

University of Florida
College of Public Health and Health Professions Syllabus
PHC 6052: Introduction to Biostatistical Methods (3 Credits, Fall 2018)

Delivery Format: ONLINE

Open Access Course Materials: <http://bolt.mph.ufl.edu/>

Course Specific Content and Assessments in E-Learning: <http://elearning.ufl.edu/>

Note: It is important to review the home page in CANVAS each week and read all announcements carefully.

STARTING THIS COURSE: Read this syllabus. Review the E-Learning homepage and weekly schedule. You must take the "Syllabus Quiz" (Quiz 0) in CANVAS and earn a 100% in order to start the course. This quiz is located under Assignments. The quiz is based on the information contained in this syllabus and may be taken as many times as needed to earn a 100%. This quiz is required and will count toward your final grade.

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TEACHING ASSISTANT:	Amy Crisp
Email:	amy.crisp@ufl.edu
Office Hours:	Thursdays 11:45am-1:45pm @ CTRB 5209

PREFERRED COURSE COMMUNICATIONS:

- Ask about specific questions or issues of a personal nature by email through CANVAS inbox in E-learning.
 - Ask more general questions (NOT personal questions) on the corresponding discussion board in E-learning.
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COURSE MATERIALS: All course materials are available online either through CANVAS or in the online open access textbook and course materials. You will also need access to the statistical software package, SAS. There is no required textbook to purchase for this course. However, I recommend the following textbook for additional examples/exercises:

- Daniel, W.D. (2013): *Biostatistics: A Foundation for Analysis in the Health Sciences*. 10th Edition, Wiley.
- Agresti, A. (2013): *The Art and Science of Learning from Data*. 4th Edition, Pearson.

Open Access Course Materials: <http://bolt.mph.ufl.edu>

CANVAS: <http://elearning.ufl.edu>

IMPORTANT: Course materials discuss a few software packages. **In PHC 6052 you are only responsible for SAS.**

Statistical Software Package: We are using SAS Version 9.3 (or higher) in this course. The current version available is SAS 9.4. See the SAS information sheet for specific instructions. **SAS is only available for Windows as a direct installation.**

SAS can be purchased **ON CAMPUS** at the UF computing help desk located at the 132 HUB Stadium Road which should be the one mentioned here: <https://software.ufl.edu/student-agreements/>. Click on **SAS Licensing Agreement** for SAS program purchase information and online documents.

SAS is also available, along with other applications such as Microsoft Office, on the free APPS server, <https://info.apps.ufl.edu>. This may be the best option for MAC users. We do not have tutorials working with this system; so, if you use this, you will need to learn additional skills on your own regarding how the apps server

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works with files and how to get information back and forth between your computer and the APPS server. I found it glitchy and slow and do not recommend this as the best option, but it is a free option and many students have been successful at using this system for their assignments in this course. There will likely be a significant increase in time required to use this system compared to the option above.

ABOUT THE COURSE

PREREQUISITES AND CO-REQUISITES: There are no specific prerequisite courses, but students should be comfortable working with equations and performing basic mathematical calculations including order of operations, fractions, and square roots.

COURSE OVERVIEW: This 3-credit course is a sophisticated introduction to the concepts and methods of biostatistical data analysis. The topics include descriptive statistics, probability, standard probability distributions, sampling distributions, point and confidence interval estimation, hypothesis testing, power and sample size estimation, one and two-sample parametric and non-parametric methods for analyzing continuous or discrete data, and simple linear regression. The SAS statistical software package will be taught in this class for data management, statistical analyses and power calculations.

COURSE OBJECTIVE AND/OR GOALS: Upon completion of this course, students will be able to

- CO-1: Describe the role 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.

RELATION TO PROGRAM OUTCOMES: This three-credit course is a required concentration core course for MPH Biostatistics students and covers the following MPH Biostatistics competencies.

- Analyze quantitative and qualitative data using biostatistics, informatics computer-based programming and software, as appropriate.
- Communicate audience-appropriate public health content, both in writing and through oral presentation.

DESCRIPTION OF COURSE CONTENT, COURSE MATERIALS, AND TECHNOLOGY

COMPUTING: Please review the Student Computing requirements appropriate for you found at <http://mph.ufl.edu/current-students/student-essentials/technology-requirements/>.

