



Master in

ENGINEERING

WITH SPECIALTY IN BUILDING MANAGEMENT

CONTEXT AND RELEVANCE

The building industry is essential to achieve Mexico's National Development Plan objectives. Accordingly, the private sector's involvement in infrastructure, equipment and housing investment projects has had a relevant growth, impacting the recruitment of highly qualified staff to coordinate the entrepreneurial organization structure areas; it has also enhanced organizations' interest to incorporate education and training processes for their staff.

The Master's in Engineering with Specialty in Building Management aims to train professionals with comprehensive knowledge and abilities, and with the ethical approach necessary to find solutions to the problems posed by sustainable development of new infrastructure and adequate functioning of the existing.

The program contributes to train mid-level and senior managers of the building sector companies; by integrating the different management areas of building projects, graduates will improve people's life quality.

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LINKAGE

The Engineering Department has an array of formal and informal avenues of collaboration with national and foreign higher education institutions and research centers. We underscore the following liaisons:

- American Concrete Institute
- American Society for Engineering Education
- Colegio de Ingenieros Civiles de México
- Cámara Mexicana de la Industria de la Construcción
- Colegio de Ingenieros Civiles de México
- Lean Construction Institute

OBJECTIVES

General

To train professionals of the building industry as leaders with high performance, entrepreneurship, ethical attitude, and social commitment, providing a solid theoretical and methodological base resulting in opportunities for the building industry companies and in improvement of the populations' life quality.

Specific

1. To conduct the transformation of non-structured management into a structured building management offering integral solutions to infrastructure problems.
2. To analyze comprehensive projects including planning, funding, building and operation stages, as well as technical solutions.
3. To establish strategies to evaluate public and private projects in technical, economic, legal and environmental impact aspects.
4. To apply sustainable practices and supply chain management criteria when requesting and procuring economic, energy and material resources for building projects.
5. To establish risk assessment indices in order to sensitize the company and its work teams and enhance their performance in occupational, natural, social, economic, and technological risks management.
6. To identify design innovation trends in technology and methodology associated with performance measurement in the building industry.
7. To manage information technologies applicable to the development, monitoring and control of projects and construction.
8. To implement integral project planning, considering the topics of integration, budget, quality control, completion time, procurement, human capital, risk management, execution, control of changes and project closure.

APPLICANTS PROFILE

The Master's is designed for professionals occupying mid and top leading positions in companies and government offices within the private and public building industry sectors, in need of in-depth knowledge of Projects Management. As reference only: civil engineers, architects, building engineers, industrial engineers, and mechanic-electrical engineers.

GRADUATES PROFILE

Knowledge

- Formulation of different possible scientific solutions - based on the outcomes of operation research projects - that consider human capital, meet the problems identified in the company's areas and improve individual and group productive efficiency.
- Design and coordination of strategic reflection processes targeting the comprehensive improvement of the firm: competitive analysis processes, quality processes, and value engineering of organizational processes, in order to satisfy clients and build an organizational environment fostering engagement with the company's outcomes.
- Project management: operation, leadership, and assessment of programs and services associated with the companies of the public or private building industry.
- Development of human resource training plans and programs intended to deliver building management knowledge to a greater number of persons via direct actions significantly impacting the trainees' performance.
- Establishment of funding and resource procurement plans, and performance assessment instruments to evaluate the works within the parameters of stipulated costs, time and quality.
- Assessment of innovative processes and procedures that emerge from value engineering, continuing improvement and sustainability analysis processes, applicable to projects lifecycle, using domestic and foreign methodologies.

Skills to

- Identify and apply modern engineering and communication technologies to foster teamwork at domestic and international levels.
- Contribute to planning, execution and control of projects and constructions works with forefront methodological proposals that facilitate scenarios identification, forecasting,

risk management and fulfillment of the building projects stipulated time, cost and quality parameters.

Attitudes

- High performance, properly qualified, objectivity, critical thinking and creativity, sensitive to and responsibly committed with Mexico's social problems.
- Perception of Mexico's current and future needs, proactively generating solutions through integral projects at local and regional level.
- Implementation of strategies and actions promoting the inclusion of sustainability criteria in building projects in order to enhance performance and contribute to improve the quality of life of the users of the projects.

FIELD OF WORK

Graduates from the program can develop their career in management, planning, building, programming, and control areas within firms, projects, and construction works. In the public sector they can get involved in infrastructure development companies.

FACULTY MEMBERS

Pedro Freixas Rico

Ph.D. in Civil Engineering, M.Sc. in Industrial Engineering & Management, M.Sc. in Infrastructure Planning & Management, M.Sc. in Engineering Economic Planning, Stanford University

B.Sc. in Civil Engineering, Universidad Iberoamericana

Areas of interest:

Financial assessment of infrastructure projects and real estate development.

Relevant Publications: "Air Transportation Planning: An integrated approach". Stanford: Stanford University Press, 1982; Centro de Investigación para el Desarrollo *La conversión industrial en México: Concepto y requisitos*, México: Editorial Diana, 1988; Centro de Investigación para el Desarrollo, *El reto de la Globalización para la Industria mexicana*, México: Editorial Diana, 1989; Centro de Investigación para el Desarrollo, *Hacia una nueva Política Industrial*, México: Editorial Diana, 1990.

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Víctor Antonio López Rodríguez

M.Sc. in Urban Development Projects and B.Sc. in Civil Engineering, Universidad Iberoamericana

Areas of interest:

Building processes design, project optimization and control.

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Rómulo de Jesús Munguía Salazar

M.Sc. in Engineering, Universidad Iberoamericana

B.Sc. in Civil engineering, Universidad Nacional Autónoma de México

Area of interest:

Planning, direction, and control of building works.

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Roberto Carlos Tinoco Guevara

M.Sc. in Business Systems Engineering and B.Sc. in Civil Engineering, Universidad Iberoamericana

Area of interest:

Mechanical and environmental performance of materials used in the building industry.

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COMPULSORY SUBJECTS

1. Building Industry in Mexico
2. Human Capital and Strategic Planning
3. Planning, Budgeting, Programming and Control
4. Building Equipment and Methods
5. Building Legal Aspects
6. Building Companies' Accounting and Finances
7. Constructability Seminar
8. Building Work Management
9. Economic Analysis and Financial Assessment
10. Research Seminar
11. Project Direction
12. Elective I
13. Elective II
14. Elective III

ELECTIVE SUBJECTS

- Industrial Building Seminar
- Integral Quality Management
- Building Seminar
- Technology of Materials
- Estate Development
- Information Technologies Applied to Building

LINES OF RESEARCH

1. Technical-managerial methodology innovation for building companies and projects processes.
2. Funding schemes for the integration of building industry-based project models and business models fostering the development of the country.
3. Effective managerial practices applied to planning, design and execution of projects from concept formation to completion, using project lifecycle models.
4. Technological innovation in building materials and equipment use and optimization.
5. Integral sustainability of building projects.

ADMISSION PROCEDURES

- Original birth certificate
- Simple photocopies of university certificate and professional license. Photocopies will be verified against original B.Sc. or M.Sc. certificates
- Course subjects request form
- Application form (provided by School Service Directorate along with new admission instructional materials)
- Letter of acceptance to the Graduate Program
- Letter of commitment and Addendum duly completed and signed (provided with first admission instructive materials by the School Service Directorate)
- Application process payment receipt

*Each graduate program has specific admission requirements. Please consult the coordinator.

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