Syllabus Epi 8323

Chris Slaughter

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Instructors

- Chris Slaughter
  - Associate Professor, Department of Biostatistics
  - Office: 11th Floor, 2525 West End Ave #11-127
  - james.c.slaughter@vumc.org
- Valerie Gunchick (TA)
  - Will lead manuscript reviews

Class Hours

- Tuesday and Thursday, 1:30 to 3:30
- Office Hours
  - By appointment
  - (Before and after class too)

Course Materials

Web Page

- Main page: brightspace.vanderbilt.edu
- Datasets: To be provided

Course Notes

- Course notes will be the primary source
- Available on web page
- Daily class schedule will indicate notes being covered

Course Labs/Practicum

- Lab instructions and answers in Stata and R will be posted on course web page

Textbook (not required)

- Hosmer DW and Lemeshow S. Applied Survival Analysis: Regression Modeling of Time to Event Data.
- Available from Vanderbilt Library (free access)

Topics (from course catalog)

- Concepts and applications in survival analysis and analysis of incidence rates, including truncation and censoring
- Life tables
- Nonparametric approaches (e.g. Kaplan-Meier, log-rank)
- Semi-parametric approaches (e.g. Cox models, proportional hazards regression)
- Parametric approaches (e.g. Weibull, gamma regression)
- Accommodating time-dependent exposures
- Poisson regression
- Sensitivity analysis
- Bootstrapping
- Multiple imputation.

Course Activities

- **Homeworks** will be assigned every 1-2 weeks. You will have approximately 1 week to complete each assignment. You may talk with fellow students and the instructor about homework problems, but turn in your own work.
- **Manuscript Reviews** will take place 5 or 6 times during the semester. You will be asked to read a manuscript for discussion during class. A guided document will be provided one week prior to the discussion for you to complete. The complete document will be included as part of the homework grade.
- **Exams** will be given two times. For each exam, you will be allowed up to 1 page (front and back) of your own notes to use during the exam. For the final, you will be allowed to use your page of note from the midterm exam.
- A data ananalysis **Project**. This project will be assigned after the midterm. More detail will be provided at that time.

Grading

- Homework (10%)
- Exams (30%, 30%)
- Project (30%)
- Class participation

Homework

- Up to 1 per week (probably 4 or 5 total)
  - Fewer homeworks in the second half of the course so you have time to work on project
- Will focus on real data analysis and interpretation with some mathematical derivations of important quantities
- Questions will focus on specific analyses, with questions stated in as scientific terms as possible
- Work handed in should address the scientific questions
  - Format Table and Figures
- Keys will be provided shortly after the homework is turned in
  - No late homework accepted after the key is posted

- Answers in keys may go beyond what is expected of your homework and present concepts in more detail. You are responsible for any material in the keys for exams.
- You may discuss the homework with others in the class, but the work you turn in should be your own
- Use Brightspace to turn in homeworks and receive feedback and grade

In Class Exams

- Midterm and Final in class
  - Focus on understanding concepts, not memorizing formulas
  - I will provide an example midterm and final
  - For midterm, you will be allowed 1 page of your own notes
  - For final, you will be allowed 2 pages of your own notes
- All output will be provide for you to interpret

Project

- Will be given out after the Midterm and due at end of class
- Demonstrate ability to obtain results through software and interpret findings
- Detailed analysis of dataset
- Data either provided by the instructor or a dataset you want to analyze
  - If you provide data, speak with instructor beforehand to make sure it will meet some basic criteria
    - Must be new (can't have analyzed Survival aspsects before)
    - Needs to be fit close enough to project
    - Not too hard
  - (Most students choose the instructor-provided data)

Expectations and Policies

- Expecations you can have of me
  - You should expect me to provide feedback on homeworks and exams in a timely fashion
  - You should expect me to be responsive to your questions and concerns. If you have emailed me and not received a response with 24 hours, please feel free to email again. It is best to use my VUMC rather than Vanderbilt email address.

- Attendance. The course is offered in-person. If you expect to be absent, please let me know and make plans to catch up. Class will start on time.
- Collaboration
  - Discussing course content is highly encouraged
  - Collaborating on homeworks is highly encouraged, but you need to turn in your own assignment written in your own words
  - Exams are individual effort
- Academic honesty
  - Students are expected to follow the Vanderbilt Honor Code
  - "Vanderbilt University students pursue all academic endeavors with integrity. They conduct themselves honorably, professionally and respectfully in all realms of their studies in order to promote and secure an atmosphere of dignity and trust. The keystone of our honor system is self-regulation, which requires cooperation and support from each member of the University community."
- Use of generative AI algorithms such as ChatGPT
  - You are free to use generative AI in your work, however you **must**
    - Cite any text that AI generated (even if you edited it) with a bibliographic entry indicating the name and version of the AI model that you used, the date and time it was used, and the exact query or prompt to generate the results
    - Cite as above any code that was generated for you. I recommend that you do not use it to blindly write code for you. Doing so will probably be more work than simply writing the code yourself. You must verify any code that is generated for you is accurate and answers the question in the assignment instructions.
  - I recommend using Vanderbilt or VUMC resources
    - https://www.vanderbilt.edu/generative-ai/
    - https://www.vumc.org/dbmi/GenerativeAI
- Late work
  - While I expect that work will be turned in on time, things can happen to interrupt your schedule
  - My goal is to provide sufficient time for completing all assignments

  - If you anticipate a problem with a due date, it is best to let me know sooner (e.g. when a homework is assigned) rather than later
  - Late homeworks will be accepted on a case by case basis. No late homeworks will be accepted after the key is provided.

- Voicing concerns and evaluations
  - Please feel free to bring up any concerns you have about the course material, how it is being presented, or how you are being evaluated at any time during the semester. I want you to know that your voice will be heard.
  - Please complete the end of course evaluations. They are a valuable resource for me and help to guide changes from year to year. I read all comments and will take them seriously. Comments about what worked well as well as constructive criticism are appreciated

Accommodations

- I encourage students who encounter accessibility challenges to communicate with me regardless of whether they are registered with Equal Opportunity and Access
- Please communicate with me at your earliest convenience so we can discuss specific actions to address your needs. I will make every effort to accommodate reasonable requests.
- If you have established accommodations with Equal Opportunity and Access, I will receive an email notifying me of the request.
- If you need to contact Equal Opportunity and Access to establish service, the address is https://www.vanderbilt.edu/eeo/disability_services/contact_us.php