Andreas Duus Pape: Teaching Statement

In this statement, I discuss my teaching here at Binghamton University. First, I discuss my three mainstay classes: one undergraduate and two graduate classes; one in the core of the PhD and Masters sequence and the other a graduate field course. Second, I discuss my PhD and honors thesis supervision.

1 Classes

1.1 Microeconomic Theory, Econ 360.

Also known as intermediate microeconomic theory, this class teaches the fundamentals of microeconomic modeling such as supply and demand, the theory of profit-maximizing firms, and the theory of utility-maximizing individuals, taught with the mathematical rigor of calculus. I teach this class every semester. It is a popular class.

The style of the class is lecture-based. I present work on the board (now, on the overhead projector) and I encourage, and get, frequent questions. One common alternative approach in a lecture class is pre-made slides (powerpoint or the like); I prefer my method for a very important reason: the technology of the board or overhead projector allows me to take student questions seriously by integrating them immediately into the work at hand. To do so, with a class that involves mathematics and precision, one must be willing to make mistakes and encourage students to question ones work. I believe adapting and solving problems on the fly teaches how to think about new problems, instead of rote memorization of a recipe for solving old problems. I think it also keeps the students engaged in our conversation about economic ideas.

I focus on problem-solving and problem-interpretation. I want my students to be able to leave my class with the ability to bring economic models and ideas to real situations. Economics is a valuable way of thinking about real problems; I attempt to teach that. Again, part of attempting to teach this is incorporating students' contributions actively in the classroom.

1.2 Microeconomic Theory II, Econ 612.

Also known as graduate or PhD-level microeconomic theory. It covers some of the same topics as in intermediate microeconomics, but in a more nuanced way and with more complicated mathematics. This class has two main topics: game theory and Walrasian (or market) equilibrium. Game theory is the modern approach to economic modeling, in which individuals are described mathematically and allowed to interact. (Game theory is related to agent-based modeling; the primary difference is that game theory is analytical while agent-based modeling is computational.) Walrasian or market equilibrium is an older approach in economics that provides the foundations to modern thinking about prices. Although that order is ahistorical–teaching game theory, which came later, before Walrasian equilibrium, which came earlier–I think that approach is the appropriate one, because the modern expression of game theory gives one useful tools for understanding the market equilibrium.

As a professor for the graduate students early in their time here (second semester), I meet them early in their career at Binghamton. I think they would agree that many of them view me as someone to request guidance from, in terms of figuring out their relationship with the field of Economics, whether or not I end up advising them formally.

1.3 Agent-based Policy Modeling, Econ 696H.

This class teaches applied agent-based modeling in an economic policy setting. The semester has three parts of roughly equal length.

The first part is about modeling in general and agent-based modeling in particular: we read Scott Page and John Miller's "Complex Adaptive Systems: An Introduction to Computational Models of Social Life" and I teach agent-based modeling with the programming platform NetLogo. We also discuss of rhetoric and model-making in economics, which are topics that typically one is only implicitly expected to understand.

Because these topics are, in my opinion, essential to constructing successful research projects and are central to the topic of modeling, I discuss them explicitly as a part of the class.

The second part develops a literature or context. Previously, the policy context was tax ceilings in local public finance, so we read the major papers in that literature. This year it is case-based learning in markets. The class sessions in which we discuss readings are organized in a humanities-seminar-style; i.e. close reading of papers and guided discussion. I have the students lead discussion on a rotating basis.

The final part is the practicum component, in which the class as a team develops and programs an agent-based model. Previously, this project was the model which appears in the paper "An Agent-based Model of Tax Ceilings: Leviathan Extraction and Tax Payment Uncertainty" with Nathan Anderson, Todd Guilfoos, and Jeff Schmidt. Jeff was a student in the class and chose to stay with the project after the completion of the semester. At the time, Jeff was a Master's student in Systems Science and is now pursuing his PhD under Hiroki Sayama. The other students in that class are acknowledged in the paper. At the beginning of the semester, Todd and I explained that student(s) with the interest and ability could continue with the project as a co-author; Jeff was the only one who continued.

This year we will develop a case-based reasoning in markets model. I hope this will also yield a paper; perhaps this time more than one student from the class will continue with the project. I intend to repeat this scheme to unite research and teaching as many times as I can.

This is a core course in the new Advanced Graduate Certificate in Complex Systems Science and Engineering. Please see service statement for more details.

2 PhD and Honors Thesis Supervision

- Dr. Todd Guilfoos; PhD in Economics. I was his co-advisor with Neha Khanna and a co-author. We still work together. He has a tenure-track appointment at U. Rhode Island. Todd is my best student, who I continue to be proud of. I am happy that we continue to write papers together.
- Dr. Misuk Seo; PhD in Economics. I am her advisor and co-author.
- Dr. Jessica Harriger; PhD in Economics. I am a committee member and co-author.
- Dr. Lucie Spanihelova; PhD in Political Science. Outside reader.
- Josh Warren; undergraduate who finished with High Honors. I was the advisor for his honors project.
- Areal Tal; Masters student in Economics, masters student in Systems Science. Advisor.
- Dr. Tim Haase; PhD in Economics. Committee member, consulted on his research.
- Dr. Mark Wu; PhD in Finance (School of Management). Outside reader.