- Communicate effectively with constituencies in oral and written forms.

---

## DESCRIPTION OF COURSE CONTENT, COURSE MATERIALS, AND TECHNOLOGY

**Course Materials:** Course materials will be provided in the form of an “online” textbook at <http://bolt.mph.ufl.edu/>. A printable version is also available which contains the main content and notification of any online-only content such as videos, self-learning activities, or other online resources. The materials for each week will be clearly identified in the E-Learning site for the course.

**Recommended SPSS books:** There are numerous SPSS guides available. The best one for you may depend on what you might be doing with SPSS after our class. I have had recommendations from students for Julie Pallant’s “SPSS Survival Manual.” Many resources are available both in print and online via the UF Library. Your SPSS recommendations for current or future students are appreciated.

**E-Learning:** An E-Learning site will be available for the course. Grades, assignments, discussion boards, and other course information will be available in the E-Learning system. E-learning is accessible at [lss.at.ufl.edu](http://lss.at.ufl.edu) or through [my.ufl.edu](http://my.ufl.edu). You must have a valid Gatorlink ID and password. For assistance, call the UF Help Desk at 392-HELP.

**Technology:** A computer preferably for in class use running SPSS version 20 or higher. For technical difficulties with E-learning please contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

**Response Time:** If we can, we will address your questions immediately. During the week we will do our best to address all questions completely within 48 hours, excluding weekends. Any question asked on Friday afternoon or later may not be addressed until early the following week.

## ACADEMIC REQUIREMENTS AND GRADING

### Assignments

**Quizzes:** There will be weekly quizzes due each Wednesday by 10 PM covering the material specified in the weekly schedule. You have the opportunity to take the quiz up to three times before the due date. **In order to receive any credit for the quiz you must score 80% or higher.** Students who do not pass the quiz with a grade of 80% or higher will be required to remediate until they earn an 80% in order to obtain a grade for the quiz. The only score which can be earned through remediation is 80%. Quizzes test basic definitions and skills and may sometimes be cumulative in that they will go back and ask earlier questions.

**Assignments:** Individual assignments will involve data analysis in software and interpretations as well as certain types of questions which cannot be easily presented in the quizzes.

**Course Project:** Each student will individually prepare a course project consisting of a guided data analysis based upon two (related) quantitative variables. These variables will then be categorized in two ways (2 levels, 3+ levels). The relationship between the two variables will be investigated using different combinations of variable types.

**Group Assignments:** During class sessions, groups will often work on specific worksheets and assignments. The grades for these assignments are based upon your attendance during the session as well as your preparation for the session. In particular, some quizzes will have an initial due date for the first attempt followed by an in-class group activity prior to the final due date for that quiz. Students who do not prepare for the session by completing the first attempt will earn a maximum of 70% for that group assignment. Students who are not in attendance will earn no credit.

**Attendance:** Attendance will be taken during each class session. Students who are on-time to class will receive 3 points; students who are less than 10 minutes late will receive 2 points; and students who are more than 10 minutes late will receive 1 point. Students who are not in attendance will receive 0 points.

Note: All assignments must be submitted via E-Learning by the due date.

### Grading

Requirement	% of final grade
Quizzes	30%
Assignments	30%
Course Project (Due: December 10 <sup>th</sup> by 10 PM)	20%
Group Work	10%
Required Attendance	10%

Point system used (i.e., how do final course averages translate into letter grades).

Final Average	94-100	90-93	85-89	80-84	77-79	74-76	70-73	67-69	64-66	60-63	57-59	Below 57
Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

Please be aware that a C- is not an acceptable grade for graduate students. A grade of C counts toward a graduate degree only if an equal number of credits in courses numbered 5000 or higher have been earned with an A.

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
Grade Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at: <http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

**Grade Response Times:** The time to receive your grade on assignments will vary depending on the type of assignment. The instructor and TAs will always strive to return your graded work as soon as possible.

## Policy Related to Make up Exams or Other Work

Students are allowed to make up work ONLY as the result of illness or other unanticipated circumstances warranting a medical excuse and resulting in the student missing a homework or project deadline, consistent with College policy. Documentation from a health care provider is required. Work missed for any other reason will receive a grade of zero.

