MASTER OF SCIENCE | COMPUTER ENGINEERING

SMU | LYLE
SCHOOL OF ENGINEERING

To make air travel available to more communities, an aircraft manufacturer develops planes with the intelligence to identify and load passengers, interact with air traffic control, and fly its route with complete autonomy.

For special missions, the military trains warfighters in warehouse-size, total-immersion simulators filled with fully interactive, three-dimensional environments and opponents generated by clusters of embedded computers.

To enhance its marketing efficiency, a retailer uses point-of-sale RFID sensors in products and network technology to automatically route offers of interest to in-store display screens, wherever the desired customer happens to be standing.

Computer technology is inextricably embedded in modern life. From supercomputers predicting the path of a storm system to servers running an online superstore, to a chip-controlled appliance brewing a fresh cup of coffee—these evolving devices and systems touch every aspect of how we live and work. As our individual and corporate dependence on them grows, so does the need for innovators who can usher in the next wave of technology. This is the challenge awaiting those who earn a master's in computer engineering from SMU-Lyle.

FIND US **HERE**

P.O. Box 750335 Dallas, Texas 75275
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214-768-2002

EMBED EVOLUTION

ENGINEER ARCHITECTURE

As new challenges and opportunities arise in the modern world, so grows the demand—in virtually every industry—for leaders with advanced computer engineering knowledge needed to design and develop hardware, software, and embedded systems of unprecedented capabilities. In Lyle's 30-hour master's program, students explore such core topics as computer networks and distributed systems, operating systems, computer architecture, and digital systems. They then choose an area of specialization—design automation, networking, or architecture—and round out their program drawing from a rich roster of electives that includes quantum computing, formal verification and validation, hardware and economic security, integrated circuit test, embedded systems design, and VLSI algorithms. They emerge uniquely prepared for careers of significance or positioned for advanced studies leading to a Ph.D. in computer engineering.

CREATIVE PATH

The master's in computer engineering curriculum at SMU-Lyle is presented by an exceptionally qualified faculty whose own research projects—in cybersecurity, electronic design automation, VLSI test, computer arithmetic algorithms, and disaster and fault tolerance, to name only a few—touch every aspect of computer engineering's future. Courses are offered in small classes to ensure optimal opportunities for strong mentoring, teamwork, and creativity. Our goal is to help students achieve their highest potential for advancement.

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ACADEMIC **PROGRAM**

Requirements include the completion of ten graduate level courses (30 CH), or the completion of eight courses (24 CH) and a thesis.

Core Courses (12 CH).

Computer Architecture
Computer Networks and Distributed Systems
Computer Science Seminar
Digital Systems Design
Operating Systems and Systems Software

Concentration in one of the following areas (6 CH).

Architecture

Advanced Computer Architecture
Fault-Tolerant Computing
Microprocessor Architecture and Interfacing
Parallel and Distributed Processing

Design Automation

Digital Systems Design
Fault-Tolerant Computing
Switching Theory and Applications in VLSI CAD
VLSI Algorithms

Networking

Advanced Network and System Security
Computer Networks
Data and Network Security
Internetworking Protocols and Programming

Example Electives (12 CH or 6 CH and thesis).

Advanced Computer Architecture
Advanced Network Security
Algorithms II
CAD Methods in VLSI
Combinatorial Algorithms
Computer Arithmetic
Computer Networks
Digital Logic Design II
Fault Tolerance
Graph Theory: Algorithms and Applications
Information Structures
Microprocessor Architecture and Interfacing
Parallel and Distributed Processing
Thesis
VLSI Algorithms