COURSE MATERIALS: There is no textbook to purchase for this course. Course materials will be provided in the form of an “online” textbook at <http://bolt.mph.ufl.edu>. The materials for each week will be clearly identified in the E-Learning site for the course. Students are expected to work through the material as scheduled. This page can be used to test your system: <http://bolt.mph.ufl.edu/2012/11/07/test-your-system/>.

It is very important that you work through all content contained on this site as directed and ask questions about the material you do not understand. **Working through the content from start to finish is the best approach to achieve a high level of understanding and success in this course.**

WORKSHEETS: The primary difference between the online and campus versions of this course is an attendance and group activity requirement. The group activities are based upon the worksheets which are always available

from links in the weekly schedule. The solutions will be automatically released on Thursday evening prior to the related Quiz deadline.

VIDEOS: Most videos presented in the course material are stored in YouTube. If the text in the video is too blurry, try increasing the quality of the YouTube video using the small gear icon which appears at the bottom of the video when it is playing. If you want to view the video faster or slower, you can adjust the speed using the gear icon. Many videos have closed captions and/or transcripts available.

FLASH: Embedded self-assessment quizzes and other components of the course materials require Flash. Be sure to enable Flash in your browser and update if needed (<http://www.adobe.com/software/flash/about/>.)

RECOMMENDED SAS BOOKS (optional –extra resources): The Little SAS Book: A Primer 5th ed., by Lora Delwiche and Susan Slaughter is available online via UF, or Applied Statistics and the SAS Programming Language (2005), by Ron P. Cody and Jeffrey K. Smith. The best for you may depend on what you might be doing with SAS after our course. Many resources are available both in print and online via the UF library. Your recommendations for others are also appreciated.

SAS INFORMATION: If you have questions about SAS, ask in the “SAS Questions” discussion board. **Do not allow yourself to waste time working in the software. If you are having issues, let us know immediately, and we will help as soon as possible. Try to make sure as much of your time as possible in the software is productive.** We offer some advice below and are happy to help you determine the best approach for you.

There are tutorials provided for all skills needed for assignments in this course. We have tried to make it as easy as possible to follow along with the tutorials. Watching the videos at a slower speed can help. Viewing the transcripts while you watch or work in SAS may also help. Whenever possible, many students find it helpful to have the videos playing in one window, monitor, or other device while working in the software in another, pausing as needed to work through the process with your own data.

There is also a document on the main SAS Resource page called SAS Skills Document for Material Covered in PHC 6052. This can be very useful but does contain more and possibly different code than we cover in our newer video tutorials. You can also look at the SAS code posted on the actual tutorial pages. As you become more proficient in SAS, it may be that looking at the code will be all that is necessary for you to learn new SAS skills.

E-LEARNING: An E-Learning site will be available for the course. **The weekly schedule and all course materials are available online through this site including grades, assignments, discussions boards, and other course information. It is very important to check the home page of this site each week and review all announcements carefully.** E-Learning is accessible at <http://elearning.ufl.edu/> or through my.ufl.edu. You must have a valid Gatorlink ID and password. For assistance, call the UF Help Desk at 352-392-HELP.

NON-SAS TECHNICAL HELP: Information on many common issues can be found in the E-Learning support pages at <http://studentlife.online.mph.ufl.edu/e-learning/>.

For **technical support for our E-learning in CANVAS site**, activities, and assessments, please contact the Online Course Coordinator at:

Truly Hardemon, MEd
Room Number: HPNP 4173
Phone Number: 352-273-5822
Email Address: hardemont@ufl.edu
Office Hours: 8:00 am to 5:00 pm Monday - Friday

For technical difficulties with E-Learning in general please contact the UF Help Desk at: Learning-support@ufl.edu or (352) 392-HELP – select option 2.

UF BROWSER RECOMMENDATIONS:

<https://kb.helpdesk.ufl.edu/FAQs/SupportedBrowsersForUFWebsites>

RESPONSE TIMES: For questions posted Monday-Thursday, I will try my best to respond within 24 hours. For questions posted Friday-Sunday, I will respond Monday or as soon as possible thereafter.

ANNOUNCEMENTS: Class announcements will be sent via the Announcements tool in E-Learning. You should have your CANVAS notification settings to send alerts to your UF email for announcements through CANVAS. You are responsible for all information in these announcements. As a student of the University of Florida, it is very important to check your UFL email address and course sites regularly. An easy way to access your UF email account is at <http://webmail.ufl.edu>.

