



# PROJECT MANAGEMENT

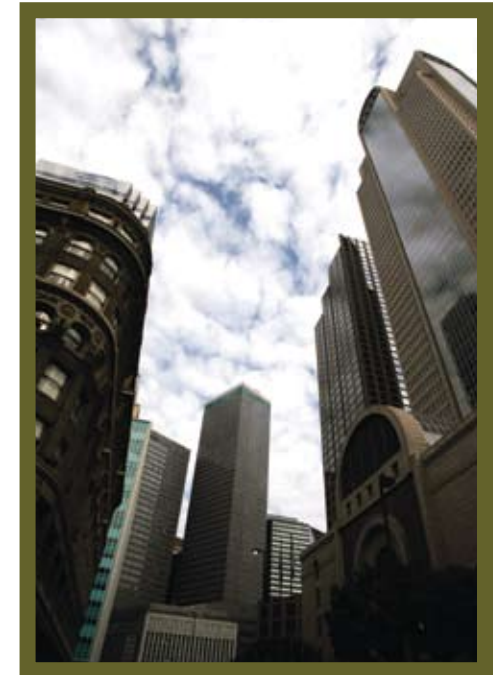
## NO PROBLEM'S TOO BIG

Worldwide, the push is on to **rebuild** and **improve** physical infrastructure. New roads and bridges, power plants, water and waste treatment systems, renovations of schools and health facilities, and other programs vital to a stable, **sustainable future** are getting underway.

Because of their size, these projects must meet not only their engineering objectives, but also a variety of often conflicting social, fiscal and environmental mandates – a challenge that must be met by project leaders with the skills to manage risk, anticipate disaster, and facilitate growth.

Already, the demand for such highly skilled professionals far exceeds the supply. The estimated shortfall in qualified personnel reaches into the millions in parts of the developing world alone. Preparing the next generation of qualified project managers, who are able to execute on projects that fill a critical need or enhance the quality of life in diverse environments, requires global content in educational programs.

A critical situation for industry, government and military sponsors, this shortage also creates an unprecedented window of opportunity for engineering managers – provided they have access to the requisite knowledge. To meet this urgent need, SMU's Bobby B. Lyle School of Engineering has developed innovative, graduate-level certificates that provide unrivalled offerings in **project planning**, design, **construction**, maintenance and **management**.





## KEYED TO REAL-WORLD ISSUES AND BEST PRACTICES

The objective of the Project Management program is to present concepts that students can immediately put into practice. For that reason, courses are keyed to the main phases of a construction project: initiation, planning, design, execution and closeout.

The program consists of four tracks, each comprised of two core courses and a minimum of one related elective. Students are encouraged to select one or more areas of specialization.

**Adaptable Project Leadership (APL)**, the lead-off series, is designed for the senior administrator and provides the high-level overview and breadth of knowledge necessary for organizational leadership. Courses are derived from the essential business functions, productive project processes, sustainable initiatives, and engineering systems for organizations. (2 Core; 1 Elective)

Core: *Introduction to Construction Management*  
Core: *Enterprise Fundamentals*  
Elective: *Introduction to Facilities Engineering Systems*  
Elective: *Systems Engineering Leadership*

**Enterprise Project Management (EPM)** explores the operations of organizations, including functional and project management, finance and contract administration, accounting, cost monitoring, and cost control. (2 Core; 1 Elective)

Core: *Enterprise Fundamentals*  
Core: *Program and Project Management*  
Elective: *Facilities Contract Management*  
Elective: *Facility Financial and Asset Management*

**Construction and Asset Management (CAM)** draws from economics as well as engineering and centers on the productive processes of organizations. Topics include planning, delivery methods, general conditions, effective construction management techniques, risk and disaster management, and life cycle management. (2 Core; 1 Elective)

Core: *Introduction to Construction Management*  
Core: *Project Management*  
Elective: *Disaster Management*  
Elective: *Facilities Planning*

**Infrastructure Systems Management (ISM)** involves the systems needed to sustain organizations. These include engineering systems – road and bridge; mechanical, electrical and plumbing; and information technology – as well as environmental regulations. (2 Core; 1 Elective)

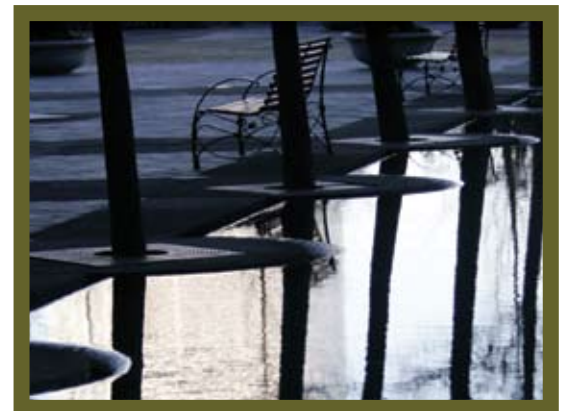
Core: *Introduction to Facilities Engineering Systems*  
Core: *Introduction to Environmental Management Systems*  
Elective: *Management of Information Technologies*  
Elective: *Electrical, Mechanical, and Piping Systems*

## **ADMISSION AND COMPLETION REQUIREMENTS**

To be eligible for enrollment, prospective students must have an undergraduate degree in engineering or science, or five years of directly relevant professional experience (plus permission of the program director).

