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Course: Management Science Models for Decision Making

Tallys Yunes begins each class with a discussion of a news article on a sector of the economy or a major decision faced by a specific company. "We look at the business problem, the techniques used to solve it and the outcome." In some cases, companies may have saved millions of dollars, reduced pollution or increased customer satisfaction. Or the technique may have led to disaster.

Next, Yunes presents a business problem and guides students through the creation of a math model to solve it. Yunes then challenges the students: What do these numbers mean? If you were the decision-maker, how would you use these numbers? Do the numbers agree with your intuition about the problem? What if these additional complicating factors were introduced into the story? Could we still handle it? How would we modify the current math model?

"I encourage students to ask their own what-if kinds of questions and let them think about the answers for a while before I provide them the answer myself." Often, he offers examples of how he solved a specific problem as a consultant for companies such as Caterpillar and John Deere and for Major League Baseball.

A company, for example, might want to market a new product but has a limited budget. Students analyze the reach and cost of each option. Perhaps a company wants to move goods to a certain destination. Students would need to apply math models, figure out how to choose routes and move goods but spend the least amount of money possible.

Yunes says a big part of decision making involves collaboration, so his students work in groups, like management teams in business. He says MBA students are eager to learn and don't mind doing hard work (teaching evaluations from his class often say it's hard work), as long as they can clearly see the potential and the applicability of what they are being taught.