DISCUSSION BOARDS: Reviewing the discussion posts of other students and posting your own can be very helpful.

ACADEMIC REQUIREMENTS AND GRADING

Note: Although you can never be awarded negative points for an assignment, if you do not follow the directions given in this syllabus and in the actual assignment, additional points can be deducted even if the assignment is otherwise correct.

QUIZZES: There will be untimed quizzes in CANVAS due each Wednesday by 10pm covering the material assigned for the review the previous week. You have the opportunity to take each quiz up to three times before the due date. Your highest of these scores will be recorded.

When you submit a quiz attempt, you will see your grade and will be able to review your quiz attempt. For each question, you will see whether you answered correctly or incorrectly but it will not reveal the correct answer for any you did not answer correctly. There will also be feedback for each question which will direct you to the most important content to review.

Quizzes test basic definitions and skills and may sometimes be cumulative in that they will go back and ask earlier questions. We highly recommend that you start your first attempt early and take your three attempts on different days with time for reviewing the course material in between. There is feedback available in the quiz review which can help direct you to the content to review.

ASSIGNMENTS: Most assignments will involve data analysis in software and interpretation and/or certain questions which cannot be easily presented in the quizzes. Assignments will be due on Monday at 10pm, but all assignments except the first and last will require extended work and should be started as early as possible, no later than the week prior to the due date, in order to have time to address any questions or issues.

COURSE PROJECT: Each student will individually prepare a course project consisting of a guided data analysis based upon two (hopefully linearly 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. This course project will be completed in 4 STEPS during the semester.

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

GRADING:

Requirement	% of final grade
Quizzes (15 – 2% each)	36%
Assignments (7)	40%
Course Project	24%

Final Average	94-100	90-93	85-89	80-84	77-79	74-76	70-73	67-69	64-66	60-63	57-59	<57
Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
GPA	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0

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.

GRADE RESPONSE TIMES: The time to receive your grade on assignments will vary depending on the type and length of the assignment. The instructor and TAs will always strive to return your graded work as soon as possible.

MAKE-UP POLICY: Students are allowed to make up work ONLY as a result of illness or other unanticipated circumstances warranting a medical excuse and resulting in the student missing an assignment 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 e-learning support 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.

ATTENDANCE: This is an online course. "Attendance" means you are expected to go through the course materials, take notes, pay attention to and post in the discussion boards. This is to be done at your own pace, but assignments and quizzes have scheduled deadlines to keep you on track. You are welcome to get ahead if you need flexibility in future weeks.

STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

COMMUNICATION GUIDELINES: Questions about course material should be asked in class or posted on the course discussion boards in E-Learning. Questions about specific quiz questions or issues of a personal nature should be sent by email through E-Learning.

ONLINE FACULTY COURSE EVALUATIONS: Students are expected to provide feedback on the quality of instruction in this course by completing online evaluation at <http://evaluations.ufl.edu>. I value your feedback on the course and consistently work to improve the course based on your comments in the evaluations. Course evaluations are also an integral part of the faculty promotion process. Evaluations are typically open the last two weeks of the semester.

ACADEMIC INTEGRITY: Students are expected to act in accordance with the UF policy on academic integrity. As a student at UF, 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 UF. The following pledge is either required or implied on all work:

"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 UF policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at UF will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information on the student honor code see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>.

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

ADVICE

All that I can ask is that you do the best you can with the materials that are made available to you and to ask when you need more direction or explanation.

It is expected that you will spend approximately 10-12 hours per week on this course. This is roughly equivalent to 3 hours in class combined with 6-9 hours outside of class. Scheduling your time wisely and working efficiently will minimize the need for extra work in this course.

Generally, I advise students to break this time up into blocks of 1-3 hours split over as many days of the week as possible given your schedule. Working on too much material in one sitting is more likely to cause frustration and does not allow for time for understanding to develop or for questions to be answered.

Learn to use the materials to your greatest advantage. There is a lot of content, but if you understand the examples we present or if you have experience with certain topics, it may not be necessary to review all of the content we provide.

The questions presented in the “Learn by Doing” and “Did I Get This” activities as well as the course worksheets are indicative of important questions and concepts that you will need to understand and are designed to teach as well as test your understanding. We highly encourage you to go through these as they are presented in the online textbook (for the “Learn by Doing” and “Did I Get This” activities) and on the home page in E-Learning (for the worksheets).

