



JOHNS HOPKINS
BLOOMBERG
SCHOOL *of* PUBLIC HEALTH

Biostatistics 140.651 Frequently asked questions



Protecting Health, Saving Lives—*Millions at a Time*

Biostat 651-2 FAQ

- Most important thing if you're taking the class: all of the notes, announcements and everything will be on coursePlus
<http://courseplus.jhsph.edu/>
- If you're registered and can't log in to this course
 - Set up an account and then email me; I'll add you as a guest
 - If you're having trouble with this email me ASAP
 - bcaffo@jhsph.edu (OK)
 - bcaffo+651@gmail.com (better)

Should I take the whole series?

- It's designed as a year long series (140.651, 652, 653, 654)
- So, yes, you should take the whole series
- Taking just 651 and 652 leaves out the most important topics, most notably regression analyses and generalized linear models
- At the bare minimum, I consider 651-2 as one, semester length class; so you should at least take both of them

Can I switch between the 650 and 620 series at some point in the middle?

- NO!
 - The courses are ordered and organized differently
 - 622 requires topics from 621, not necessarily those topics from 651
 - 623 requires topics from 621 and 622, not necessarily those from 651 and 652
 - 624 requires topics from 621-3 and not those from 651-653
 - *We make no effort to coordinate with the 620 series*

I have recently took the 620 series, should I now take the 650 series?

It depends

- If you plan on getting an masters in biostat then you have to
- Otherwise probably not
 - The material is basically the same as the 620 series (in a different order) with greater assumed mathematical maturity
 - If you want to learn more math stat (the only component of the 650 series that really differs from the 620 series) there are courses specifically on math stat offered by the department
 - If you want to learn more statistics without more theory, then consider electives (longitudinal, multilevel, survival, psycho-social, spatial and GIS, advanced epi and so on) ; rehashing introductory stats isn't going to add much

What sort of math background should I have?

- You need a *working* knowledge of basic calculus and linear algebra
 - If you have had calculus and linear previously but don't remember it, or have never had it, I highly recommend that you don't take this class
 - Because of complaints that the class was drifting too much to be identical to the 620 series, we are making a concerted effort to make the class more mathematical this year
 - Calculus and linear algebra will be required for the exams
 - The *prerequisites* will not be taught in the class

Give me some examples of what I need to know?

- Can you differentiate and integrate a polynomial?
- Can you do the chain rule for simple problems?
- Can you do integration by parts?
- Do you know basic summation, integration and differentiation notation?
- Do you know what a derivative is? An integral?
- Can you differentiate and integrate basic exponentials?
- Do you know the basic rules for powers and logs?
- Can you find the maximum of a function via differentiation?
- Do you know basic matrix arithmetic?
- Do you know what a matrix inverse is? A determinant?
- Can you write linear equations as matrix equations?

You should be able to answer YES to all of these questions

I don't have the appropriate math background what are my options?

- Don't take the class and take the 620 series instead, or if you've already had the 620 series, take statistical electives
- Take some math refresher courses and then take this course next year
- Take the course along with a light other course load and try to refresh yourself the math as you go along (not recommended)
- Take the course, do poorly and wonder what everyone else is talking about (really not recommended)

I intend to take the course, despite not having the prerequisites; what are some resources for me?

- NOTE WE WILL NOT TEACH THE PREREQUISITES IN THE LECTURES, LABS OR OFFICE HOURS
- Any book on introductory calculus or linear algebra will do
- Go to the Book Thing in Waverly and grab some for free (also drop off some your old books that you don't want for someone else)
- The internet has many great resources for learning basic calculus and linear algebra
- Find introductory calculus books with lots of examples, not theoretical ones
- Dr. Rohde has talk calc refreshers course materials that he is going to post online (contact him for more information)

The labs?

- Tuesdays 1:30 – 2:20 HH 250 and Wednesday W4013
- The labs are office hours for help with the HW and represent your access to the Tas
- Pick one of the labs to go to, as they will be duplicative
- They are not required, but highly recommended
- The labs are Tuesday 1:30 – 2:20 and Wednesday 3:00 – 3:50

Office hours

- Email me at bcaffo+651@gmail.com for an appointment if you need to discuss grading or other course administration issues
- The labs are the main office hours for course content, help with HW and exam prep; I'll be doing some of the labs
- We will assess later on if we need to add extra office hours

What software will we use? Why R?

- R is free from cost
- R is free from any restrictions on its use
- R is multiplatform
- R is analysis software that is also a scripting language
- R is easy to extend; the main alternatives are not
- R is good for simulations; the main alternatives are not
- R has a great repository of statistical functions/libraries
- R is a nice language to program in and has won awards
- R is open source
- R has fairly good, free, development environments
- R does great graphics
- Did I mention that it's free?

What about the expensive book that just released another edition?

- It's mostly used as a reference; you can likely get by without it
- I will place some desk copies in the HH library
- Used older editions will work just fine
- Don't worry if it's going to take a week to ship if you buy it online
- It's a very nice and comprehensive reference book, so I recommend that you grab a copy

Will you be on my preliminary exam, GBO, K grant or other grant submission? Can you help me with the analysis for my research project? Can I ask you questions about my other stats classes?

- For the exams, grants and research projects, probably not I'm sorry to say (unless I already work with you or your advisor or directly in your area)
 - The introductory sequence instructors teach 100s of students and get asked to be on projects and committees way more often than they could possibly ever handle
 - Try giving some of the other instructors with smaller classes an opportunity to be involved
- For other classes, neither I nor the TAs can help, as we don't want to undermine the other instructors goals
 - Talk to the instructor in the other class about the problems that you are having there; just like I would want you to talk to me if you're having problems in this class

You post all of your old exams; will you post solutions to them?

- No, we will not post solutions to the old exams; we provide the old exams as a courtesy
- Most of the exam problems are in the HW, which has posted solutions
- Some of the exams actually do have posted solutions
- We will work out old exams with you in the lab sessions and during some of the lectures