Course Syllabus

Intermediate Statistical Analysis I
BST611
Fall 2017

I. Instructor and Contact Information

Instructor(s) Name	Suzanne E. Perumean-Chaney, Ph.D.
Instructor Email	schaney@uab.edu
Office Location	420B (enter through 414) Ryals School of Public Health
Instructor Phone	(205) 975-9145
Teaching Assistant (s)	TBA

Office Hours: Monday & Tuesday 11:00am to 12:30pm or by appointment

E-mail Policy: I will check my email between 7:00 am and 3:00 pm every weekday. Please anticipate a 12-24 hour response time on weekdays. I do not answer emails on the weekend.

Preferred Method of Contact: Messages via canvas email.

II. Course Information

Course Description and Purpose of the Course: BST 611 is a 3-credit, intermediate-level graduate course in basic applied statistical methods. It is the first course in the BST 611/612/613 series. This course is designed to prepare non-biostatistics students in identifying and conducting statistical analyses as degree candidates working on a thesis/dissertation, as academic researchers, or as employees of public health agencies and related private companies. BST 611 will introduce you to basic statistical concepts, statistical methods, and data analyses. You will also learn how to interpret statistical software output and how to communicate results.

CEPH Competencies/Departmental Competencies/Course Learning Objectives Alignment: Competencies define what a successful learner should know and be able to do upon completion of a particular program. These statements describe in measurable terms the knowledge, skills and abilities a successful graduate will demonstrate at the conclusion of the program. Each CEPH and departmental competencies are mapped to course learning objectives (CLOs). The course learning objective is what the student is expected to be able to do upon successfully completing this course. The relationship between competencies and course learning objectives (the incremental learning experiences at the course and experiential levels that lead to the development of the competencies) should be explicit and aligned with the program's mission, goals and objectives. (CEPH Accreditation Criteria Public Health Programs)

At the completion of this course students will be able to:

CEPH Competencies	Departmental Competencies	Course Learning Objectives	Assessments Used to Assess
1. Apply epidemiological methods to the breadth of settings and situations in public health practice 2. Select quantitative and qualitative data collection methods appropriate for a given public health context	BST MPH 1: Apply descriptive and inferential methodologies (according to the type of study design) for answering a particular research question BST MPH 2: Understand issues of data collection, analysis, and study management	Apply descriptive techniques commonly used to summarize public health data Describe the basic concepts of probability, random variation and commonly used statistical probability distributions Distinguish among the different measurement scales and the implications for selection of statistical methods to be used based on these distinctions Apply common statistical methods for inference Describe preferred methodological alternative to commonly used statistical methods when assumptions are not me	All weekly assignments, homeworks, exams
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate	BST MPH 2 & MPH 5: Utilize common computer programs to aid in analysis, description, and presentation of statistical data and results	Display data via tables, charts, and graphs, so that they can be easily understood Manage datasets and select the appropriate approach to analyze data	All weekly assignments, homeworks, exams
4. Interpret results of data analysis for public health research, policy or practice	BST MPH 1 & MPH 4: Critically evaluate published research	Interpret the results of statistical analysis found in public health studies	Manuscript critiques, discussion boards
5. Communicate audience-appropriate public health content, both in writing and through oral presentation	BST MPH 4 & MPH 3: Effectively communicate research results orally and in writing across the spectrum of scientific venues	Communicate results of statistical analysis to biostatisticians and non-biostatistician public health researchers	All weekly assignments, homeworks, exams, discussion boards

Credit Hours: This course is worth 3 credit hours.

Prerequisites: None.

Course Clock: The times used in this syllabus are all Central Standard Time.

III. Course Requirements

Required Textbook(s)/Software:

Daniel, W.W. & Cross, C.L. (2013). Biostatistics: A Foundation for Analysis in the Health Sciences (10th Edition). New York, NY: Wiley & Sons. ISBN 978-1-118-30279-8.

Student website for textbook:

http://www.wiley.com/WileyCDA/WileyTitle/productCd-EHEP002458,descCd-STUDENT.html

Other Reading Material: Journal articles demonstrating the statistical methods used in this course will be provided in Canvas.

