



Master in

# QUALITY ENGINEERING

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Our program has created **The Mexican User Satisfaction Index**, which is positioned as a measurement tool for government and business initiatives regarding the user's satisfaction with the services.

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## CONTEXT AND RELEVANCE

The Master in Quality Engineering is a multidisciplinary graduate program meeting the needs of a globalized economy, creating and developing innovative, competitive, and humanist quality organizations.

Its competitive advantage consists in bringing together the technical and human components. The Universidad Iberoamericana is the only institution of higher education in México that develops Quality Engineering with emphasis in statistics and with a humanist philosophy because a clear understanding of the position of the human being within the organizations helps to improve processes quality. Students design and implement innovative, effective, and socially responsible systems, both in its internal conformation and in its contribution to the environment.



## LINKAGE

The Engineering Department has a broad network of formal and informal avenues of collaboration with other institutions, including:

- *American Society for Quality (ASQ)*
- *Canadian Society for Quality*
- *Consejo Mexicano de Investigación Educativa*
- *Institute of Public Administration of Canada (IPAC)*
- *Society for Research into Higher Education*
- *Universidad Rafael Landívar*
- *University of Michigan*

## OBJECTIVES

### General

To train professionals engaged in applying with high human sensitivity statistical and management approaches fostering innovation, productivity, and competitiveness.

### Specific

1. To train professionals capable of developing organizational systems:
2. Promoting the united and orderly progress towards the quality of the administrative, technical and human dimensions, using interdisciplinary approaches.
3. Developing the best products and processes applying advanced statistical methods, such as the Six Sigma Methodology.
4. Complying with International Standards such as ISO9000 and ISO14000.
5. In line with general or sector-related quality-driven leadership models.

## APPLICANTS PROFILE

Professionals who are leaders in their organizations, have high analytic skills to identify improvement opportunities, and possess client service and team-working competencies, passion for competitiveness, and are result oriented.

## GRADUATES PROFILE

The Master's program provides a systemic and multidisciplinary approach with novel methodologies to identify, analyze and solve complex organizational problems. During training, students have the possibility of earning certificates such as:

- Associate in Quality Improvement
- Quality Auditing
- Quality Manager
- Quality Engineer
- Six Sigma Black Belt
- Six Sigma Green Belt

## FIELD OF WORK

The Master's graduate stand out for knowing and using methodologies from several disciplines to contribute with novel, feasible and high-impact solutions to continuously improve organizations, goods and services satisfying the needs of the target groups. Its approach opens doors for the graduate in the public and private sectors, inside the country or abroad, to perform a variety of responsibilities and occupy leading positions from where he/she can introduce changes in operational and cultural systems.

The knowledge acquired in the fields of statistics, engineering, and management will allow the graduate to pursue a career in companies or institutions, setting up integrated management systems (quality, environment, health, and safety in the workplace), as well as applying quality models in different processes.

# FACULTY MEMBERS

The Master's in Technological Innovation Management is an applied program, composed by faculty members with an acknowledged trajectory and a common professional interest. Professors are professionally active, meaning that their main work is in the industrial field; however, the Master's program has two full-time professors who are authorities in their fields:

## María Odette Lobato Calleros

Member of the National Research System, Level I.

Ph.D. in Education with specialty in Organizational Studies, Universidad Autónoma de Aguascalientes.

M.Sc. in Quality Engineering, M.A. in Human Development and B.Sc. in Industrial Engineering, Universidad Iberoamericana.

### Line of Research:

Study of Organizations (Quality, Competitiveness, and Humanism-based approaches).

### Recent publications:

Lobato-Calleros, O., Rivera, H., Serrato, H., and Gómez, M.E. "The Mexican User Satisfaction Index: A case study applied to a social program." TQM Journal, vol. 25, núm 4, 2013, pp. 384-398; Lobato-Calleros, O., Rivera, H., Serrato, H., Delgado, M.A., Gómez, M.E., Acevedo, A., León, C., Cervantes, P., Méndez, I. "Development of the Mexican User Satisfaction Index (IMSU) to Evaluate social government programs in Mexico: the case of the daycare social program" Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior. Vol. 25, 2012, pp. 118-129; "Exploring the characteristics of the Mexican higher education system in the context of complex system approach". In Hiroki Sayama, Ali a. Minai Dan Braha, Yaneer Bar.Yam (editors). Unifying Themes in Complex Systems Volume VIII. Proceedings of the Eighth International Conference on Complex Systems. United States of America: New England Complex Systems Institute Book Series, 2011.

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## Felipe Antonio Trujillo Fernández

M.Sc. in Systems, Planning and Computer Science, Universidad Iberoamericana

B.Sc. in Electronic Engineering specialized in Communications, Universidad Autónoma Metropolitana-Iztapalapa

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## LINES OF RESEARCH

The Master's program research area is working on the process of establishing the Mexican User Satisfaction Index Unit, evaluating the products and services produced by public institutions and by companies from the users satisfaction perspective. For this purpose, we have developed a methodology based in the American Customer Satisfaction Index, an indicator acknowledged by the World Bank.

## SYLLABUS

The Master's in Quality Engineering is comprised as follows:

<b>First semester</b>	<b>28 credits</b>
Quality Models and Competitiveness	6
Statistical Quality Methods	8
Human Development and Organizational Behavior	8
Degree Seminar I	4
<b>Second semester</b>	<b>24 credits</b>
Design of Experiments	8
Statistical Process Control	6
Customer-Oriented Quality Techniques	6
Degree Seminar II	4
<b>Third semester</b>	<b>17 credits</b>
Elective I	8
Elective II	6
Elective III	6
Degree Seminar III	6
<b>Total Credits</b>	<b>69 credits</b>

## ELECTIVE SUBJECTS

The program's elective subjects comprise a flexible and dynamic body so that the student can chose to go into one or more areas of his/her interest.

- Reliability
- Integrated Management Systems
- Selected Topics in Statistics
- Design and Simulation
- Lean Six Sigma Methodology
- Selected Topics in Human and Organizational Development
- Selected Topics in Management
- Organizational Studies
- Quality Costs
- Strategic Management

## ADMISSION PROCEDURES

- Interview with the coordinator
- Curriculum Vitae with photograph
- Letter of Purpose, defining the professional profile of the applicant and reasons to study the Masters' program.
- Obtain the Letter of acceptance to the Graduate Program.
- Take the National Graduate Admission Exam, EXANI III, Ceneval.

For further information, please contact:

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