

I love helping students learn a skill they once thought beyond them or for them to think about something as simple as website text in a new light. I have built my teaching around courses I call the 'steamed broccoli of learning': courses that are often challenging, required, and full of complex content, all coupled with frequently low levels of student interest in the course. To contend with this, I work to connect with students and have well-designed courses that lower the stakes while balancing rigor.

Teaching methods is a challenge I enjoy: my courses include students from different backgrounds, skillsets, and interests and I work to provide courses designed to be accessible to all students. I find that often what separates students at the beginning of a course is prior exposure or access, rather than ability. Scaffolded assignments, clear feedback and learning checks, and optional guided practice for students newer to the topic translate into a class where all students can learn and move toward concept mastery. In my required courses, such as statistics at Northwestern or now in introductory Python, students who initially thought this material 'wasn't for them' were later inspired to continue to an MS in stats or a certificate in Computational Social Science citing our course's impact on them. **I prioritize students, content, instruction, and assessments when designing and teaching my courses.**

**Being student-focused** means I evaluate my courses based on student feedback and learning outcomes. I emphasize the role of student 'engagement' – that students need to constructively evaluate, apply, and *engage* with the material, rather than 'attending,' which can imply a superficial interaction with content. I use regular low-stakes assignments<sup>1</sup> to ensure students understand the material and concepts and to monitor course progression. Small changes can make a large difference for student learning. Math camp is both challenging and intimidating for students as it is the first building block in their graduate careers. To address student concerns and their varying backgrounds, I have an online test bank for exam practice.

**Content-wise**, I create in-course themes that build, so students can learn how topics and ideas relate to one another and to the course overall. When teaching required classes, it can be especially helpful to cultivate student curiosity and buy-in. I connect the course to the discipline in multiple ways, e.g., explaining how the ideas in the class contribute or relate to discipline-level discussions and reading academic articles by faculty in the department. I also make connections between what we are learning and outside topics and encourage students to do so as well. For example, in my course on Data Visualization, students use real-world data to build a narrative. Their first assignment begins with critiquing both the strengths and weaknesses of a published visualization which grounds them in the course concepts. Throughout the course,

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<sup>1</sup> Low stakes assignments have a small number of points relative to the total grade, to take pressure off grades and put emphasis on learning.

they build skills around different types of data and different approaches (R, Tableau, web-based formats like websites and Shiny apps) that are then incorporated into one final project. For the final project, they have the choice of scaffolding and building across assignments or creating a portfolio with plots they improved using prior feedback.

**In my instruction**, I give a clear roadmap for the class session and balance lecturing with application of the content. In Agent-Based Modeling, we alternate seminar days and coding sessions to emphasize that both are required for balance and understanding. Students analyze the models in the articles and then work to critique them. During class, I encourage questions to bubble up by asking about the clearest and muddiest points and having students design sample quiz questions on the content. Often content can seem simple in class but challenging or even impossible at home. Thus, I ensure that new content is reinforced by in-class active learning techniques like think-pair-share<sup>2</sup> and technology like Ed Discussion to facilitate student reflection and topic exploration.

**Course assignments** align with class content and discussion. I start course design by asking what I want students to walk away having learned. From here, I create clear, focused learning objectives that drive content selection. These objectives then guide assignment design. For instance, in writing assignments, students conduct peer reviews using rubrics that match the grading criteria, helping them improve both their current work and long-term writing skills. I also create assignments with similar structures so that students can apply what they learned in previous assignments to later ones, and give students the option to choose their assignment format (e.g., an essay or a website). My goal is to offer students choice in assessment methods and provide feedback that supports continued improvement.

I am prepared to teach quantitative courses at the undergraduate and graduate level in statistics, machine learning, agent-based modeling, data visualization, programming (R and Python), and the politics of music. I aim for students to learn not only the material in the course, but also how, when, and why it matters. I hope my interactions help students discover and deepen their passions, skills, and interests. I also regularly co-author with my students: my published article in *Psychology of Aesthetics, Creativity, and the Arts* and a working paper under revision are both co-authored with former students. For my textbook on introductory methods, I drafted the material and coordinated with graduate students to write each chapter, providing feedback on drafts. This textbook is currently in use in multiple courses across the US and internationally. Across my teaching and mentoring, my goal is the same: to take the courses students are required to take and make them worth having taken.

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<sup>2</sup> Think-pair-share is where students first work and *think* on an answer to a question, then *pair* with a partner or small group to discuss it, then *share* what they discussed with the class as a whole.