If you go through the content as directed, you will learn the skills you need to succeed in the course as well as build a foundation of statistical knowledge. If at times you feel lost, please ask but also understand that the course is building to a complete picture. Sometimes it is hard to see how each topic is related until later in the semester when we tie everything together. Often in the “Learn by Doing” activities and worksheets we are leading you to think about things that will be important later in the course in addition to working on skills related to the current topic.

Watch the software tutorials carefully, especially if you find the software aspect challenging, and review our suggestions in the SAS information section earlier. Do not allow yourself to waste time working in the software. If you are having issues, let us know immediately and we will help as soon as possible. Try to make sure as much of your time as possible in the software is productive.

Be sure to ask when you don’t understand, and work hard to stay on track with the material. Getting behind can be difficult to fix in any course. Let the instructor know as soon as possible if you feel you are falling behind.

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: Your well-being is important to the University of Florida. **The U Matter, We Care initiative** is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need.

If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

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>. Online 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.

INCLUSIVE LEARNING ENVIRONMENT

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida’s Non-Discrimination Policy, which reads, “The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans’ Readjustment Assistance Act.” If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: www.multicultural.ufl.edu

PHC 6052 ONLINE Schedule
For more details, see the weekly schedule in E-learning

Content to Review	Major Upcoming Activities and Assignments (See E-learning Home Page for More Details)	Monday	Wednesday
Week 1			8/22
Introduction Preliminaries	<ul style="list-style-type: none"> • Assignment #1 • Syllabus Quiz • Quiz #1 		
Week 2		8/27	8/29
Unit 1A – EDA for One Variable	<ul style="list-style-type: none"> • Assignment #1 • Syllabus Quiz • Worksheet #1 – Variables • Quiz #1 • Quiz #2 • Assignment #2 <hr style="width: 50%; margin: 10px auto;"/> <p style="text-align: center;">DUE BY END OF THIS WEEK: Software Working!!! 6052 = SAS</p>	<p>Due 10:00pm</p> <ul style="list-style-type: none"> • Assignment #1 – Self Assessment 	<p>Due 10:00pm</p> <ul style="list-style-type: none"> • Syllabus Quiz in Assessments • Quiz #1 – Preliminaries
Week 3		9/3	9/5
Unit 1B – EDA for Two Variables	<ul style="list-style-type: none"> • Worksheet #1 – Variables • Quiz #2 • Quiz #3 • Assignment #2 	Holiday – Labor Day	<p>Due 10:00pm</p> <ul style="list-style-type: none"> • Quiz #2 – Unit 1 (Part 1 – Through “Normal Shape”)
Week 4		9/10	9/12
Remainder of Unit 1, All of Unit 2	<ul style="list-style-type: none"> • Worksheet #1 – Variables • Quiz #3 • Quiz #4 • Assignment #2 • Assignment #3 	<p>Due 10:00pm</p> <ul style="list-style-type: none"> • Assignment #2 Part A – EDA for One Variable (Software) 	<p>Due 10:00pm</p> <ul style="list-style-type: none"> • Quiz #3 – Unit 1 (Part 2 – Role-type through Linear Regression)

Content to Review	Major Upcoming Activities and Assignments (See E-learning Home Page for More Details)	Monday	Wednesday
Week 5		9/17	9/19
Unit 3A – Probability	<ul style="list-style-type: none"> • Worksheet #2 – Probability • Quiz #4 • Quiz #5 • Assignment #2B • Assignment #3, #4, or #5 	Due 10:00pm <ul style="list-style-type: none"> • Assignment #2 Part B – EDA for One Variables (Written) 	Due 10:00pm <ul style="list-style-type: none"> • Quiz #4 – Causation – Unit 2
Week 6		9/24	9/26
Unit 3B – Discrete RVs	<ul style="list-style-type: none"> • Worksheet #3 – Discrete RVs • Quiz #5 • Quiz #6 • Assignment #3 • Assignment #4 	Due 10:00pm <ul style="list-style-type: none"> • Assignment #3 Part A – Case CC and CQ (Software) 	Due 10:00pm <ul style="list-style-type: none"> • Quiz #5 – Unit 3A - Probability
Week 7		10/1	10/3
Unit 3B – Continuous RVs	<ul style="list-style-type: none"> • Worksheet #4 – Continuous RVs • Quiz #6 • Quiz #7 • Assignment #3B • Assignment #4 • Assignment #5 • Course Project STEP 1 	Due 10:00pm <ul style="list-style-type: none"> • Assignment #3 Part B – Case CC and Case CQ (Written) • Assignment #4 – Independent Events 	Due 10:00pm <ul style="list-style-type: none"> • Quiz #6 – Unit 3B – Discrete RVs
Week 8		10/8	10/10
Unit 3B – Sampling Distributions	<ul style="list-style-type: none"> • Worksheet #5 – Estimation • Quiz #7 • Quiz #8 • Assignment #5 • Course Project STEP 1 	Due 10:00pm <ul style="list-style-type: none"> • Assignment # 5 Part A – EDA for Two Variables (Software) 	Due 10:00pm <ul style="list-style-type: none"> • Quiz #7 – Unit 3B – Continuous RVs