Software: This course requires the use of a statistical software package. The statistical packages allowed for this course include SAS, SPSS, STATA, JMP, and R. The TA and I will be able to provide some support in acquiring and running these packages; however, it is your responsibility to complete the assignments on time. Not knowing how to use your selected software package is not an acceptable excuse for missing assignment deadlines. You can google your selected package to locate statistical tutorials or YouTube videos on the web.

For SAS, SPSS, STATA, and R tutorials: http://www.ats.ucla.edu/stat/

For JMP tutorials: http://www.jmp.com/academic/learning_library.shtml

For R tutorials: http://www.tutorialspoint.com/r/

Time Requirements/Commitment: This is a 3 credit hour course. You should anticipate spending 3 hours per week attending classes. You should also anticipate another 2 hours of study time per lecture hour. Therefore, you should expect to spend an additional 6 hours a week reading your textbook, studying notes, practice using your selected software, running analyses, and creating tables/figures to support your homework assignments'/exams' write-up.

Submitting Assignments: The Article Review Checklists, Homework Assignments, and Final Exam must be submitted through Canvas by the specified due date; no paper submissions will be accepted for these assessments. Each assignment will have a submission link. Papers will be checked by Turnitin.com within the Canvas system. Although Canvas includes numerous reminders of assessments that are due, it is your responsibility to ensure that you meet all deadlines. You will still have access to material after the end of the module, but no additional posts to discussion boards or assignments will be accepted after this date/time.

IV. Course Schedule:

Module # Week	Topic	Readings	Activities/Due Dates (Sunday @ 11:59 pm)	Module Learning Objectives
Getting Started **Module 1** 8/28 to 9/3	Intro to Course Intro to Biostatistics	Chapter 1	Honor Agreement Software on Computer	BST MPH 1, 2, 3, 4, & 5
Module 2 9/5 to 9/10	Intro to Statistical Software		HMWK #1	BST MPH 1, 2, 3, 4, & 5
Module 3 9/11 to 9/17	Descriptive Statistics	Chapter 2	Weekly Quiz #1 Article Review #1 Discussion #1	BST MPH 1, 2, 3, 4, & 5
Module 4 9/18 to 9/24	Inferential Statistics: Z-Statistics Probability Distribution	Chapters 3 & 4	Weekly Quiz #2 HMWK #2	BST MPH 1, 2, 3, 4, & 5
Module 5 9/25 to 10/1	Sampling Distributions	Chapter 5	Weekly Quiz #3	BST MPH 1, 2, 3, 4, & 5
Module 6 10/2 to 10/8	Hypothesis Testing	Sections 7.1, 7.9, & 7.10	Weekly Quiz #4 Article Review #2 Discussion #2	BST MPH 1, 2, 3, 4, & 5
Module 7 10/9 to 10/15	Estimation One-Sample t Test	Chapter 6 Section 7.2	Weekly Quiz #5 Article Review #3 Discussion #3	BST MPH 1, 2, 3, 4, & 5
Module 8 10/16 to 10/22	Independent t Tests Paired t Tests	Sections 7.3 & 7.4	Weekly Quiz #6 HMWK #3	BST MPH 1, 2, 3, 4, & 5
Module 9 10/23 to 10/29	Analysis of Variance (ANOVA)	Sections 7.7 & 7.8	Weekly Quiz #7 HMWK #4	BST MPH 1, 2, 3, 4, & 5
Module 10 10/30 to 11/5	Correlation Simple Regression	Chapter 9	Weekly Quiz #8 Article Review #4 Discussion #4	BST MPH 1, 2, 3, 4, & 5
Module 11 11/6 to 11/12	Nonparametrics Binomial Chi-Square	Sections 7.5, 7.6, 13.1 & 13.2 Chapter 12	Weekly Quiz #9 Article Review #5 Discussion #5 HMWK #5	BST MPH 1, 2, 3, 4, & 5
Module 12 11/13 to 11/19	Identifying the Appropriate Statistic		HMWK #6	BST MPH 1, 2, 3, 4, & 5
11/20 to 11/26	Thanksgiving Break—No Class			
Module 13 11/27 to 12/3	Special Topics			BST MPH 1, 2, 3, & 4
Module 14 12/4 to 12/10	Final Exam Due Sunday, December 10th @ 11:59 PM			BST MPH 1, 2, 3, 4, & 5
Last Day to Withdraw: 10/20/17				

