

## Kelly P. Nelson | Teaching Statement

My teaching objective is to give students the ability and motivation to learn basic economics concepts while preparing them for more advanced approaches. For upper-level and graduate classes, my goal is to provide the tools necessary for original research.

While technical proficiency is key to passing the course, greater success requires a broader understanding of how to apply concepts and solution techniques. I design lessons that incorporate exercises with clearly measurable outcomes to test the ability of students in these dimensions. I assign an in-class math assessment on the first day to identify what skills students have and which will need additional enrichment before the basic economics material can be covered. I then move on to core economic concepts with examples of application.

I primarily use business scenarios as examples but also including other applications to illustrate the concepts. When discussing market design, I use the examples of the medical match process to demonstrate the Gale-Shapley algorithm and a scenario where NBA teams trade players using top-trading cycles. For game theory, I use fisheries as an example of “tragedy of the commons” equilibrium behavior and how participants can reach a cooperative solution in the Folk region.

In addition to a standard textbook, readings include materials designed to enhance appreciation for the economic concepts. This includes additional material on technical topics such as solving games. I add works by Nobel laureates Coase, Arrow, Roth, and Ostrom to the reading list. These complement the textbook and technical readings by giving students examples of significant ways economics principles have been used to solve problems.

In addition to exams and take-home problem sets, I include both graded and ungraded in-class activities. In the past, problem sets were all take-home and individual assignments, but students were having difficulty with some concepts and procedures. While simpler assignments are still individual homework, more complex tasks involve in-class activities. The in-class format allows me to quickly give guidance and assess the students’ grasp of the material while also providing students the ability to give one another feedback. This has resulted in better performance on exam questions related to these subjects. In-class group assignments are also an opportunity to illustrate the concept of comparative advantage and specialization. In assignments after I have introduced comparative advantage, I tell the groups to divide their tasks to take advantage of their different skills, such as a talented public speaker presenting the results.

Tests are structured to go beyond rote memorization of vocabulary and procedures by presenting students with problems in which they need to deduce the appropriate solution methods prior to applying them. While accuracy of solutions is important, the process carries significantly more grading weight to reflect the greater importance of knowing the appropriate solution technique. I build in small “buffers” of potential points so that students can make minor mistakes without significant grade impact. I can still give the grade-relevant feedback for students to learn from mistakes, but research has shown that early success in a subject works to motivate student effort in that course.

Students are primarily from the business and engineering departments and typically have a strong interest in industry. I can incorporate my industrial organization research interests, such as market structure and product selection, as examples for applications. Developing lesson plans and discussing these topics with students provides me with an opportunity to communicate about my own research.

One way I gauge my own success is through evidence of student enthusiasm for economics. I assign an optional homework where students can analyze stories from news sources using the concepts they learned in class. While the assignment is relevant to grades, students have gone beyond the minimal effort, finding diverse subjects that interest them and writing thoughtful analyses. Several students in my class have switched their majors to economics after taking my course, demonstrating success in motivating students to study the subject deeply. One student, a computer science major, coded a program to determine the Nash equilibrium in simple games. After teaching an MBA course, a student approached me to help him incorporate economics principles and analytical techniques into his firm’s marketing strategy. Both directors of graduate programs in my department have asked me to assist them with training new graduate teaching assistants.

Several years of teaching experience have taught me the importance of adapting my lessons so that students can better meet learning objectives. In the future, I plan to teach and advise graduate and upper-level undergraduate coursework. Lessons learned from teaching undergraduate introductory classes will inform my approach to these tasks.