

## Course Syllabus

### *Intermediate Statistical Analysis II* **BST612** *Spring 2018*

#### I. Instructor and Contact Information

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

**Office Hours:** Tuesday & Thursday 12:30pm to 2:00pm 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 612 is a 3-credit, intermediate-level graduate course in basic applied statistical methods. It is the second 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 612 will extend the concepts/statistical methods learned in BST 611 from bivariate to multivariate research questions. You will also learn how to interpret statistical software output and how to communicate results. **Prerequisites: BST 611.**

#### **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:

<b>CEPH Competencies</b>	<b>Departmental Competencies</b>	<b>Course Learning Objectives</b>	<b>Assessments Used to Assess</b>
1. Apply epidemiological methods to the breadth of settings and situations in public health practice	BST MPH 1: Apply descriptive and inferential methodologies (according to the type of study design) for answering a particular research question	Apply descriptive techniques commonly used to summarize public health data	All weekly assignments, homeworks, exams
2. Select quantitative and qualitative data collection methods appropriate for a given public health context	BST MPH 2: Understand issues of data collection, analysis, and study management	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 met	
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:** BST611

**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 primary statistical package used for this course is JMP; however, other statistical packages are allowed for this course such as SAS, SPSS, STATA, and R. I have the majority of the practice examples built out for SAS, SPSS, & R; 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](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.

#### IV. Course Schedule:

<b>Module # Week</b>	<b>Topic</b>	<b>Readings</b>	<b>Activities/Due Dates (Monday @ 11:59 pm)</b>	<b>Module Learning Objectives</b>
<b>Getting Started Module 1</b> 1/9 to 1/15	Intro to Course  Review: Descriptive Stats	Chapter 1 Chapter 2	Honor Agreement Intro to Class Software on Computer	BST MPH 1 & 2
<b>Module 2</b> 1/16 to 1/22	Review: Inferential Stats	Chapter 4,5, & 7	Article Review #1 Discussion #1	BST MPH 1 & 2
<b>Module 3</b> 1/23 to 1/29	Regression Multiple Regression	Chapter 9 & 10	HMWK #1	BST MPH 1, 2, 3, 4, 5
<b>Module 4</b> 1/30 to 2/5	Multiple Regression	Chapter 11	Article Review #2 Discussion #2	BST MPH 1, 2, 3, 4, 5
<b>Module 5</b> 2/6 to 2/12	Multiple Regression		HMWK #2	BST MPH 1, 2, 3, 4, 5
<b>Module 6</b> 2/13 to 2/19	Logistic Regression	Section 11.4	Article Review #3 Discussion #3	BST MPH 1, 2, 3, 4, 5
<b>Module 7</b> 2/20 to 2/26	Logistic Regression		HMWK #3	BST MPH 1, 2, 3, 4, 5
<b>Module 8</b> 2/27 to 3/5	ANOVA ANCOVA	Chapter 8		BST MPH 1, 2, 3, 4, 5
<b>Module 9</b> 3/6 to 3/12	Repeated Measures	Section 8.4	Article Review #4 Discussion #4	BST MPH 1, 2, 3, 4, 5
3/13 to 3/19	<b>Spring Break—No Class</b>			
<b>Module 10</b> 3/20 to 3/26	Repeated Measures		HMWK #4	BST MPH 1, 2, 3, 4, 5
<b>Module 11</b> 3/27 to 4/2	Survival Analysis	Chapter 14	Article Review #5 Discussion #5	BST MPH 1, 2, 3, 4, 5
<b>Module 12</b> 4/3 to 4/9	Survival Analysis		HMWK #5	BST MPH 1, 2, 3, 4, 5
<b>Module 13</b> 4/10 to 4/16	Special Topics			BST MPH 1, 2, 3, & 4
<b>Module 14</b> 4/17 to 4/23	Final Exam Due Monday, April 23 <sup>th</sup> @ 11:59 PM			BST MPH 1, 2, 3, 4, 5
<b>Last Day to Withdraw: March 2, 2018</b>				

## V. Grading

**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. Your first graded discussion board assignment is your introduction to the class post that is due during the first week of class. After this posting, there are five (5) content 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.

**Homework Assignments:** There are five (5) 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. You have the opportunity to resubmit your homework assignments for up to half the points missed. If you choose to resubmit your homework assignment, you must do so within one (1) week after the assignment has been graded and released.

**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	10%
Discussion Posts	10%
Homework Assignments	40%
Final Exam	40%
<b>Total Points and Percentages</b>	<b>100%</b>

### 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 72 hours after the activity's submission due date.
- Homework Assignment feedback/grades will be posted will be posted within 96 hours after the activity's submission due date.
- Final grades will be posted by the due date listed in the Academic Calendar.

### Grading Scale:

Grade	Percentage
<b>A=</b>	<b>90-100%</b>
<b>B=</b>	<b>80-89%</b>
<b>C=</b>	<b>70-79%</b>
<b>F=</b>	<b>0-69%</b>

**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](mailto: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](mailto: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:** Late submissions are accepted up to one week 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.***