V. Grading

Attendance and Participation: Students are expected to attend all classes and to have read all of the assigned material prior to class. In the case of a missed class, it is the student's responsibility to obtain any notes, handouts, or announcements given during class from fellow students.

Article Review Checklist: There are five (5) article review checklists due during the semester. Reading relevant, published articles that utilize the statistical methods taught in this course is important in understanding the relationship between the statistical methods and the research questions and design. In addition, these assignments provide you with an example of how each statistical method is written and displayed. As an introduction to a new statistical method, you will read the article provided in Canvas that showcases the new method. For the assignment, you will submit in Canvas a completed checklist on that article, identifying the page numbers and paragraphs where in the article the specific checklist questions are addressed.

Discussion Boards: Interaction with other students and practical application of the statistical method is essential to becoming competent in biostatistics. There are five (5) discussion boards due during the semester that will be based on the article reviewed for that specific module's checklist. You are required to make one original post within the discussion board and respond to at least one other discussion thread. Original posts must be one paragraph in length. Responses must be at least three sentences in length and must address specific content. Short responses such as "Great post" or "I agree" are not acceptable without explanations. When participating in a discussion, please be respectful of everyone's post. While it is acceptable to disagree with someone's opinion, you should always do so in a respectful manner.

Weekly Quizzes: There are nine (9) weekly quizzes due during the semester. The weekly quizzes will consist of 10 true/false and multiple choice questions. These questions will focus on the material covered in the book and in the lectures. The highest grade earned from two attempts will be used in the overall quiz average. There is no time limit on the quizzes.

Homework Assignments: There are six (6) homework assignments due during the semester. These assignments allow you to practice conducting, interpreting, and communicating results in a written format for each of the statistical methods taught in this course. Homework must be typed, converted to PDF format, and submitted through Canvas.

Final Exam: There is one final exam in this course. The final exam will be comprehensive and will require you to identify the appropriate statistical method, conduct the analyses, and report the results in the appropriate written format for several of the statistical methods taught in the course. The final exam must be typed, converted to PDF format, and submitted through Canvas

Evaluation:

Assessment/Activity	**Percent**
Article Review Checklists	5%
Discussion Posts	5%
Homework Assignments	30%
Weekly Quizzes	30%
Final Exam	30%
Total Points and Percentages	100%

Instructor Response Time:

- Questions via email will be answered within 24 hours during the work week.
- Weekly Quizzes, Article Reviews, and Discussion feedback/grades will be posted within 48 hours after the activity's submission due date.
- Homework Assignment feedback/grades will be posted will be posted within 72 hours after the activity's submission due date.
- Final grades will be posted by the due date listed in the Academic Calendar.

Grading Scale:

Graduate

Grade	Percentage
A=	**90-100%**
B=	**80-89%**
C=	**70-79%**
F=	**0-69%**

Special Instructions: I do not round up or adjust final grades. There are NO exceptions to this policy. If you find that you are in danger of not earning a B or higher, it is your responsibility to meet with me or the TA for extra help, to hire a tutor, and even to consider withdrawing from the course if your current circumstances make it impossible for you to complete the work necessary to succeed in the course this semester.

VI. Technology Requirements and Support

System Requirements: View the system requirements specified by the School of Public Health. If your computer does not meet the standards, you may encounter problems testing or accessing content. Laptops that do not meet the standards may not be used for testing. If you use a laptop that does not meet the minimum requirements, you will not be given additional time or opportunities during an exam as a result of laptop issues. Contact 205-934-7728 for technical problems within the School of Public Health or AskIT@uab.edu or call 205-996-5555 for other technical problems.

