

**Division of Biostatistics  
Department of Public Health Sciences  
University of Miami Miller School of Medicine**

**BST 650**

**TOPICS IN BIOSTATISTICAL  
RESEARCH**

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**Course Prerequisites:**

This course is required for graduate students attending their second year and above in the Doctoral Program in Biostatistics. Accordingly, the minimum formal pre-requisites amount to 3 semesters of calculus, at least one semester of probability theory, one semester of linear algebra and a minimum of four courses in statistics at the undergraduate level. More importantly, the informal pre-requisite is the statistical sophistication that having this background normally implies. Consequently, students who do not have the minimum formal pre-requisites may take the course only if the instructor permits.

**Course Description**

This biostatistics seminar course counts for one credit hour per semester. Students will normally take this course each semester they are registered in the Division of Biostatistics, starting the first semester of their second year.

The course consists of a series of research level presentations in contemporary biostatistical research (broadly defined) by diverse outside speakers as well as Faculty in the Division of Statistics or in other units on campus who are hosting presentations in biostatistical research. The emphasis will be on new methodologies and new developments in existing methodologies. However, recent developments on the implementation and comparison of methodology and on data types may also be included.

## **Course Learning Objectives**

Upon completion of this course, the students will have:

- An increased understanding of the range of contemporary biostatistical research
- Increased ability to evaluate the appropriateness of new biostatistical methodologies for use in practical problems
- An increased ability to recognize the necessity for new methods and be able to go about developing and implementing them
- Extended knowledge of emerging biostatistical theory and methods
- Developed increased statistical maturity enabling them to choose a topic for a Major Paper or Thesis

## **Course Format**

The class will meet once per week for one hour. These meetings will be primarily for organizational and discussion purposes, and to ensure that students in the class are attending appropriate seminars.

It is assumed that the seminars the students attend will be one hour. They will be provided by faculty members in the Division of Biostatistics, faculty members from other units at UM, and, most importantly, by outside speakers. It cannot be known in advance when these seminars will be given since many of them are only planned shortly before they are given.

Whenever possible, Division of Biostatistics Faculty Members and a speaker whose seminar is part of the course will be invited to attend the class. Thus, the students will have an opportunity to talk informally to each speaker and Faculty Members and ask questions they may have about the presentation and related topics.

## **Course Requirements and Evaluation**

*Attendance.* The one hour per week discussion meetings is mandatory. In addition, students must attend and participate in all scheduled seminars during the semester. It is understood that all seminars in the Division of Biostatistics will be included among the required seminars for students to attend. If a student cannot attend a specific seminar, the Course Director will assign another seminar for the student to attend. It is understood that students will also propose seminars to attend for the purposes of this course. However, before a seminar will be included among the seminars required for the course, the approval of the Course Director is required. The Course Director may require the students to provide documentation of attendance at seminars.

*Participation.* Students are expected to participate actively in post-seminar discussions. This is particularly important and will constitute a major portion of the basis for the final mark obtained.

Homework Assignments. The seminars will be chosen as far in advance as possible. Where feasible, a seminar abstract will be distributed so the students can familiarize themselves with the speaker, the topic, related material, and possible applications.

Each student will be required to write a 2-page (max) report on each of 4 (Max) seminars they attend. These reports should start with a summary of the material presented and then discuss, as appropriate: (1) its relevance to biostatistical practice such as its breadth or limitations of applicability; (2) possible new applications, examples, or results; and (3) strengths and weaknesses of the new material relative to similar methodologies.

The report will be due in the Course Director's office no later than 12:00 noon on the Monday of the week following the seminar. No exceptions!

Grading.

This course will be graded on a Pass/Fail basis.

Each student will submit 4 reports to be marked on a zero to ten scale. Taken together, this will account for 70% of a student's final mark. The other 30% will be awarded for participation. This will be at post-seminar question-and-answer discussions when the seminar is held in the Division of Biostatistics. In addition, this may include meetings between speakers, other Faculty Members, and the class as a whole, as well as meetings set up between the student and the speaker.

Student Conduct. Students are responsible for knowing and complying with all University of Miami Policies and Regulations which are listed in the Student Handbook. This policy includes policies on cheating and plagiarism. If definitive proof of cheating or plagiarism is found, the student in question may be dismissed from the graduate programs in biostatistics.

Syllabus Changes: Information contained in the course syllabus, other than the format for the calculation of the final mark and absence policies, is subject to change with reasonable advance notice, as may be necessary by the availability of suitable seminars.