The professional certificate will be awarded upon successful completion of the courses listed with a grade of B or better in each course. The courses must be completed within three years of admission into the program.

Credit hours earned in this course may count toward graduate degree requirements.



## **DELIVERED IN AN EXECUTIVE-FRIENDLY FORMAT**

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Like other certificate programs at Lyle, Project Management is characterized by small class sizes, highly knowledgeable instructors, and hands-on projects based on the types of challenges students are likely to face.

The curriculum is covered in a **distinctive, fast-paced executive format** that is designed to meet the needs of working professionals. Classes meet two days per month in a seminar-style learning environment at facilities selected by SMU Lyle School of Engineering staff or faculty. Sites conform to a strict set of criteria, creating an environment that is learning-friendly to the candidate, adheres to the standards set by SMU for classroom learning, and meets the guidelines set by our accrediting agencies.

To accommodate the unique requirements of others seeking graduate education, Lyle's **on-campus** and **distance-learning** certificate courses also offer convenience and flexibility for today's technology-driven world ... creating project management leaders undaunted by tomorrow's challenges.

## **ENROLLMENT IS LIMITED. IF YOU'RE ONE OF THE FEW, CONTACT US NOW.**

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For information on admission requirements, courses, costs, and detailed schedules, contact [EngineeringLeaders@smu.edu](mailto:EngineeringLeaders@smu.edu) or call 214-768-2002.

## **AT LYLE ... BIG PROBLEMS ARE PROJECT MANAGEABLE**

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Centered in Dallas, one of the nation's most vibrant international cities, SMU's Bobby B. Lyle School of Engineering emphasizes top-notch technical expertise combined with a broad range of knowledge and skills in business, entrepreneurship and the humanities. Our goal is to produce not only highly qualified engineering professionals, but also highly accomplished leaders who are able to think critically, plan strategically, communicate effectively, and manage adeptly in a fast-changing global environment.

***At Lyle, no problem's too big.***

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THEY ARE  
**PEOPLE**  
WHO DEAL IN  
**BIG IDEAS**  
SMU LYLE SCHOOL OF ENGINEERING

## **PROJECT MANAGEMENT COURSES**

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### **Adaptable Project Leadership (APL)**

**Introduction to Construction Management.** (Core) Examine best practices for construction techniques and current technological tools in a course that provides an in-depth overview of cost estimating, bidding, contracts and contract bonds, risk and umbrella excess insurance, labor law, and labor relations. Students will also master critical components – such as building codes and regulations – and managing projects from inception to completion, with an emphasis on time and cost controls and industry-standard forms. ENCE 7365

**Enterprise Fundamentals.** (Core) An overview of business fundamentals, spanning the range of all functional areas: management, marketing, operations, accounting, information systems, finance, and legal studies. EMIS 7351

**Introduction to Facilities Engineering Systems.** (Elective) Explore the inter-relationships of fire protection, HVAC, electrical, plumbing, lighting, telecommunications, and energy management systems for buildings. A life cycle approach examines each of these systems with respect to cost, durability, maintainability, operability, and safety. Discussions will incorporate facility operations, facility maintenance and testing, and assessments. ENCE 7366

**Systems Engineering Leadership.** (Elective) Augments the management principles embedded in the systems engineering process with process design and leadership standards and best practices. Learn how leadership relates to underlying behavioral science components, theories, and models and how the elements of systems engineering, project management, process design, and leadership integrate into an effective leadership system. Prerequisites may apply. EMIS 7320

## GLOBAL OBSTACLES...

### Enterprise Project Management (EPM)

**Enterprise Fundamentals.** (Core) An overview of business fundamentals, spanning the range of all functional areas: management, marketing, operations, accounting, information systems, finance, and legal studies. EMIS 7351

**Program and Project Management.** (Core) Discover the principles and practical strategies essential for successfully managing projects and project-related programs to achieve broad-based goals. Coursework focuses on planning, organizing, scheduling, resource allocation, strategies, risk management, quality, communications, tools, and leadership for projects and programs. EMIS 7365

