Teaching Statement

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In my classroom, students are expected to justify what they claim. Whether we are discussing limits, equilibria, or probabilistic models, the same questions guide the discussion: What assumptions are being made? Why does this follow? What changes if the structure shifts? Teaching begins with making reasoning visible.

Each course begins with a concrete problem rather than a formal definition: a constrained optimization task, a strategic interaction under uncertainty, or a system whose behavior is not immediately transparent. Once informal reasoning reaches its limits, formal tools enter as necessity rather than ornament. Abstraction resolves confusion rather than creating it.

At SKEMA Business School, I teach courses in finance and strategic decision-making grounded in optimization, equilibrium analysis, and probabilistic reasoning. Students work with live market data and analyze systems operating under real constraints. Correct computation alone is insufficient; justification matters. A result without a defensible argument is incomplete. Models are examined carefully to understand what drives them, where they rely on assumptions, and where they break down, rather than being applied mechanically.

An early experience teaching calculus shaped this approach. A student once asked whether limits would matter in her engineering work. That question revealed that I had introduced the concept formally without first demonstrating its necessity. When limits were reframed through optimization and design constraints before formal definitions were presented, engagement improved significantly. Since then, abstraction enters the classroom only when students see why it is needed.

I continue to mentor undergraduate and graduate research students in collaboration with colleagues at North Carolina State University and the University of North Carolina at Chapel Hill. Current projects include work in game theory, quantum methods applied to financial modeling, and the role of quantum random number generation in electronic systems. In these collaborations, I work closely with students to refine definitions, test structural assumptions, and develop arguments that move beyond technically competent problem-solving toward independent inquiry.

Students arrive with varied preparation and confidence. I make reasoning explicit, slow arguments when necessary, and encourage questions that expose uncertainty rather than conceal it. Feedback leads to adjustments in pacing and clarification of intermediate steps that might otherwise remain implicit. Teaching, like research, improves through iteration.

My aim is that students leave better equipped to confront complex systems with analytical discipline, able to articulate assumptions, follow arguments to their logical conclusions, and distinguish structure from surface detail. If they develop the habit of asking “why does this follow?” before asking “what formula applies?”, the course has achieved its purpose.