Welcome to BSTA 550!

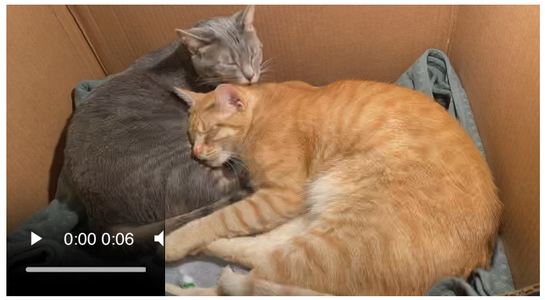
Nicky Wakim

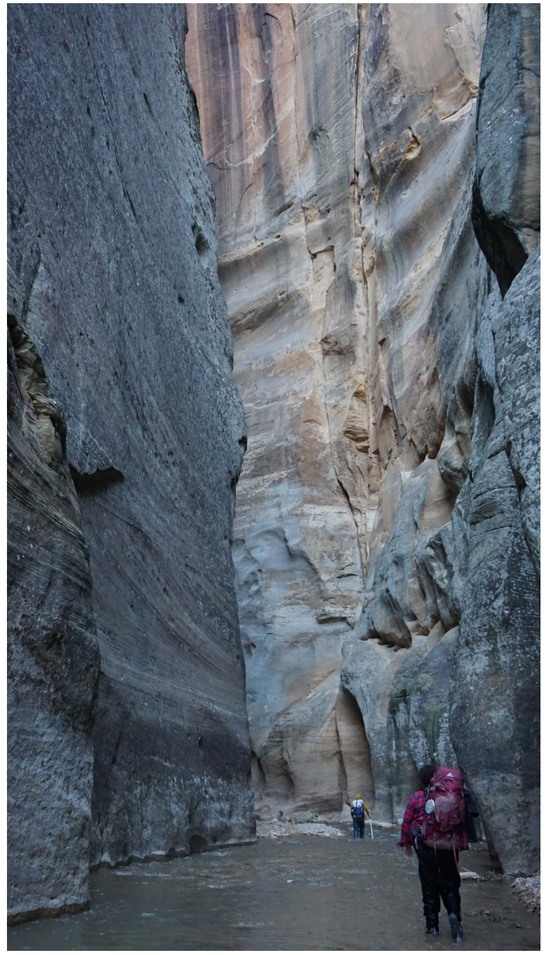
2024-09-30

Nicky Wakim (she/her)

- **Call me “Nicky,” “Dr. W,” “Professor Wakim,” or any combo!**
- Assistant Professor of Biostatistics

- Grew up in DC area (Virginia side!)
- Moved here from Michigan around 2 years ago
- Two sweet kitties
- Volleyball, pickleball, ceramics, strolling around my neighborhood
- But also sleeping, TV, and reading
- Proud plant mamma
- *A few other things about myself that I will share non-publicly*

