



SMU | LYLE  
SCHOOL OF ENGINEERING

*A cell phone manufacturer must evaluate its production systems with an eye toward improving throughput and cycle time while minimizing its environmental footprint.*

*An investment firm must correlate hundreds of market factors in order to rebalance its portfolio and increase returns.*

*An airline must determine how to redeploy its fleet to add new routes with minimum financial risk.*

Businesses can't afford to make mistakes. That's why they're turning to specialists in operations research for solutions to complex, critical problems like these. OR is a scientific approach to analyzing problems and making decisions through the use of probability and statistics, optimization, and simulation to predict outcomes of different scenarios and zero in on the best solution. It's a challenging field with opportunities across the spectrum of business and government activity. OR is the perfect option for those who thrive on intellectual challenge and the first factor to consider is the master's program in operations research at SMU-Lyle.

**FIND US HERE**

P.O. Box 750335 Dallas, Texas 75275

EngineeringLeaders@SMU.edu | lyle.smu.edu

214-768-2002

# DECISION ANALYTICS

MASTER OF SCIENCE | OPERATIONS RESEARCH



# PREDICT SOLUTIONS

This master's curriculum reflects the close relationship between operations research and other 'decision sciences.' In this 30-hour track, students learn to analyze complex situations and apply mathematical modeling to assess and improve an organization's performance in any metric, optimize its systems and procedures, and more advantageously utilize its assets, people, and technology. Using problem-solving techniques, students dissect problems, weigh options, predict outcomes, and prescribe action, enabling their firms to make more effective use of resources, avoid systemic problems that impede growth, and derive advantage from increasing volumes of CRM data. In short, to make better decisions.

# PRESCRIBE ACTIONS

For engineers with a passion for problem solving, who thrive on intellectual challenge, and who seek a flexible yet highly rewarding career path, a master's program in operations research from SMU is a smart decision. Its world-class faculty is made up of active researchers who are contributing to the expansion of OR theory and application. Through interaction with professors and the business community in Dallas, students graduate from the program well-prepared to take important supporting roles in defense and government, manufacturing, telecommunications, financial institutions, and service industries. As enterprises of all types grow ever more cost-driven and data-dependent, the demand for operations research scientists will only increase.

*SMU's OR offering is a perfect combination of real-world business and engineering studies in strategic and analytical methodologies. Lectures, projects, and even the professors' experiences outside of class apply to the type of work I do every day. Since the structure of the program is designed for those who want to interact with other professionals across multiple industries, I never felt like I was going to class.*

**Desiree Brown**

**Business Analysis Manager | Government Enterprise – Secondary Mortgage Market**

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## MASTER OF SCIENCE | OPERATIONS RESEARCH

## ACADEMIC PROGRAM

Thirty (30) credit hours (CH) of graduate courses from the following.

### Probability and Statistics—One (1) of the following.

Probability and Statistics for Scientists and Engineers  
Statistical Design and Analysis of Experiments

### Core Courses—Three (3) courses.

Linear Programming  
Operations Research Models  
Production Systems Engineering

### Depth Courses—Three (3) of the following.

Advanced Data Mining  
Advanced Logistics Networks  
Data Mining  
Computer Simulation Techniques  
Engineering Economics and Decision Analysis  
Integer Programming  
Mathematics of Optimization  
Network Flows  
Nonlinear Programming  
Optimization Models for Decision Support  
Queuing Theory  
Stochastic Models  
Supply Chain Operation and Control

### Concentration Area—Three (3) courses.

The degree requires nine (9) credit hours (CH) from a second area. All courses must be from the same area and are subject to adviser approval. Acceptable areas include systems engineering, engineering management, information engineering, computer science, mathematics, statistics, business, economics, and telecommunications.