Browser Requirements: Students will need to use Firefox or Google Chrome browsers in order to access Canvas.

Online Delivery System (Course Platform): This course will be delivered through Canvas by Instructure. You can access Canvas through BlazerNet or by visiting http://uab.instructure.com . You should log in using your Blazer ID and password. At any time you can contact the Canvas support team or user guides by contacting Canvas Support Hotline at 855-778-9969 or by clicking the Help button in the left-hand navigation bar of the screen. You can also contact the Office of Student Services at soph@uab.edu for assistance.

VII. Communication Guidelines

When sending emails to either the instructor or TA, please be respectful in your communication. Additionally, you should use appropriate language in your posts: avoid "net speak" such as TTYL, LOL, L8R, U (instead of you). Please visit UAB Code of Conduct for additional information.

VIII. Course and University Policies

Incomplete Grades: The UAB Incomplete Grade Policy states that a temporary grade notation of "I "for incomplete may be requested by the student prior to the end of the term and submitted at the course master's discretion due to unforeseen circumstances that effect the student's ability to complete course requirements. Students requesting consideration of an "I" grade must discuss with the course instructor, and agree upon a plan and a schedule for, completion of course requirements. It is the student's responsibility to initiate this discussion, assure completion of this form and return it to the Office of Student and Academic Services. If no permanent grade is reported by the end of the subsequent term, an "F" will be automatically assigned to replace the "I". Extension of "I" grades may be granted only upon written request of the course instructor to the associate dean for academic affairs. Complete the SOPH Incomplete Grade Request Form.

Late Assignments: No late submissions are accepted after the deadline. If you foresee that you will not be able to make a particular deadline due to work, family, or a University-recognized excuse, please contact me prior to the deadline.

Accessibility: UAB is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services for information on accommodations, registration and procedures. Requests for reasonable accommodations involve an interactive process and consist of a collaborative effort among the student, DSS, faculty and staff. If you are registered with Disability Support Services, please contact me to discuss accommodations that may be necessary in this course. If you have a disability but have not contacted Disability Support Services, please call 934-4205 or visit their website.

Title IX: The University of Alabama at Birmingham is committed to providing an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual discrimination, harassment, misconduct, or assault we encourage you to report the incident. UAB provides several avenues for reporting. Visit UAB's Title IX Policy and UAB's Equal Opportunity and Anti-Harassment Policy for more information about Title IX, policy, reporting, protections, resources and supports.

Honor Code: As a student in the School of Public Health, you are subject to the School of Public Health Student Honor Code. You are responsible to understand the contents of the Honor Code and to abide by it. Academic Dishonesty: Plagiarism is the undocumented use of other authors' words, texts, images, and ideas that don't come from your own head. Making up sources, altering numbers, statistics, or just a few words of a document is considered plagiarism. Poor documentation or paraphrasing of a source is also considered plagiarism. Plagiarism in this course is taken seriously; any violations will be punished to the full extent allowable under the School of Public Health Honor Code. All assignments will be submitted through the Turnitin system to document the originality of your contributions to the class.

UAB Policies: To see all the current university-wide policies visit UAB Policies and Procedures Library.

IX. Library Resources: You can access library materials such as databases, electronic journals, encyclopedias, and other various resources. Visit UAB Libraries.

X. UAB Student Counseling Services: Student Counseling Services offers students of all backgrounds, races, religious beliefs, sexual orientations, gender identities, abilities, ethnicities, and cultures a safe place to discuss and resolve issues that interfere with personal and academic goals. Student Counseling Services recognizes and honors the complex intersectionality of all aspects of a person's identity and presenting concerns. All enrolled UAB students are eligible for counseling. Students can schedule an appointment by phone, (205) 934-5816, or in-person at the Student Health and Wellness Center at the LRC, 1714 9th Avenue South. Students should be prepared to tell the intake coordinator why they are seeking counseling.

Instructors reserve the right to make changes to the syllabus or course content at any time. It is your responsibility to check the modules and announcements often for changes in assignment requirements, due dates, and materials.