Content to Review	Major Upcoming Activities and Assignments (See E-learning Home Page for More Details)	Monday	Wednesday
Week 9		10/15	10/17
Unit 4A – Estimation	<ul style="list-style-type: none"> • Worksheet #5 – Estimation • Quiz #8 • Quiz #9 • Assignment #5 • Course Project STEP 1 	Due 10:00pm <ul style="list-style-type: none"> • Assignment #5 Part B – EDA for Two Variables (Written) • Course Project STEP 1 	Due 10:00pm <ul style="list-style-type: none"> • Quiz #8 – Unit 3B – Sampling Distributions
Week 10		10/22	10/24
Unit 4A – Hypothesis Testing	<ul style="list-style-type: none"> • Worksheet #6– Hypothesis Testing • Quiz #9 • Quiz #10 • Course Project STEP 2 • Assignment #6 		Due 10:00pm <ul style="list-style-type: none"> • Quiz #9 – Unit 4A – Estimation
Week 11		10/29	10/31
Unit 4A – Hypothesis Testing	<ul style="list-style-type: none"> • Quiz #10 • Course Project STEP 2 • Assignment #6 	Due 10:00pm <ul style="list-style-type: none"> • Course Project STEP 2 	
Week 12		11/5	11/7
Unit 4B Concepts	<ul style="list-style-type: none"> • Quiz #10 • Quiz #11 • Course Project STEP 3 • Assignment #6 	Due 10:00pm <ul style="list-style-type: none"> • Assignment #6 – Examples from Literature 	Due 10:00pm <ul style="list-style-type: none"> • Quiz #10 – Unit 4A – Hypothesis Testing

Content to Review	Major Upcoming Activities and Assignments (See E-learning Home Page for More Details)	Monday	Wednesday
Week 13		11/12	11/14
Unit 4B Concepts	<ul style="list-style-type: none"> • Quiz #11 • Quiz #12 • Course Project STEP 3 	Veterans Day Holiday	
Week 14		11/19	11/21
Unit 4B Concepts	<ul style="list-style-type: none"> • Quiz #11 • Quiz #12 • Course Project STEP 3 • Bonus: Paired T-test in Software 	Due 10:00pm <ul style="list-style-type: none"> • Course Project STEP 3 	Thanksgiving Holiday
Week 15		11/26	11/28
Unit 4B Concepts	<ul style="list-style-type: none"> • Quiz #11 • Quiz #12 • Course Project STEP 4 • Bonus: Paired T-test in Software 	Due 10:00pm <ul style="list-style-type: none"> • Bonus: Paired T-test in Software 	Due 10:00pm <ul style="list-style-type: none"> • Quiz #11 – Unit 4B – Case CQ • Quiz #12 – Unit 4B – Case CC & QQ
Week 16		12/3	12/5
Review	<ul style="list-style-type: none"> • Quiz #13 • Quiz #14 • Course Project STEP 4 • Assignment #7 	Due 10:00pm <ul style="list-style-type: none"> • Course Project STEP 4 	
Week 17		12/10	12/12
Final Exam Week	<ul style="list-style-type: none"> • Assignment #7 • Quiz #13 • Quiz #14 	Due 10:00pm <ul style="list-style-type: none"> • Assignment #7 – End of Semester Self-Assessment Note: Assignment #7 opens 12/4 or by request for students who have completed all except Q13 and Q14	Due 10:00pm <ul style="list-style-type: none"> • Quiz #13 – Review Units 1-3 • Quiz #14 – Review Units 4 Note: Above quizzes open 11/29 or by request if completed Quizzes 1-12