Management Science is where engineering meets business. Technical knowledge alone is just part of the solution in today’s complex business world. The same systems oriented, mathematical – model-based approach to design, which has been the cornerstone of engineering for decades, has powerful applications within the organizations and their operations.

**WHAT IS ENGINEERING MANAGEMENT, INFORMATION & SYSTEMS?**

Management science focuses on computer models for decision-making and the application of engineering principles and techniques to enhance organizational performance. Management scientists understand the complex systems that drive today’s information-intensive organizations, and they contribute to business operations in the areas of logistics, supply chain management, flow analysis, finance, and more.

Using an airline as an example, a management scientist would be concerned with building computer models (as opposed to writing computer programs) to decide the best:

- flight schedule
- routing of planes
- assignment of pilots and crews to specific flights
- flight-gate assignments
- number of planes to own and operate
- cities to fly to
- cities to use as major hubs
- airport-terminal layout
- overbooking policy

The optimal decisions for these and other issues can be uncovered through analysis using computer-based mathematical models. Hence, the management scientist uses the data collected and managed by the MIS department in building his or her models.

**REASONS TO CONSIDER MANAGEMENT SCIENCE**

**You have the opportunity to solve real-world problems** These problems matter to organizations and have an impact. In areas such as healthcare, engineering, public policy, national defense, resource management, and disaster relief. You can truly change peoples’ lives for the better.

**You have mobility** You can apply your core Management Science skills to almost any industry — pharmaceuticals, law enforcement, even entertainment. So you’re far more recession-proof than if you focused on one cyclical industry. And with Management Science training, you can move into management consulting, operations, marketing, finance, and other fields.

**You link technology and management** As a Management Scientist you often act as interpreter between technical staff — operators, operations management, computer programmers, software engineers, and electrical engineers — and management. You help translate real-world needs into software or models, Then translate the results back into better real-world outcomes and results.

**You can make a great living** The national average starting salary for a Management Science professional is $60,000 to $70,000, and it’s easy to move up to $100,000.

**RESEARCH OPPORTUNITIES**

The EMIS faculty’s research thrusts include: decision systems engineering, telecommunications software, and information engineering. The unifying theme of these efforts: the application of engineering principles and techniques to enhance organizational performance.

**American Airlines Center**

SMU Lyle engineering management science students analyzed and designed the means to expedite facility changeovers at Dallas’ American Airlines Center by collecting data and creating a model/ process map for more efficient processes. Students were challenged with decreasing the time it takes to convert the arena from a site for basketball to one for ice hockey. By reducing the time, the center is able to host more events, which, in turn, can increase revenue by as much as $100,000.
**Faculty Research Spotlight**

Dr. Eli V. Olinick | Associate Professor

**Research Concentrations**
Applied mathematical optimization; Telecommunications network design and optimization; Design and analysis of algorithms

**Research Accomplishments and Activities**
Author of papers published in INFORMS Journal on Computing; Co-author of technical papers on topics such as "Wavelength Routing and Assignment" and "The Sonet Edge Partition Problem"

**LYLE FACULTY MEMBER PART OF TEAM THAT CRACKS CODE FOR MLB PLAYOFF RACE**

Lyle Prof. Eli Olinick and colleagues from Berkeley University developed an advanced software package named "RIOT" that uses linear programming to accurately predict pennant races in Major League Baseball. The software’s prediction that the Rangers would go to the playoffs proved to be accurate. It is not every day that any engineering professor appears in ESPN!

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**Alumni Spotlight**

Allison Griffin | BS Management Science ’09, MS Operations Research ’10

Allison Griffin was an active member of SMU and the Lyle School of Engineering.

- She was a member of Gamma Phi Beta, Ambassadors for Prospective Engineering Students (APES), Center for Engineering Leadership and Engineers without Borders.
- She spent a summer studying abroad in Spain
- Her senior design project’s recommendations were implemented at the North Texas Food Bank. These recommendations led to an increase in distribution of 1 million pounds of food (from 3.6 to 4.6 million lbs). The Director of Operations presented these recommendations at the national conference for all food banks.

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**Faculty in the News**

Dr. Tom Siems | Senior Lecturer

The Federal Reserve Bank of Dallas named Thomas F. Siems as senior economist and director of economic outreach in its Financial Institution Relationship Management Department. In his new role, he will oversee economic outreach efforts to financial institutions in the Eleventh District. Siems has published more than 50 articles and is the only two-time winner of the National Association for Business Economics’ Edmund A. Mennis Contributed Paper Award. Additionally, Siems authored and published five children’s picture books, including The Dangerous Pet, which focuses on the way the next generation thinks about debt.

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**Student Spotlight**

Meera Nair | Management Science, Math Minor ’14

Meera is an Engineering Fellows Scholar and Dean’s Scholar among other awards. She was chosen to join the prestigious Emerging Leaders program in her first semester, leading to her current position as Secretary of LEAD. She is also an Ambassador for Prospective Engineering Students, a member of Engineers without Borders and a member of Gamma Phi Beta Sorority. Meera won a Maguire Foundation Public Service internship in summer 2011 to spend two months working at a special education school in India. Her focus was to design a curriculum to help children with Autism and Downs Syndrome get closer to a mainstream academic program. Engineers are problem solvers. This internship has demonstrated the magnitude of the education problem in India, but also the impact one person can make in solving this problem. Meera currently works at the Hart Center for Engineering Leadership and greatly enjoys the opportunity to meet various companies that make recruiting trips to the SMU campus.