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

## Policy Related to Required Class Attendance

Class attendance is mandatory. Excused absences follow the criteria of the UF Graduate Catalogue (e.g., illness, serious family emergency, military obligations, religious holidays), and should be communicated to the instructor prior to the missed class day when possible. UF rules require attendance during the first two course sessions. Regardless of attendance, students are responsible for all material presented in class and meeting the scheduled due dates for class assignments. Finally, students should read the assigned readings prior to the class meetings, and be prepared to discuss the material.

Please note all faculty are bound by the UF policy for excused absences. For information regarding the UF Attendance Policy see the Registrar website for additional details: [http://www.registrar.ufl.edu/catalogarchive/01-02-catalog/academic\\_regulations/academic\\_regulations\\_013.htm](http://www.registrar.ufl.edu/catalogarchive/01-02-catalog/academic_regulations/academic_regulations_013.htm)

---

## STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

### Communication Guidelines

Review Netiquette Guidelines: <http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

- Questions about course material should be posted on the course discussion boards in E-Learning.
- Questions of a personal nature (grades, etc.) should be sent via email or discussed in person.
- Note: When emailing the instructor using the E-learning mail tool, ALWAYS check the box “send a copy to the recipients email.” This will result in the fastest possible response.

### Online Faculty Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu> so make sure you include a statement regarding the value and expectation for student participation in course evaluations. We suggest you include a comment regarding how you will use the evaluations (e.g. to make specific improvements to the course and teaching style, assignments, etc.). It is also important to make some statement regarding the direct influence they have on faculty tenure and promotion, so your input is valuable. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>

### Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

**“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

- <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

- <http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

---

## **SUPPORT SERVICES**

### **Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. The Dean of Students Office will provide documentation to you, which you then give to the instructor when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework.

### **Counseling and Student Health**

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:
- Alachua County Crisis Center:  
(352) 264-6789

<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

*BUT – Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.*

---

Content to Review	Monday	Wednesday	Thursday	Sunday
<b>Week 1</b>	<b>8/25</b>	<b>8/27</b>	<b>8/28</b>	<b>8/31</b>
Introduction Preliminaries	In Class: <ul style="list-style-type: none"> <li>Nameplates, Assignment #1</li> <li>Group Assignment #1</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #1 – Preliminaries</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Group Assignment #2 - Variables</li> </ul>	
<b>Week 2</b>	<b>9/1</b>	<b>9/3</b>	<b>9/4</b>	<b>9/7</b>
EDA for One Variable	<b>NO CLASS</b>	10:00 PM <ul style="list-style-type: none"> <li>Syllabus Quiz</li> <li>Assignment #2</li> <li>College Blended Learning Survey</li> </ul>	<b>NO CLASS</b> <b>DUE: Your Software Installed!!!</b> <b>6050 = SPSS, 6052 = SAS</b>	
<b>Week 3</b>	<b>9/8</b>	<b>9/10</b>	<b>9/11</b>	<b>9/14</b>
EDA for Two Variables	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #3</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #2 – EDA for One Variable</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #3</li> </ul>	
<b>Week 4</b>	<b>9/15</b>	<b>9/17</b>	<b>9/18</b>	<b>9/21</b>
Remainder of Unit 1 All of Unit 2	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #4</li> </ul> 10:00 PM <ul style="list-style-type: none"> <li>Assignment #3 – Software</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #3 – EDA for Two Variables</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #4</li> </ul>	
<b>Week 5</b>	<b>9/22</b>	<b>9/24</b>	<b>9/25</b>	<b>9/28</b>
Unit 3A	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #5</li> </ul> 10:00 PM <ul style="list-style-type: none"> <li>Assignment #4 – Software</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #4 – Causation; Producing Data</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #5</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>First Attempt Quiz #5 – Unit 3A Probability (GA #3)</li> </ul>
<b>Week 6</b>	<b>9/29</b>	<b>10/1</b>	<b>10/2</b>	<b>10/5</b>
Unit 3B – Discrete RVs	In Class: <ul style="list-style-type: none"> <li>Group Assignment #3</li> </ul> 10:00 PM <ul style="list-style-type: none"> <li>Assignment #5 – Software</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #5 – Unit 3A Probability</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #6</li> <li>Work on Group Assignment #5</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>First Attempt Quiz #6 – Unit 3B Discrete RVs (GA #4)</li> </ul>
<b>Week 7</b>	<b>10/6</b>	<b>10/8</b>	<b>10/9</b>	<b>10/12</b>
Unit 3B – Continuous RVs	In Class: <ul style="list-style-type: none"> <li>Group Assignment #4</li> </ul> 10:00 PM <ul style="list-style-type: none"> <li>Assignment #6 - Independence</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #6 – Unit 3B Discrete RVs</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Work on and/or Present Group Assignment #5</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>First Attempt Quiz #7 – Unit 3B Continuous RVs (GA #6)</li> </ul>