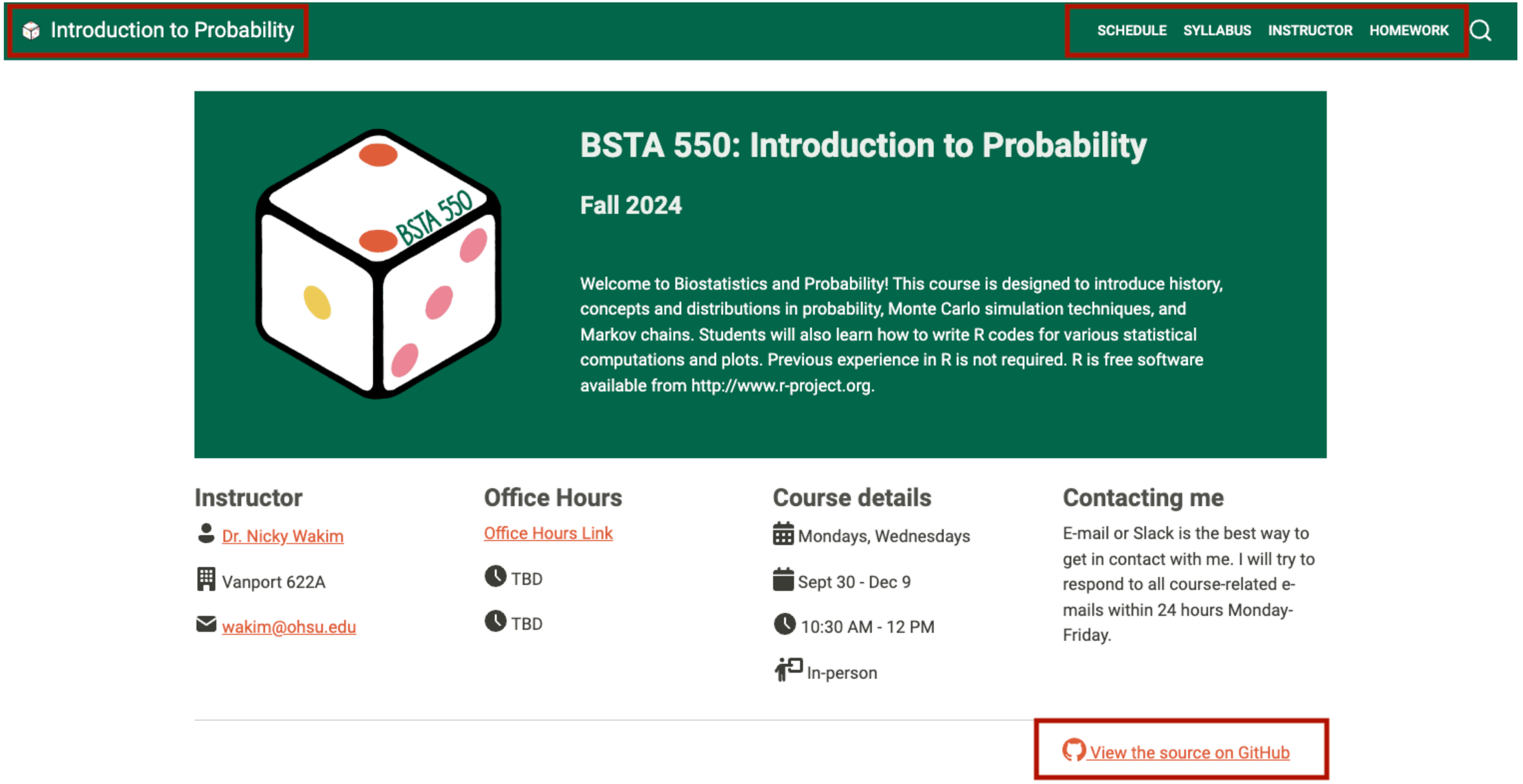




Some important tasks

- Join the Slack page!
- Star the class website: https://nwakim.github.io/BSTA_550_F24/
- Complete the WhenIsGood for office hours
- Complete Homework 0 by this Thursday at 11pm!
  - Includes some items above
  - Think about what day of the week you would like your homeworks due
- Highly suggest that you make an appointment with a learning specialist through Student Academic Success Center!

Let's visit the website: Homepage



Homepage

Let’s visit the website: Syllabus

- Course learning objectives
- Textbook in shared folder!
- Resources: PennState STAT 414 site!
- R: not a big worry in our class, you will get a lot of help in BSTA 511
- Assessments and grade breakdowns
- Homework: 3 parts + grading
- Feedback: in the form of exit tickets, group evals, midterm feedback, and final course
- How to succeed in this course: resources and assignments explained
- Late work policy / Attendance policy
- ChatGPT and other AI technology
- Course expectations: a few ways that I will show you respect and commitment to you as students
  - And a few ways I expect from you!
- Communicating with me: give me 24 hours to reply M-F
  - Online communication is not my strength!

Let’s visit the website: Schedule (1/2)

- Weeks, class info, exams, homeworks

Schedule

Week	Date	Chapter	Topic	Key Info	Slides QMD	Slides PDF	Slides Notes	Record-ing	Muddy Points
1	9/30		Welcome						
		1	Outcomes, Events, and Sample Space						
	10/2	2	Probability						
		22	Introduction to Counting						
	10/3		**HW 0 due 11pm**						
2	10/7	3	Independent Events						
		4	Conditional Probability						
	10/9	5	Bayes Theorem						
		7	Random Variables						
	10/10		**HW 1 due 11pm**						
3	10/14	8	pmfs and CDFs						

Let’s visit the website: Schedule (2/2)

Key Info	I will post announcements and other important class related info here. For example, if I change a due date or discuss a common mistake in homework, I will put it here.
Slides QMD	These are the basic slides that will open in your browser.
Slides PDF	These are the slides in pdf form for easy note taking. I’m not always the best at posting these before class, so make sure you know how to save your own copy of pdf slides!
Slides Notes	These are the annotated slides in pdf form. In class, I add my own notes to slides. After class, I will post them here.
Exit tix	These are links to that day’s exit ticket.
Recording	I record our classes. This will be a link to the OneDrive folder containing this recording.
Muddy Points	You will have a chance to ask questions about class in your exit tickets. If I notice a trend in confusion, I will add explanations to these “Muddy Points”

Let’s visit the website: Search

Let’s visit the website: Homework!

Decision on Homework due dates

- I have some set due dates in the schedule
- Please look at your other classes, your calendar, etc
- Consider what day of the week you would like to turn in your assignment, solutions, and video/meeting
- Question in HW 0 to cast your vote and share your opinion

Structure for this course

- Learning the basic tools to understand statistics
- It is going to feel useless at times, but I swear it is not!
- This class will help you build a toolbox that allows to analyze data while understanding the inner theory at play

What we will cover

Basics of probability

- Outcomes and events
- Sample space
- Probability axioms
- Probability properties
- Counting
- Independence
- Conditional probability
- Bayes' Theorem
- Random Variables

Probability for discrete random variables

- Functions: pmfs/CDFs
- Important distributions
- Joint distributions
- Expected values and variance

Probability for continuous random variables

- Calculus
- Functions: pdfs/CDFs
- Important distributions
- Joint distributions
- Expected values and variance

Advanced probability

- Central limit theorem
- Functions: moment generating functions

Welcome