**Facilities Contract Management.** (Elective) Provides a critical foundation and understanding of the terminology, arts, and skills of contracts and contract negotiation, including contract review and preparation, as well as insurance and risk management. Attention is also given to lease analysis, licensing and permits, when and how bidding contracts are warranted, how to prepare specifications and their role in contract creation, and supplier and vendor management in the post-contractual process. ENCE 7368

**Facility Financial and Asset Management.** (Elective) A concentrated study of financial analysis and reporting, concepts and methods of accounting, budgeting, and project evaluation. Learn how facility managers directly impact corporate earnings and valuations. The course also addresses facility management over its entire life cycle, extending from planning and budgeting to managing assets and construction projects. ENCE 7371



## HIGH DEMAND...

“It’s essential that the women and men who plan, design, construct, maintain, and manage our country’s infrastructure – its buildings, bridges, power plants, water and wastewater systems – are equipped with the skills to manage risk, anticipate disaster, and facilitate growth. No other discipline is more critical to our stability and safety.”

— Robert Casagrande, **Director, SMU Facilities Services** and Project Management Program Founder for Lyle

### Construction and Asset Management (CAM)

**Introduction to Construction Management.** (Core) Examine best practices for construction techniques and current technological tools in a course that provides an in-depth overview of cost estimating, bidding, contracts and contract bonds, risk and umbrella excess insurance, labor law, and labor relations. Students will also master critical components – such as building codes and regulations – and managing projects from inception to completion, with an emphasis on time and cost controls and industry-standard forms. ENCE 7365

**Project Management.** (Core) Explore the role of a project officer; systems and planning techniques for scheduling, monitoring, reporting, and completing environmental projects; total quality management; project team management; developing winning proposals; contract management and logistics; case study application of project management to all environmental media and programs; community relations, risk communication, crisis management, consensus building, media relations, and public policy. ENCE 7323

**Disaster Management.** (Elective) This course introduces the student to basic concepts in disaster management. Drawing on a range of sources – from the textbook to the U.S. National Response Plan to research papers – the course covers the fundamentals of preparedness, mitigation, response, and recovery. This “all-hazards” approach provides an in-depth analysis of natural, technological, and man-made disasters. In addition to discussing basic theories of disaster management, the course introduces students to key field methods, including simulation modeling, consequence analysis tools, design criteria, statistical and case study methods (“lessons learned”), and risk analysis. ENCE 7325

**Facilities Planning.** (Elective) Explore real-world applications of facilities planning and master the technical skills necessary for effectively planning and managing construction projects within the context of three key elements: program planning, project planning, and activity planning. This course utilizes various modeling approaches to illustrate the planning process. ENCE 7370

## CRITICAL NEEDS...

### Infrastructure Systems Management (ISM)

**Introduction to Facilities Engineering Systems.** (Elective) Explore the inter-relationships of fire protection, HVAC, electrical, plumbing, lighting, telecommunications, and energy management systems for buildings. A life cycle approach examines each of these systems with respect to cost, durability, maintainability, operability, and safety. Discussions will incorporate facility operations, facility maintenance and testing, and assessments. ENCE 7366

**Introduction to Environmental Management Systems.** (Core) Expect an in-depth introduction to environmental management systems (EMS's) that looks at systems such as EMAS, Responsible Care, OSHAS 18000, ISO 14000, and the Texas EMS program. Examine, step-by-step, the ISO 14001 standard – from the policy statement to the management review – to fully understand the Plan-Do-Check-Act system approach. Curriculum also includes an introduction to management system auditing, the requirements of a system auditor, and an overview of the certification process. ENCE 7350

**Management of Information Technologies.** (Elective) Defines management tie-in to an organization or government entity's enterprise-wide computer resources. Presented in the context of current, “real-world” applications, topics include: strategic planning of computer resources, budgeting and fiscal controls, design and development of information systems, personnel management, project management, rapid prototyping, and system life cycles. EMIS 7360

**Electrical, Mechanical, and Piping Systems.** (Elective) Examine a building's mechanical and electrical systems, taking into account space planning and architectural considerations, including cost and environmental impact of the mechanical and electrical systems. Prerequisites: Undergraduate Introduction to Electrical Circuits, Classical Mechanics, and Fluid Dynamics, or instructor's approval. ENCE 7369

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“Today's engineers must develop broad professional and leadership skills to excel in a world marketplace. These offerings will, of course, focus on leadership challenges, managing project phases, meeting deadlines, and supervising teams to obtain outcomes. The exciting element to this certificate series is its emphasis on the bigger picture. ... how project management impacts a dynamic global environment.”

— Ret. Major General Richard Mentemeyer, **Partner/President of Tri-Tech, LLC**, and member of Lyle's Project Management Focus Group

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