Content to Review	Monday	Wednesday	Thursday	Sunday
<b>Week 8</b>	<b>10/13</b>	10/15	<b>10/16</b>	10/19
Sampling Distributions	In Class: <ul style="list-style-type: none"> <li>Group Assignment #6</li> </ul> 10:00 PM <ul style="list-style-type: none"> <li>Course Project Data and Initial Investigation</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #7 – Unit 3B Continuous RVs</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Present Group Assignment #5</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>First Attempt Quiz #8 – Sampling Distributions (GA #7)</li> </ul>
<b>Week 9</b>	<b>10/20</b>	10/22	<b>10/23</b>	10/26
Unit 4A - Estimation	In Class: <ul style="list-style-type: none"> <li>Group Assignment #7</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #8 – Sampling Distributions</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Group Assignment #7</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>First Attempt Quiz #9 – Unit 4A Estimation (GA #8)</li> </ul>
<b>Week 10</b>	<b>10/27</b>	10/29	<b>10/30</b>	11/2
Unit 4A – Hypothesis Testing	In Class: <ul style="list-style-type: none"> <li>Group Assignment #8</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #9 – Unit 4A Estimation</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Work on Draft of Course Project</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>First Attempt Quiz #10 – Unit 4A Hypothesis Testing (GA #9)</li> </ul>
<b>Week 11</b>	<b>11/3</b>	11/5	<b>11/6</b>	11/9
Unit 4B Case CQ	In Class: <ul style="list-style-type: none"> <li>Group Assignment #9</li> </ul> 10:00 PM <ul style="list-style-type: none"> <li>Draft of Course Project (EDA)</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #10 – Unit 4A Hypothesis Testing</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #7</li> </ul>	
<b>Week 12</b>	<b>11/10</b>	11/12	<b>11/13</b>	11/16
Unit 4B Case CC and QQ	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #7</li> </ul> 10:00 PM <ul style="list-style-type: none"> <li>Assignment #7</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #11 – Unit 4B Case CQ</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Group Assignment #10</li> </ul>	
<b>Week 13</b>	<b>11/17</b>	11/19	<b>11/20</b>	11/23
Review Units 1-3B	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #8</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #12 – Unit 4B Cases CC &amp; QQ</li> </ul>	In Class: <ul style="list-style-type: none"> <li>Group Assignment #11</li> </ul>	
<b>Week 14</b>	<b>11/24</b>	11/26	11/27	11/30
Review Units 4A and 4B	In Class: <ul style="list-style-type: none"> <li>Work on Assignment #8</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>Quiz #13 – Units 1-3A</li> </ul>	<b>NO CLASS</b>	

Content to Review	Monday	Wednesday	Thursday	Sunday
<b>Week 15</b>	<b>12/1</b>	12/3	<b>12/4</b>	12/7
	In Class: <ul style="list-style-type: none"> <li>• Work on Course Project</li> <li>• Work on Group Assignment #12</li> </ul> 10:00 PM <ul style="list-style-type: none"> <li>• Assignment #8</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>• Quiz #14 – All Units with emphasis on Units 4A and 4B</li> </ul>	In Class: <ul style="list-style-type: none"> <li>• Group Assignment #12</li> </ul>	
<b>Week 16</b>	<b>12/8</b>	12/10	12/11	12/14
	In Class: <ul style="list-style-type: none"> <li>• Group Assignment #12</li> </ul>	10:00 PM <ul style="list-style-type: none"> <li>• Course Project - Final Version</li> </ul>		